

**Cinema, Language, Reality:
Digitization and the Challenge to Film Theory**

Marc Furstenau
Department of Art History and Communication Studies

A thesis submitted to McGill University in partial fulfillment of the requirements of the
degree of Doctorate

©Marc Furstenau 2003



Library and
Archives Canada

Bibliothèque et
Archives Canada

Published Heritage
Branch

Direction du
Patrimoine de l'édition

395 Wellington Street
Ottawa ON K1A 0N4
Canada

395, rue Wellington
Ottawa ON K1A 0N4
Canada

Your file *Votre référence*

ISBN: 0-612-98256-4

Our file *Notre référence*

ISBN: 0-612-98256-4

NOTICE:

The author has granted a non-exclusive license allowing Library and Archives Canada to reproduce, publish, archive, preserve, conserve, communicate to the public by telecommunication or on the Internet, loan, distribute and sell theses worldwide, for commercial or non-commercial purposes, in microform, paper, electronic and/or any other formats.

The author retains copyright ownership and moral rights in this thesis. Neither the thesis nor substantial extracts from it may be printed or otherwise reproduced without the author's permission.

AVIS:

L'auteur a accordé une licence non exclusive permettant à la Bibliothèque et Archives Canada de reproduire, publier, archiver, sauvegarder, conserver, transmettre au public par télécommunication ou par l'Internet, prêter, distribuer et vendre des thèses partout dans le monde, à des fins commerciales ou autres, sur support microforme, papier, électronique et/ou autres formats.

L'auteur conserve la propriété du droit d'auteur et des droits moraux qui protègent cette thèse. Ni la thèse ni des extraits substantiels de celle-ci ne doivent être imprimés ou autrement reproduits sans son autorisation.

In compliance with the Canadian Privacy Act some supporting forms may have been removed from this thesis.

Conformément à la loi canadienne sur la protection de la vie privée, quelques formulaires secondaires ont été enlevés de cette thèse.

While these forms may be included in the document page count, their removal does not represent any loss of content from the thesis.

Bien que ces formulaires aient inclus dans la pagination, il n'y aura aucun contenu manquant.


Canada

Acknowledgements

I would like first of all to acknowledge the efforts of Will Straw. He has provided me with invaluable assistance and advice, without which I would never have succeeded to the extent I have. He has also been a steady source of inspiration and guidance in the often dramatically changing context of the Graduate Program in Communications, providing many students, with varied interests, with a sense of purpose and common cause. Many of us owe him a great deal.

I would like to thank Martin Lefebvre for first introducing me to the philosophy of Charles Peirce, and for the many hours we have spent discussing the pleasures and complexities of his semeiotic, while wondering about the potential value it might have for specifically cinematic questions. Any inclinations I may have on that subject derive directly from our dialogue. Any misunderstandings are, of course, my own.

Christine Strähle has been a source of unfailing strength and support. Without her love and guidance I would have been lost. Among the many friends I've made in Montreal, Geoff Stahl has provided me with inspiration and camaraderie – as well a viable social life. My time in Montreal would not have been the same without the friendship and encouragement of Anthony Kinik, Peter Urquhart, Michael Storch, Leslie MacAvoy, and Iain MacDonald.

My mother, Jan Carroll, and her husband Robert, and my sisters, Julia Cole, Sonia Furstenau and Jessie Lloyd, have all believed – often when I didn't – that I was on the right path, and have given me nothing but encouragement and support.

* * *

My research has been partly supported by a Doctoral Fellowship from the Social Sciences and Humanities Research Council of Canada.

* * *

This thesis is dedicated to the memory of my father, Peter Furstenau, and his wife, Patricia Lloyd.

Abstract

Cinema, Language, Reality: Digitization and the Challenge to Film Theory

Digital cinema has provoked a strong response over the last decade, not only from the movie-going public, but also from film theorists. It has re-opened basic theoretical questions about cinematic representations of and reference to reality.

This thesis begins with a critical review of the vast theoretical literature dealing with the digitization of the cinema. Most theorists have come to the conclusion that the cinema is dead because digitization has severed the ties between what we see on the screen and real life. At root, this conclusion is derived from a structuralist, nominalist position prevalent in contemporary film theory.

I argue, instead, that film theory needs to re-address the complex issue of the relationship between image and reality, rather than simply accepting the traditional view. In so doing, I follow Stanley Cavell's call for a more thorough consideration of realist traditions in film theory, the premise of which is an unquestioned relationship between representation and reality.

The complexity and subtlety of that relationship has been addressed most systematically and fruitfully by Charles Saunders Peirce. Indeed, many structuralist theorists have made reference to Peirce in response to the shortcomings of a semiologically inflected film theory. In the second step of my argument, however, I show that structuralist theory has produced misleading conclusions, since a Peircian semiotics is incommensurable with the structuralist position. In fact, this implicit conflict has led theorists to doubt the real in the digital cinema, rather than investigating the logically necessary continuity of reality and representation, regardless of its technological kind.

* * *

Au cours des dernières années, le cinéma numérique a provoqué plusieurs réponses virulentes, non seulement chez les cinéphiles, mais aussi chez les théoriciens du cinéma. Mais quel que soit la réaction du public ou des experts, le cinéma numérique semble nous obliger de retourner à la problématique de la représentation cinématographique de la réalité.

Dans un premier temps, nous analysons la littérature théorique traitant de la numérisation du cinéma. La plupart de ces auteurs tirent la conclusion que le cinéma traditionnel est mort puisque les liens entre ce qu'on voit à l'écran et la vie réelle ne tiennent plus à l'époque de la numérisation. Cette conclusion est souvent basée sur une analyse structuraliste et nominaliste très répandue dans les études contemporaines sur le cinéma.

Dans un deuxième temps, je propose, par contre, qu'il faut repenser la problématique complexe de la relation entre image et réalité, plutôt que simplement accepter ce qu'en dit

la tradition. En ce faisant, je m'inspire de l'œuvre de Stanley Cavell, qui nous appelle à une réflexion plus profonde sur les traditions réalistes de l'histoire du cinéma, ce qui nécessite une réflexion préalable sur le rapport entre la représentation et la réalité.

Toutefois, l'analyse la plus systématique et la plus féconde de ce rapport fut élaboré par Charles Sanders Peirce. Et en effet, beaucoup de structuralistes eurent recours à une sémiotique peircienne précisément parce qu'ils voulaient surmonter les déficits d'une théorie du cinéma trop influencée par la sémiologie courante. Donc dans un troisième temps, je démontre que ce recours à Peirce ne pouvait que mener à des interprétations erronées ou du moins contestables, puisque la sémiotique peircienne est au fond incompatible avec le structuralisme. Le fait que plusieurs théoriciens du cinéma ne reconnaissent pas cette incompatibilité a comme conséquence qu'ils ont la tendance de douter de la réalité qui nous est offert par le cinéma numérique, au lieu d'explorer la continuité logique qui doit nécessairement exister entre réalité et représentation, quel que soit sa forme.

Table of Contents

Introduction: The Cinema in Jeopardy	1
Chapter 1: The Problem of the Digital	21
Birth and Death	21
The End of Cinema	39
A Cinematic Revolution?	47
The Problem of Digital Imagery	52
Chapter 2: Digital Cinema	56
Change and Continuity	56
Digital Filmmaking	70
Chapter 3: Digital Theory	94
Theories of Digital Cinema	94
The Fate of the Real	104
The Residue of Reality	113
Digitization and the End of Indexicality	124
Chapter 4: Cinema and Semiology	135
The Cinema's End	135
Semiology and the "Referential Fallacy"	138
Cinema, Language and Reality	147
Chapter 5: Reference and Reality in the Cinema	166
Reality and Illusion	165
The "Real" in Cinema	173
Signs and Non-Signs	183
Signs and Sign Functions	191
Semiology and its Discontents	196
Chapter 6: The "Language" of Digital Cinema	217
Accounting for Reality	217
Lev Manovich and the "Language" of Digital Cinema	221
The Loss of the Index	225
Reality Re-Presented	243
Cinema and Skepticism	251

Chapter 7: The Weight of the Real	253
Against Reality	253
Stanley Cavell: Cinema, Knowledge and Community	255
The Real and the Nominal	266
Fallibility and Certainty	277
Conclusion	295
The “Death” of the Cinema	295
The Cinema and the World	303
Bibliography	311

Introduction: The Cinema in Jeopardy

Cinema, which was the key method to represent the world throughout the twentieth century, is destined to be replaced by digital media: the numeric, the computable, the simulated. This was the historical role played by the cinema: to prepare us to live comfortably in the world of two-dimensional moving simulations. Having played this role well, cinema exits the stage. Enters the computer.

Lev Manovich
("Cinema and Digital Media" n.p.)

Film theory has, in the past few years, been confronted by what appears to be a significant crisis. Recent technological change, the introduction and proliferation of digital and computer technologies for the production, distribution and exhibition of moving pictures, seems to have produced a wholly new theoretical object, a *digital cinema*, which is contrasted with and understood to be replacing a traditional cinema. The qualities and features of this new object are challenging many of the traditional assumptions and strategies of film theory and film studies, even bringing the very discipline into question, or at least dramatically shifting its perspective and approach. Certainly, there has been an abrupt and concerted change of emphasis, as new questions and new problems seem to confront the discipline. The issue of *digitization* has become a central problematic in film theory, generating a whole new sub-field of inquiry and substantially altering research interests in the last ten years or so. The problem of the digital has become practically inescapable. Film critics, theorists and historians increasingly feel obliged to contend with the issue, and the consequences of digitization are widely accepted as profound, even radical, requiring a significant reappraisal and reevaluation of the cinematic phenomenon. In the face of digitization, it has become imperative to ask basic questions about the nature and constitution of the cinema, to

address and account for the apparently dramatic extent of the change, and to define and describe what is understood as a fundamentally new phenomenon. An immense literature on the subject has already been produced, ranging from melancholy expressions of loss and regret and announcements of the death or the end of the cinema, to enthusiastic predictions of an entirely new, profoundly altered, *post*-cinematic age, which will require a revision and overhaul of not only the basic assumptions of film theory, but of fundamental philosophical concepts, of the basic terms of ontology and epistemology, of reference and representation, of knowledge and perception. The crisis of the cinema, and of the theory of the cinema, the perceived transformation of the basic conditions for the production and reception of moving imagery, and the ostensible emergence of a wholly new digital apparatus, is cast as a more comprehensive crisis of visibility. The end of the traditional cinema has signaled the end of traditional explanations of the relationships between what we see and what we know. Out of the crisis have emerged calls for new theories, for new approaches, for a new aesthetic of digital cinema.

The need for a new or radically revised theoretical approach, however, is far from clear. The claims for essential and momentous change, upon which such a need is ostensibly based, do not seem to correspond to the actual state of affairs. More, in fact, seems to have remained the same in the cinema, after the advent of digitization, than to have changed. The terms of filmgoing, the terms of the basic cinematic experience, of both producing and viewing films, have undergone some notable alterations over the last decade or two, to be sure, but on the whole, the cinema has maintained its basic integrity as a phenomenon. There have been changes, of course, even important changes, but these may be described more as elaborations or embellishments, and may be placed within a far

more continuous history of technological development, rather than as a constitutional transformation. Yet the emphasis has been on the drama of digitization. Film theory has accepted, as a central premise, that the process has necessarily engendered a radical change in, or even a profound deformation of, the cinema. A careful consideration, though, of the current contexts and conditions of cinematic production and reception would immediately belie such claims, and even a cursory glance suggests that the main contours of the cinematic phenomenon have remained the same, that the familiar structures of the cinema have been maintained.

The term digitization is used to describe a broad range of technical alterations, additions, and emendations, which have affected particular parts of the cinema. The extent of change varies dramatically, however, depending upon which part one considers. While there are more specifically digital effects incorporated into films, and perhaps even a greater reliance upon special effects generally (although this is debatable, as we shall see), and while there have even been a number of wholly digitally-animated films released, as well as films shot entirely on digital video (though typically printed on film for exhibition); and while digitization has made the copying and transmission of films easier, raising some relatively significant copyright issues for the film industry; and while the realms of sound production and film editing have been quite comprehensively digitized, with some observable effects; all these, and other such changes, despite having discernible consequences, are nevertheless effectively localized and specific, analyzable on their own terms, and placed within broader contexts of change and development. They have not had the effect of transforming the cinema in any general way or to any comprehensive degree. While there has been much discussion about digitization, about a

digital revolution, there has been no real rupture, nor have we really seen the sort of tumult and disruption associated with other significant technological changes in the cinema, such as the transition to sound and then to color, or even the introduction of widescreen processes or stereophonic sound. What is most remarkable about digitization, in fact, is the degree to which it has been subordinated to the basic and traditional cinematic norms. This, though, is a common and familiar pattern. Even the earlier “revolutions,” once considered, appear far less revolutionary than is usually assumed. When one considers the history of technological change in the cinema, in fact, it becomes clear that that there is little that is actually “revolutionary,” and that whatever disruption and tumult there has been is inevitably moderated and restrained.

Even the two supposedly great revolutions in the history of cinematic technology – sound and color – have been shown to have been less dramatic and tumultuous than often thought. As Richard Koszarski has insisted, “[i]t is easy to exaggerate the impact of the premiere of *The Jazz Singer* on 6 October 1927. Silent films did not disappear overnight,” he notes, “nor did talking films immediately flood the theatres” (90). The process was more or less gradual, and was based upon technologies and techniques for synchronizing of sound and image that had been in development for many years, and would take many more years to develop and standardize. The *idea* of sound film, moreover, had existed at least since Thomas Edison had considered adding pictures to the recordings he had made with his phonograph. The subsequent realization of such an idea was a lengthy and complex process, developing gradually as both a viable technological and commercial possibility.

The introduction of color, too, occurred over a considerable period of time, beginning at least as early as 1915, when the Technicolor Corporation was founded, although various artificial-color systems and processes existed, as Koszarski says, long before the advent of the feature film. A range of toning, stenciling and tinting processes had ensured that color was an integral part of the cinema from its very first moments (127). In the 1930s, though, Technicolor became dominant, having perfected its three-color subtractive process. Producing three negatives, red, green and blue, which could be combined during processing (unlike earlier “additive” systems, which required filters on both the camera and on the projector), the process made color cinema a practical and relatively affordable option. Between 1932 and 1947, however, as Brad Chisolm has noted, “[n]inety percent of the films released in the United States . . . were still black and white” (Chisolm 216). Following an anti-trust suit against Technicolor in 1950, rival companies and processes flourished, including Eastman Color, TruColor, De Luxe and others. Yet even once a wide choice of processes had been made available, and the production of color films had been made even easier and less expensive, there was no great rush to convert to color. “The film studios,” writes Brad Chisolm, “were no longer dependent on the availability of Technicolor cameras” after the break-up of its monopoly, yet “the demand for color did not appear to be drastically greater. . . . Film industry executives saw no tremendous need to convert to color,” and in the first three years of the newly opened market there was only a 2 percent increase in color films (Chisolm 218). As Chisolm argues, it was not really until the 1960s, after *television* had fully converted to color, posing an apparent threat to the film industry, that color in the cinema became the norm. There were also other factors, too. As Richard Maltby has argued, the

monochromatic image had achieved a sense of verisimilitude, and color initially posed a threat to the carefully established conventions of a black and white cinema (Maltby 159).

Neither sound nor color, then, appeared suddenly on the cinematic scene. There are in fact no specific moments of acute change or revolutionary transformation associated with such developments, which occurred over time and were progressively accommodated and incorporated into a cinematic context. As Koszarski and many other historians have noted, the cinema was never truly “silent,” nor has it ever been wholly without color. The degree and scope of the application of such processes changed, of course, as did the processes themselves, but there is no single point at which one may identify a comprehensive change to color or to sound. The emphasis has been on gradual implementation, in order to accommodate such changes, which are moderated by more general cinematic principles as well as by specific aesthetic, economic, industrial and cultural factors. The history of the cinema is, in large part, the history of gradual and incremental accommodation, incorporation and standardization of new technologies and processes. Even the technologies commonly understood as revolutionary, such as sound and color, never burst on the scene at any particular moment, nor did they abruptly upset or transformed the medium in any truly significant manner.

Other, less considered processes, in fact, such as widescreen, may well have had more demonstrably significant effects. John Belton, in his history of widescreen, has described the changes to the spectatorial experience that the various processes engendered (Belton 183-210). Extra-cinematic developments, such as the introduction of television, also had a significant effect on the cinema, as described in the various accounts offered in Tino Balio’s anthology, *Hollywood in the Age of Television*. Yet even

in these cases, what were once novel technologies, such as widescreen, or apparently significant rivals, such as television, were effectively incorporated into the traditional terms of cinematic production and reception. The redefinition of spectatorship that Belton describes, took place, significantly, and was ultimately attenuated by, “a larger background of more conventional exhibition practices which came to dominate the industry” (211). Television, too, was accommodated. The sudden reversal of fortunes for the film industry that seemed to accompany the advent of television in the late 1950s and 1960s, and which seemed directly attributable to the sudden appearance of the new rival technology, was in fact the result of a complex variety of social, economic and political factors, as well as alterations to the business practices of the film industry, as Balio has explained. The crisis that faced the film industry by 1969, and which had been growing throughout the 1960s, was the result largely of an ill-conceived “blockbuster policy,” the sudden appearance of three new “major” studios, and only partly the result of television – and this was not that TV was rivaling the cinema, but that its demand for feature films for broadcast had become insatiable, providing the film industry with a ready market for its films, subsequently causing it to become less concerned with initial theatrical performance (Balio 259-60).

Robert Sklar has made a similar argument, in his “cultural history” of American movies. Television, often cast as a threat to the cinema, was in fact quickly and thoroughly incorporated into it, utilized as an alternative market and platform, and as a significant site for marketing and public relations. As Sklar argues, there were very many problems and difficulties that faced the film industry, beginning with the sudden and dramatic rise of attendance numbers in the years between 1935 and 1945, resulting in a

more complex and heterogeneous audience, which included more highly-educated spectators, more middle- and upper-middle class viewers, making the task of producing suitably varied fare more complex and difficult. These conditions only became more acute over the subsequent decades, as American society generally underwent significant changes. Television's effect on the cinema, while significant, has, Sklar insists, to be placed within this larger context. "[I]t is important to bear in mind," he writes, "that Hollywood had problems that would have seriously challenged its popularity and earning power even if television had never existed" (272). Moreover, the nature of its response to television was largely determined by its desire to overcome these problems, and the new technology was pressed into service, ultimately allowing the cinema to continue to flourish during an era of complex and significant change. Television did indeed become a central fact of American cultural life, causing some difficulties for the cinema, and producing some real changes, but the result was a dramatic revival and retrenchment, producing an even more secure future for the cinema. "Hollywood's collapse in the late 1960s was real," writes Sklar, "but not permanent" (321). Conditions changed, but the cinema maintained its centrality and its importance. "Television had taken over the cultural role of providing the continual fictional narratives [...] that theatrical motion pictures had once performed. Yet movies," insists Sklar, "maintained a preeminence in entertainment culture out of proportion, from a statistical perspective, to their diminished significance" (321). In the face of even dramatic technological change, the cinema persisted.

Such persistence may be explained. What all of these histories of technological change emphasize is what Belton describes as the transition "from novelty to norm" (34-

51), or what Richard Maltby presents as a process of “standardizing the experience” (168-78). “Although the histories of sound, Technicolor, and CinemaScope,” writes Maltby, “are usually presented as accounts of innovation, they also indicate the tendency of cinema technology to move towards standardization. In order to gain audience acceptance,” he argues, “a new technology has to offer its novel appeal within the existing, predictable framework of Hollywood’s formal conventions” (168). These conventions have become so widespread that such an account may be easily applied to most other, non-Hollywood cinemas, which have followed the basic process of standardization. Digital technologies, like the very many other novel technologies that have been introduced to the cinema over its history, or which have seemed to challenge the cinema, have been effectively incorporated into standard models and existing norms. New digital tools, as we shall see, have mainly been put to traditional uses, or have been utilized to produce a generally familiar effect or experience, or to realize already elaborated goals. Some new wrinkles may have been added to special effects, to be sure, but even these are mainly incremental, building upon already existing expectations about the cinema’s capacities to produce fantastic and spectacular imagery, which is, nevertheless, still “realistic.” The scope of possibilities for digital technologies is, in fact, quite radically circumscribed, and digitization has effectively followed the usual pattern of technological innovation in the cinema, which is to normalize and subordinate the new to already existing notions and standards. Indeed, it may well be argued that digitization has had the *least* impact of all the various technologies that have emerged and affected the cinema in the last century. While the consequences of the introduction of sound,

color, widescreen processes, were significantly moderated, these may well have been more profound and had a greater real effect than digital technologies.

Whether more or less significant, however, when placed within a proper historical context, the recent advent of new digital technologies, those affecting the cinema itself, and those contributing to the development of new platforms for the production, distribution and exhibition of moving imagery, of an increasingly complex and multi-faceted media and entertainment environment, may be shown to have been similarly incorporated into already existing structures, or subordinated to prevailing cinematic standards and norms. Instead, though, digitization is widely heralded as revolutionary, as wholly unprecedented, as producing radical change and bringing the existence of the cinema into question. Perhaps digital production and processing could be considered as radically new, unlike other earlier technologies, and its effects may be seen to have been sudden, dramatic and unprecedented. No one, it might be claimed, had imagined the computer at the beginning of the cinema's history, nor the extent to which the image may now be altered, or even wholly fabricated, from purely numerical data. The novelty and abruptness of digitization, though, is reduced once the actual consequences are considered, and once the actual uses to which digital technologies are being put are taken into account. Digital alteration and fabrication continue longstanding traditions in special effects and animation, building upon already existing assumptions about the mutability of a pro-filmic "reality." In many respects, digital technologies are prompting a return to the most basic cinematic technologies and approaches. The famous "bullet-time" effects of *The Matrix*, for instance, which produce the impression of a 360 degree camera movement around an object or an individual, is achieved by arranging a circle of still

cameras, the shutters of which are sequentially triggered, in a manner identical to the chronophotographic techniques developed by Eadweard Muybridge in the 1870s. The effect may be fully utilized now that the motion between shots may be digitally smoothed, and the cameras may be digitally erased from the final scene.

Other consequences of digitization may be easily placed within on-going histories of development. The widely proclaimed *dispersal* of the moving image, for instance, the proliferation of new formats and new platforms, that digitization is understood to have initiated, is a process that has been long underway, and may be easily related and connected to the developments of television, and then the VCR, both of which enlarged the contexts of reception, without significantly reducing the importance or significance of theatrical exhibition, considered the defining mode of cinematic presentation. Even these developments, though, had precedents in the variety of modes and apparatuses that have existed for the presentation, in both public and domestic contexts, of both pre-cinematic and cinematic moving images.¹ All of these, though, have existed with and informed, and never really jeopardized, the basic terms of theatrical exhibition that developed. Even with DVDs, high-definition TV, home cinema, cable and pay channels, and now even internet distribution, theatrical presentation remains significant, perhaps even central. It may have even increased in scope and importance, with a recent construction boom, and the return of grand cinemas, “mega-plexes,” which are on the scale of the great movie

¹ For a useful account of the complex and heterogeneous character of pre-cinematic contexts for the presentation of moving images, and the subsequent development of a variety of “screen practices” which would determine the development of many subsequent cinematic modes and practices, see Charles Musser’s history, *The Emergence of Cinema*. In his account of “proliferating screens,” Will Straw has also implicitly suggests the link between the contemporary dispersal of moving imagery – which he significantly notes is manifesting itself in an “explosion of artifacts” (118), in a variety of physical devices, belying notions of the “dematerialization” of the image – and the history of optical toys and gadgets that predated and informed the development of the cinema.

palaces of the past, perhaps even surpassing them. Attendance has grown steadily, and going to the movies has remained a significant and central cultural activity, as Charles Acland has argued in his account of cinema-going and the rise of mega-plexes.²

Beyond reception and theatrical exhibition, virtually all the main aspects of cinematic culture have remained in place. While there have been some minor developments and alterations, the basic narrative, formal and aesthetic structures of film form have maintained their integrity. The star system remains in place, as well as the basic performative conditions. While some actors have had to learn how to relate to blue-screens, and to imagine objects and entities that will be added later, and may also have had to learn some basic trapeze movement as wires, cables and harnesses – which may be digitally removed in post-production – are exploited to produce more spectacular actions sequences, acting and performance has, on the whole, remained within the naturalistic norms that have long prevailed. These are part of a larger, comprehensive context of presentation and reception that has persisted. What we see in the cinemas, the quality and characteristics of the cinema as a whole, has remained remarkably consistent. Yet claims for the revolutionary impact of the cinema are routinely made, and the prevailing sentiment is that we are in the presence of something wholly new. The basic question of this thesis, then, is why certain specifically technical alterations to particular aspects of cinematic production and reception, which may be placed quite simply within an ongoing

² Theatrical presentation has not only remained significant, it effectively provides the basic model for home viewing. For an intriguing account of the domestic mode of film viewing, often contrasted with “cinema-going,” see Uma Dinsmore-Tuli’s study of “home cinema” and VCR use. In her research, Dinsmore-Tuli identifies a “range of domestic cinephiliac pleasures which blur the distinctions previously drawn between cinematic and domestic viewing registers” (316). Against the received notion that VCR viewing is characterized by narrative and temporal fragmentation, which the VCR controls make available, and which are assumed to be comprehensively taken advantage of, Dinsmore-Tuli finds that “anti-narrative, anti-cinematic viewing strategies correspond neither to those used by the particular group of cinephiles whom I interviewed, nor to any of the respondents who answered the questionnaire” (316).

historical pattern of development – or normalization and standardization – have engendered such a voluminous and impassioned response. Why has digitization produced such an extreme and extensive reaction? Proceeding from this is the question of the source of this theoretical crisis, of the widely felt need for a general theoretical revision. What is it that is understood to have changed so dramatically, so comprehensively, producing such a consensus? How has the cinema been understood that digitization can appear as such a radical development and seem to pose such a dramatic threat? What is the theoretical and historical source of the crisis of digitization?

That there *is* a specific, even singular, source for the crisis is suggested by the remarkably consistent character of most accounts of the digital cinema, by the basic uniformity of most analyses of digitization. One issue has emerged as the central problematic of a digital cinema – reality. More specifically, it is the severing of what had already been understood as a somewhat tenuous relationship between reality and the photographically based cinematic image that is being widely and confidently proclaimed. While tenuous, there was nevertheless, it is claimed, some sort of direct relationship between image and reality, between what we saw upon the screen and what had once been before the camera. The digital destruction of this relationship is what has produced a sense of crisis, understood to have ushered us into the post-cinematic era, characterized by the proliferation of unreliable digital simulations, unmoored imagery, disconnected from any empirical, pro-filmic objects and entities, and perhaps even from reality itself. The traditional cinema is defined according to its most basic *referential* capacities, its “indexicality,” as essentially a system for the recording of real objects and events, while the digital cinema is characterized in opposite terms, as simulation, as a system of

imitation, manipulation and fabrication. What is lost with digitization, it is claimed, is the cinema's very capacity for reference and designation, which had once been guaranteed by the mechanical and photochemical character of the cinematic apparatus. Digital images are understood to possess no inherent veracity or reliability. They do not seem to be connected or related to any objective reality or outside world. They are conceived as independent and wholly self-referential, indicating nothing more than the fact of their own generation.

It is such apparently novel phenomena that seem to require new explanations, even a new aesthetic, or a new theoretical approach generally, prompting many to begin elaborating models for an original digital theory, capable of contending with non-referential, or non-indexical imagery. There is a need, as Warren Buckland has insisted, for example, to "rethink the nature of filmic fictionality and representation by clarifying both the meaning of concepts such as mimeticism, realism, depiction, deception, and illusion [...]" (177-8). Film theory, he insists, is confronted by the digital cinema apparently novel capacity to refer to a non-existent world. "The notion," he contends, "that one can refer to a non-actual – possible – world has a significant number of consequences for theories of filmic representation [...]" (181). We are confronting what he describes as a "new aesthetic realism," based upon apparently new modes of reference and representation.³ Buckland's is a relatively positive account of a *new* mode of reference in the digital cinema, and he attempts to describe a difference between reference to the actual and reference to the possible. While his efforts are aimed at

³ Buckland insists upon the need for an account of the "possible worlds" of digital cinema, and offers what appears to be a set of ready explanations for the nature of these worlds in "possible world" theory. For a critique of Buckland, see Sellors.

providing a more robust account of reference, Buckland shares in the broader sense that the traditional mode of cinematic reference is in jeopardy, and is part of the more prevalent tendency to announce the *end* of reference, the destruction of the cinema's very capacities for designation and indication.

In its emphasis on the issues of reference, designation and indication – specifically upon the *loss* of such capacities – digital theory is revisiting old questions from the early years of contemporary film theory, which emerged from the more general elaboration, in the 1960s and 1970s, of a structuralist semiology, and the enlargement of the structuralist enterprise to encompass specifically aesthetic phenomena, including cinema. The most central characteristic of the structuralist project is its expulsion of the issue of reference. François Dosse, in his history of structuralism, has emphasized the *immanent* quality of the approach, derived from the terms of the Saussurean structural linguistics that underlie it. While acknowledging that “[t]he term ‘structuralism’ applies to a very diversified phenomenon [...] its central core, its unifying center, is the model of modern linguistics and the figure of Ferdinand de Saussure [...]” (Vol. 1; 43). Dosse emphasizes the two fundamental aspects of Saussurean linguistics, the first of which was a rejection of historicity, or a diachronic account of language, in favor of a synchronic approach, which would, as Dosse explains, study “the reciprocal combination of discrete units reveal[ing] the internal laws regulating a language” (47). This led to the second aspect, which was, Dosse says, “to see language as hermetic. The linguistic sign does not join a thing with its name, but a concept with an acoustic image, whose link is arbitrary; reality, or the referent is therefore placed outside the field of study [...]” (48). Describing the scope and importance of Saussure to the subsequent development of structuralism and

semiology, Winfried Nöth argues that his influence “has been considerable in two respects, heuristics and systematics of semiotics” (*Handbook* 63). As a heuristic, explains Nöth, “Saussure’s idea of linguistics as a *patron général* of semiology has been most influential [...]. With this guideline, nonlinguistic sign systems have been analyzed according to principles derived from linguistics. [...] As to semiotic systematics,” Nöth continues, “Saussure has drawn the researchers’ attention to the necessity of studying signs within systems. His ideas in this respect have had a decisive influence on the development of the semiotic theory of codes” (63). Among the most significant aspects of Saussure’s approach, which has resonated throughout subsequent developments, “is his explicit rejection of the referential object as an element in his semiology [...]” (60).

Guided by such principles, among others, the modern project of a structural semiology was elaborated, and through the 1950s, and then into the 1960s especially, it achieved many significant successes, altering the approaches and emphases of many disciplines, transforming the tools of structural linguistic analysis into a general methodological model, which could seemingly be applied comprehensively. Dosse describes, in his history, a “triumphant structuralism,” which continued to expand its borders, and enlarge its scope. “Triumphant structuralism,” writes Dosse, “even included a new field in its vast empire: the seventh art, cinema” (Vol. 2; 86). The figure most responsible for this expansion was Christian Metz, who, in an interview with Raymond Bellour in 1971, said, “I wanted to go to the limits of the metaphor of a ‘cinematographic language’ and try to see what it encompassed” (Qtd. in Dosse, Vol. 2; 86). Metz developed what Dosse describes as “an extremely formalized cinematographic language, [which] drew its linguistic from [Louis] Hjelmslev” (87). Elsewhere, though, Metz

characterized his project as an attempt to realize the great Saussurean dream – an analysis of the inherent, systematic organization, the logical structure, which underlies all cinematic expression

The application of such a model, though, to a phenomenon like the cinema proved difficult, if not outright impossible. Metz faced considerable difficulties substantiating his model, and the notion of cinematic codes, and of a structure of cinematic expression on par with linguistic structures, was difficult to corroborate. An explicit semiology of the cinema was never fully realized, and the Metzian project, while not abandoned, was significantly scaled back. Still, it was successful in at least one respect. “Today,” writes Dosse, “everyone agrees that films are coded, even if there is no systematic study of each individual film” – even if such a fact has never actually been demonstrated (418). The complex visual quality of the cinema seemed to resist any proof of what had become largely accepted; yet it remained as an underlying assumption of most subsequent theorizing about the cinema. The development of a theory of codes became a central aspect of the semiological endeavor, pursued most rigorously by Umberto Eco, who insisted that semiology, if it is to be at all effective and relevant, must be capable of accounting for all manner of phenomena, even such visual phenomena as pictures, photographs, and the cinema. Eco himself faced considerable difficulty in his endeavors, and has reconsidered many of his earlier arguments.

At the time, though, the necessity for the demonstration of the inherently *coded* nature of all cultural or semiotic phenomena was understood as crucial, despite the difficulty. As he undertook to provide such a demonstration, though, the problems he had to confront were ameliorated by some recent technological developments of which he had

become aware. Computers were making significant inroads in the 1970s, and he saw in recent advances in the “digitization” of imagery, in the schematization and fragmentation of images, their reduction into discrete units, that occurred when scanned and entered as numerical data into a computer, a hopeful sign that a fully realized semiological analysis of such phenomena might eventually be achieved. The basic semiological notion of the code has essentially been maintained, largely taken for granted in most subsequent semiologically-inflected accounts of a wide range of phenomena, including the cinema, relying to a large extent on the forceful and persuasive intuitions of such semiologists as Eco. The problem of demonstration remained, however. The recent dramatic advances in the computerization of imagery, though, and the digitization of the cinema, has returned the attention of theorists to the questions of codes, to the issues of discrete elements, and to the problems of structure and expression, providing what is now understood as an exhaustive demonstration of basic semiological principles, which Eco had seen foreshadowed in the early, rudimentary steps towards the digitization of visual information that he had seen. The degree to which the constitutional nature of the cinema, now subject to the binary coding of the computer, seems to correspond to a strict semiological analysis, has not passed unnoticed, and the announcements for a digital revolution are cast in terms of the sudden transformation of the cinema into the sort of coded phenomenon that it has long been understood as.

There is, though, a certain incoherence in most such accounts of the digital, which require that the cinema be understood as having once been directly and intimately related to reality, a link that has now been torn asunder, returning the cinema to the realm of the cultural, the conventional, the semiological. The melancholy and nostalgic quality of

most accounts of digitization is curiously tinged by a triumphant sense that the cinema has lost just those qualities that had for so long exceeded theoretical analysis and description. Contemporary film theory over the last several decades had quite comprehensively rejected notions of cinematic reliability and objectivity. Now, though, a golden era is recalled, when the cinema's images possessed at least some vestige of reality, some depth and substance, in stark contrast to the wholly insubstantial and spectral digital image. It was an era when, as Lev Manovich insists, in the epigraph above, the cinema was "the key method to represent the world," composed of what he describes elsewhere as "deposits of reality" (*Language* 294). These are what seem now to have been expelled from the cinematic image, as the traditional modes of production are replaced by the techniques of digital simulation and modification.

Such theoretical assumptions, I insist, are preventing digitization from being properly understood. If new digital technologies and techniques are to be placed within the sort of ongoing histories I have alluded to, if they are to be related to a cinematic experience which has been more or less maintained in its basic contours, then we need to find the means of more carefully describing and accounting for that experience. What I am endeavoring to do in this thesis, then, is to place the reception of digitization, the discursive and theoretical responses to the advent of new digital technologies, within a broader theoretical context, to describe it in relation to the sorts of semiological assumptions that have long informed film theory, and which have significantly determined the nature of such responses. I will provide a summary account of the reception of digital technologies within the realm of film production, suggesting that little has occurred that has significantly altered basic aesthetic assumptions, or that have

affected the basic spectatorial experience. I then trace the question of reality, of reference, through semiology and semiological film theory, the basic contours of which are resurrected in the contemporary discourse on digitization, which find the revolutionary quality of the technological transformation in the supposed severing of the link between film and world, in the destruction of cinematic reference. From here I return to a powerful, but neglected, account of the relationship between cinematic representation and reality, in the work of Stanley Cavell, specifically his central work on film, *The World Viewed*.⁴ The philosophical aspects of Cavell's work can be pursued and developed, I argue, through a consideration of the alternative semeiotic tradition of Charles S. Peirce.⁵ What I intend to do, then, in this thesis, is to read the contemporary digital crisis in light of a certain theoretical problematic that has long bedeviled film theory, in light of what Pierre Sorlin, in the title of a recent essay, has called "that most irritating question: image and reality."

⁴ Cavell has not been entirely neglected, although when he is

⁵ Although Peirce never finally decided upon the terms "semeiotic," which he in fact only used a few times, he was concerned with the issues of terminology generally, and was keen that he had a word that was at once efficient, unique and suitable. "Semeiotic," he thought, suited the bill, although he did consider alternatives, and was always attuned to the possibility of misunderstanding. "I have often thought," he wrote, "that if it were not that it would sound too German (and I have an utter contempt for German logic) I would entitle my logic-book (which is now coming on) 'Logic considered as Semeiotic' (or probably *Semeotic* without the *i*;) but everybody would think I was translating *als Semeiotik betrachtet*, which I couldn't stand" (8.377). It has, though, become somewhat customary to use "semeiotic" to distinguish Peirce's theory from structuralist semiology, or semiotics, a distinction which I will maintain here.

Chapter 1: The Problem of the Digital

Looking at the increasing predominance of technology and special effects in providing the primary audience attraction, and considering the resurgence (through television and popular music) of performative and spectacle modes, as against purely narrative modes, classical cinema may yet come to be seen as itself a 'transitional' stage in the overall history of the audio-visual media and the technologies of mechanical recording and reproduction.

Thomas Elsaesser (4)

Birth and Death

As everything becomes possible, *nothing* becomes possible. An excess of spectacle has led to the collapse of the contract between the film and its audience.

Wheeler Winston Dixon
(*Transparency* 44)

The cinema appears to be on its way out. It seems no longer to be living up to its primary aesthetic obligations, offering instead cheap, technological thrills at the expense of more significant and substantial fare. It has, at least in a certain form, apparently outlived its usefulness, and been reduced to a shadow of its former self, bereft of those qualities that had once made it so unique and consequential. Having recently reached the rather grand age of one hundred years, the cinema seems, to many, to have begun a sad and even embarrassing descent into dotage. A 'classical' cinema, as Thomas Elsaesser suggests, may be disappearing. Having performed a specific historical function, it appears to be on the verge of being replaced, no longer capable of fulfilling its function, no longer capable of performing a positive cultural or aesthetic role. It seems to have been reduced to a desperate state, merely reasserting its now superannuated capacity to produce meaningful and captivating imagery, relying, more and more, on mere tricks and effects

to do so. The “contract” between film and viewer has been collapsed. The cinema’s original force, vitality and significance seem to have waned, perhaps permanently.

The signs are everywhere. Piers Handling, the director of the Toronto Film Festival, in the pages of the *Globe and Mail*, characterizes the cinema of 2001 as “[a]n endless round of youth films, romances, war films, sequels and remakes. [...] Films open, hit the Top Ten charts, and are gone in a couple of weeks. Fast-food movies for a fast-food culture” (R1). The roots of the present situation can be found, he argues, in the spectacular aesthetics of Stanley Kubrick’s *2001: A Space Odyssey*, a film which “gave meaning to the word ‘special effects,’” and in which Kubrick “created a world about technology that relied on technology,” in a manner that “looked forward to what the movies have become in 2001” (R1). The film, argues Handling, was both prophetic and influential, prefiguring the fantastic but insubstantial imagery that characterizes the cinema today. “Nowadays,” he insists, “the kind of special effects that Kubrick employed are commonplace. The miracle of digitization brings us everything from dinosaurs roaming the Earth to Japanese Zeros bombing Pearl Harbor, while THX sound systems deliver soundtracks of Wagnerian proportions” (R1).

Similar jeremiads fill the cultural and arts pages of newspapers, most of which place the blame squarely on technology, arguing that in its drive to produce more and more compelling and exciting imagery, the cinema (especially the Hollywood cinema) has sacrificed plot, narrative, and even meaning itself, for pure spectacle and sensation. The audience is left stupefied, without an opportunity to think, or to reflect. William McDonald, in a feature story in *The New York Times*, assesses the impact of special effects, which, he argues, are “numbing viewers’ imaginations” (1). McDonald quotes

Neal Gabler, author of *Life the Movie: How Entertainment Conquered Reality*, who makes a direct correlation between movie special effects and hallucinogenic drugs. “[T]he analogy I would use,” argues Gabler, “is drug addiction. There’s always a new drug that comes along because the old high isn’t enough anymore. You want to ratchet up the experience somehow, going from marijuana to cocaine to heroin to PCP, saying, This is more intense, this is better. Special effects work the same way” (McDonald 1). Pursuing the moral imperative implicit in Gabler’s argument, McDonald offers another analogy. “It may not be a stretch,” he says, “to say that the movies that peddle the digital pyrotechnics engage in a kind of technological pornography. That is, not only do effects leave little to the imagination; they also never really satisfy, even though people may keep going back for more” (1).

Fast-food, drugs, pornography – the comparisons are damning, and seem to rely on an equation between spectacular, unreliable, or illusionary imagery and a loss of agency and any capacity for discrimination on the part of viewers. They suggest, moreover, that cinematic illusion, and the wide scale use of special effects, is a relatively recent phenomenon – or at least that their use has recently become more ubiquitous and indiscriminate – and that there was an earlier, golden era when the cinema simultaneously left more to the viewers’ imaginations and relied more on the camera’s capacity to record simple reality. But the role of special effects in the cinema has remained essentially unchanged over the course of its history, and their fundamental importance is summed up in an account offered by Danny Lee, veteran Hollywood effects supervisor: “Script writers,” he says, “have no limits on their imagination. What we do is make photographable anything they can come up with. All it takes is mechanical ability, a

knowledge of hydraulics, pneumatics, electronics, engineering, construction, ballistics, explosives and no acquaintance with the word *impossible*” (Qtd. in Brosnan 9).

This seems like a useful definition of the art and craft of filmmaking: to make the world “photographable,” to render possible, through specifically technological means, what would otherwise be impossible to represent, what otherwise does not exist. The cinema, at least according to a man in charge of special effects, is not, and has never been, engaged in the simple reproduction of the real world, in the representation of the possible or the actual. On the contrary, its task is the production of imaginary images of the impossible, and it has been since the first years of the cinema. In one of the very few specific considerations of the history of special effects in the cinema, John Brosnan starts with precisely this point. “The beginning of the story of special effects is to be found at the beginning of the film industry itself. Not long after the first images had been successfully projected onto a screen,” he argues, “trick photography, the creating of illusions through the manipulation of camera and film, was born” (15).

Still, there is a strong tendency to see a general decline in the cinema, as tricks and effects seem to have become paramount, and as the last vestiges of what had distinguished the cinema from the other arts, what seemed to prevent it from slipping into the realm of total illusion, disappear. This tendency is reinforced by the sense that, at the very moment of its birth, in that brief period before the advent of trick photography and special effects, in the gap to which Brosnan himself alludes, prior to the elaboration of the means for manipulation, the cinema seemed to exist in some pure form, free of alteration and distortion. The belief in this halcyon age (or moment) is encouraged by its apparent visibility, by our sense that we can *see* the instant of the cinema’s origin, and the

subsequent history of the cinema is often understood as a struggle between the two basic tendencies that immediately emerged, between filmic fidelity and cinematic illusion. It is, though, the former, understood as the historical precedent, which is seen to possess the greater value, the result, among other things, of its having come first, of having been, that is, the primary and therefore most authentic manifestation of the cinema's nature. This is the result, though, of a certain metaphorical structure that is commonly applied to the cinema and to its history, and one that is still widespread. Of all the arts, the cinema is the only one whose birth can be precisely dated, and having watched it grow up, passing through a period of awkwardness in its teens, achieving a kind of maturity in its twenties and thirties, and a weight and seriousness in its prime, many observers have begun to see the inevitable degradations and humiliations of age in a once young and proud art, as it has begun to lose the battle that it has always fought, the purported battle to maintain the proper balance between reality and illusion.

As a result of being able to see the cinema's entire history, and to chart such trajectories of origin, development, and decline, there is a strong temptation to apply the metaphor of aging, to see in the accumulation of years an eventual exhaustion and possible expiration. "The cinema's 100 years," wrote Susan Sontag, in 1996, in a particularly explicit application of the metaphor, "seem to have the shape of a life cycle: an inevitable birth, the steady accumulation of glories and the onset in the last decade of an ignominious, irreversible decline" (12). Sontag argues, more precisely, that it is a *love* of cinema, a *cinophilia*, that has effectively died, a love that had been inspired by the cinema's unique capacities, a love "born of the conviction that the cinema was an art unlike any other" (12). As its uniqueness faded, however, as it has succumbed to the lure

of complete illusion, so too has the love that it had once inspired. As the cinema has become an art just like any other, as it lost its vitality, and its distinctiveness, it has become less worthy as an object of admiration and love. "Cinema," writes Sontag, "once heralded as the art of the 20th century, seems now, as the century closes numerically, to be a decadent art" (12).

In its descent into decadence, in its coming to rely on the technologies of manipulation over the basic mechanics of recording, the cinema appears, to so many, to have abandoned its primary function, to have denied its own nature, to have, as Sontag insists, become decadent. What is it, though, that the cinema is essentially obligated to do, what is its fundamental function? In an era of dramatic technological change, this question has become an acute one. The main task of those who reflect upon and theorize about the cinema has, in fact, become the description of those elements, specific to film, that seem to have been put in jeopardy by new technologies. The often exaggerated journalistic discourse on the fate of the cinema has a slightly more subdued, but no less urgent, counterpart in the pages of academic film books and journals, and in the meeting halls of scholarly associations and university classrooms. The concerns are widespread and diverse, as represented, for instance, in a recently published introduction to film studies:

At a film studies conference in Chicago in 1996, academic panelists fretted about 'the death of the camera', and 'the end of film'. Academics involved in teaching new technologies routinely speculate about the 'end of narrative', given the various forms of non-linear temporality and interactivity that new digital technologies have made possible. And how is our curriculum supposed to reflect the end of narrative, when we can't even figure out what production technologies to invest in, given that every time you look up, another one is being phased out? (Kipnis 595)

Beyond the quotidian concerns registered here, and the usual sort of exasperation that technological change gives rise to, there is the more basic fear that the cinema itself is in

jeopardy, the fear that we are witnessing the ‘end of film,’ the ‘end of cinema,’ and that the discipline’s very object of study is being transformed so profoundly that it is effectively unrecognizable, even that it may well no longer exist. What had once characterized film, what had once made film “an art like no other,” seems threatened by the advent of new technologies, specifically computer technologies, and the cinema appears to be in danger of becoming irrelevant, if not expiring altogether. In the face of such claims, it seems legitimate to assess that danger, to consider the threats that many see arrayed against the cinema, and to judge those threats, in order to determine if the cinema has indeed reached the end of its life cycle, if it has in fact become exhausted, emptied of the very things that had given it its life and its identity. Is the moving image in crisis, as so many suggest? Is the cinema on the verge of becoming indistinguishable from its rival arts, or of disappearing altogether? Is it the “death of cinema,” as Paolo Cherchi Usai insists, positing a fundamental difference between the images “imprinted on motion picture film” and “fleeting” electronic images? (7). Have we reached, as Anne Friedberg claims, “the end of cinema”? “The cinema screen,” she argues, “has been replaced by its digital other, the computer screen” (439). The new situation is, Friedberg seems to be insisting, a zero-sum game, whereby the gains made by computer technology seem necessarily to come at the expense of the older technology of the cinema, striking at its very core, its identity or specificity. “The movie screen, the television screen, and the computer screen,” she argues, “retain their separate locations, yet the types of images you see on each of them are losing their medium-based specificity” (439). There seems, moreover, to be a certain historical inevitability to all this, as Friedberg, like Sontag, finds significance in a certain numerical coincidence, arguing that, “[a]s this millennium draws

to an end, the cinema – a popular form of entertainment for almost a century – has been dramatically transformed. It has,” she argues, “become embedded in – or perhaps lost in – the new technologies that surround it” (439).

The cinema, though, has never been the sort of pure medium that such an analysis suggests, and its history has been one of almost constant technological challenge and adaptation. Reflecting and incorporating into itself all manner of social, cultural, and technological change, the cinema is a profoundly hybrid phenomenon. It has been capable of addressing, and has typically profited from, the challenges of rival technologies. Such challenges are often made the subject, implicitly or explicitly, of specific films, according to a long cinematic tradition of subduing its opposition through representation.⁶ More significantly, though, the cinema has exploited the many other media – those that have also emerged over the last hundred years or so, as well as pre-existing, traditional media – all of which have been pressed into service by the cinema, expanding the possibilities for production and exhibition, but also for marketing, advertising, public relations, distribution, exhibition, and so on. The cinema has always been much more than the specific apparatus for the recording and theatrical projection of moving images. It is a large and complex technological, social and cultural phenomenon, which has always existed within and across an elaborate media network. It encompasses a wide range of aesthetic, psychological, economic, sociological and technological aspects. The cinema consists of what Gilbert Cohen-Séat, in his attempt to elaborate a

⁶ The process of digitization has provided thematic and narrative material for a huge spate of recent films, spawning a whole new genre of what David Rodowick has called “digital paranoia” films. Films such as *Lawnmower Man*, *The Matrix*, *The Thirteenth Floor*, and many others, have successfully exploited the fears and fascination of audiences with new image technologies, and, while they tend to emphasize their more sinister aspects, they also utilize and exploit the very same technologies. These films also continue a long-standing tradition, whereby apparently rival and competing technologies are incorporated into cinematic representations.

methodology for the analysis of the cinema in all its heterogeneity, in his efforts to produce a “filmology,” called the “filmic fact” and the “cinematic fact,” a complex and multi-faceted phenomenon that would require a wide-ranging and similarly complex research program, bringing together a variety of disciplines and methodologies.⁷

While a diverse and multi-faceted filmology, as Cohen-Séat imagined it, never really developed, historically film theory has always been characterized by a multiplicity of approaches, outlooks, presumptions and attitudes, which attests to the heterogeneity of the cinematic phenomenon. The complexity of the cinema was almost immediately apparent, and very quickly invited theoretical speculation, as Dudley Andrew has noted in *The Major Film Theories*. “Since ours has proved to be a century of criticism,” he writes, “it is not surprising that theories of cinema were being propounded before the cinematographic process was even twenty years old. [...] Never before,” he notes, “has an art been dogged so quickly by intellectuals trying to understand it, trying to set it properly on its way” (11). The diversity of early film theory is manifested in the list of figures that Andrew considers: Hugo Münsterberg, Rudolf Arnheim, Sergei Eisenstein, Béla Balázs, and Siegfried Kracauer, who came from a wildly diverse set of backgrounds and brought a wealth of philosophical, sociological, aesthetic and practical knowledge to bear on the new medium. Their preliminary efforts were built upon and taken in sometimes radically new directions by, for instance, André Bazin, informed by a combination of Catholic humanism and phenomenology; by Jean Mitry, who brought the latest thinking in psychology to bear on the question of the cinema; by Amédée Ayfre, and Henri Agel, who were indebted to the development in existential phenomenology of

⁷ For a significant, and unique, account, in English, of the efforts of Cohen-Séat and others to found a filmology, see Lowry. See also Casetti (90-5).

Martin Heidegger, Maurice Merleau-Ponty, and the phenomenological aesthetics of Mikel Dufrenne; and by Christian Metz, who built the foundation for a cine-semiotics. Many more names could be added, and film theory, on the basis of such auspicious and fruitful beginnings, developed, in the latter half of the twentieth century, into a complex and wide-ranging enterprise, characterized by what Francesco Casetti has described, in his history of film theory since 1945, as a “plurality of procedures” and a “multiplicity of paradigms” (10).

At the end of his history, suggesting future directions for film theory, Casetti encourages us to keep such plurality and multiplicity in mind, insisting that they derive from the very facts of the cinematic phenomenon itself, the complexity of which has necessitated a theoretical diversity. “Theory,” writes Casetti, “has emerged as the device by means of which one tries to understand cinema, to define it, to analyze it, to reconsider it” (314). The cinematic phenomenon itself, though, resists easy answers, and requires that theorists seek inspiration and direction from a variety of sources, leading them in a variety of other directions and into new areas and domains. As Casetti notes, “the questions asked of cinema often transcend the phenomenon they wish to discuss” (315). This is the result of the cinema’s very constitution. “It is cinema itself,” he explains, “that invites this practice – from the moment at which it denies its separate identity and defines itself as a crossroads of diverse experience” (315-16). Casetti offers a brief account of such diversity, which, even in its brevity, begins to suggest the actual complexity of the phenomenon called cinema:

For a long time cinema has not been identified with one kind of film: it is a fictional full-length movie, but also an experimental work, an amateur’s 8-mm production, an ethnographic documentary, a teaching tool, an author’s test-run. Now cinema is not even identified exclusively with movies: it is a product of and for television, a news video; it integrates theatrical works; and it is, moreover, a model of literary writing, a depiction of

customs, a document for historians, a revealer of cultural tendencies, the material for literary articles, the object of parody, material for study. Furthermore, it is a museum piece, a video collection, cultural property, the object [*pace* Sontag] of a cinemaphile's passion. This is nothing new, though it is particularly notable today. (316)

It is all of this, and more, that defines the cinema for Casetti, and to which theory needs to be sensitive if it is to offer any viable definitions or analyses. "Cinema no longer has its own place," insists Casetti, "if it ever did have one" (316). The cinema has always been a peculiar nexus, the point of connection for a variety of technologies, cultural discourses, aesthetic tendencies, social forces, political energies as well as a site for the realization of hopes, desires, for the relief of frustrations, for the representation of dreams and aspirations, fears and horrors. Such thematic diversity is registered in a material diversity as well, which Casetti also notes. The cinema crosses the spectrum of media:

The works it has given us survive as memory in glossy books, as publicity quotes, as models for television serials. Experiences that cinema made known return in the form of exotic mass-vacations, in video clips, in the special effects of business conventions. The language that cinema developed serves as a model for the layout of illustrated magazines, for the organization of party games, for journalistic reports. Further, cinema in turn follows publicity, magazines, games, television. It no longer has its own place because it is everywhere, or at least everywhere where we are dealing with aesthetics and communication. (316)

Despite such material and conceptual diversity, though, the cinema is increasingly understood in its singularity and specificity, as a manifestation of its particular mechanical and photochemical constitution, which seems threatened by recent technological developments. The most important thing about film appears to be just that specific aspect which digitization seems suddenly to have been put in jeopardy. Contemporary accounts of the digital transformation of the cinema are explicitly cast in terms of its threat to a cinematic *specificity*. The cinema, it is widely claimed, derives its identity from its essentially photographic character, from its status as a recording mechanism, from the fundamental processes of registration and inscription underlying

cinematic representation. This is, though, a rather surprising claim in the context of the history of film theory, which had long ago effectively eschewed medium specificity arguments. Writing in the early 1980s, Noël Carroll already described such an approach as effectively outdated. While there had been a long tradition in film theory of considering the material constitution of the cinema, its photographic essence, as the basis upon which subsequent theorizing would follow, by the time Carroll was writing, such an approach had become distinctly unfashionable. “Though essentialist accounts of film and photography continued throughout the seventies,” he writes, “the popularity of medium specificity arguments in these fields has been often superseded by politicized, semiotic accounts of a generally antiessentialist bent” (“Medium Specificity” 6). Carroll’s critique of medium specificity arguments was, then, a mainly historical exercise, although he does cite two attempts at the time to resurrect such arguments (Crawford; Sankowski), and points to the maintenance of specificity arguments in the study of video and video art (Gilette). His critique was intended, though, to finally put to an end – or to *announce* the end – of what was already an effectively outmoded and obsolete approach to the question of the nature and value of art, and of film and media art in particular.

The end of the specificity argument, insists Carroll, was to be celebrated, given its weaknesses and limitations. Such an approach had functioned to obscure the actual character of the cinematic phenomenon, its heterogeneity and complexity, which was reduced instead to a singularity. “Medium specificity theorists,” observes Carroll, “often write as if the various media they investigate had only one component, or, at least, only one basic component worth considering for aesthetic purposes” (12). This approach, though, tended to overlook the very many and often very different components that any

medium possesses. Perhaps more importantly, the identification of any single component as primary or as *essential* does not reveal anything significant. Carroll insists that “even if media have essences, which is itself a controversial issue, it is far from clear that an ostensible essence of a medium has any directive force regarding how the medium is used, let alone how it should be used” (12). Carroll describes the usual direction of medium specificity arguments, which begin with an observation about a particular physical or material component, and move thence to evaluative aesthetic claims, the weaknesses of which Carroll reveals, summarizing the typical arguments:

The facility for special effects entails a commitment to image processing in video; the facility for juxtaposition signals the centrality of editing for film; the causal relation between image and referent suggests an objective style for photography. Yet [...] we can just as easily adduce several competing and even incompatible programs for each of these arts, and each of these will be connected to some possibility of the medium, i.e., each will, at the very least, be logically and physically possible within the medium. What this indicates is that the nature of the medium does not have any determinate directive force concerning the way in which the medium is to be developed. (13)

Instead, Carroll advocates an account of arts and media, and of the cinema, that would stress complexity, noting that each medium is “complex in its constituents, its effects, the properties of its constituents, and in the ways styles are related to these properties and potential effects” (13). Which of these will be foregrounded and utilized is always an historical, social and cultural question, elaborated and answered within specific contexts of *use*. “It is,” insists Carroll, “the use we find for the medium that determines what aspect of the medium deserves our attention. The medium is open to our purposes; the medium does not use us for its own agenda” (13).

Carroll’s was effectively the last word on the issue, and was part of his larger effort to reveal the problematic assumptions of much traditional thinking on questions of the cinema, which he presented in his 1988 book, *Philosophical Problems of Classical*

Film Theory, which concludes with “The Question of Essentialism,” where he reiterates his claim that the significance of the cinema lies in the uses to which it is put, rather than in any particular element of its constitution. “Film art, film representation, and film criticism,” he argues, “develop under the aegis of pre-existing cultural enterprises: art, representation, fiction, and aesthetic criticism. The film world develops, at first and often thenceforth, through a process of emulating these pre-existing practices” (262). Carroll anticipates an essentialist’s response to this, who would note, presumably, “that film emulates these preexisting practices on *its own terms*. But what is difficult to establish here,” noting the degree to which such an attitude begs the question, “is exactly what we are to identify as *film’s terms* since film’s potential only emerges by using cinema to achieve preexisting aims” (262).

While film theory has not specifically pursued an analysis of use as advocated by Carroll,⁸ it has certainly subordinated questions of materiality and medium specificity, if not outright discarding them. Film theorists have elaborated instead a fundamentally anti-essentialist approach, rejecting any accounts that privilege or valorize the material specificity of the cinematic medium, attending instead to the *experience* of film viewing, against any emphasis on the materiality of the medium. A variety of approaches have been developed, from semiotics to psychoanalysis, to describe the viewing experience. The cinematic apparatus, rather than a collection of physical, mechanical and photochemical components, has been reconceived as “mental machinery” (Metz,

⁸ Carroll’s complaint about recent, contemporary film theory is that it is monolithic and dogmatic, and that in its insistence upon a few basic and unalterable theoretical principles it continues to overlook the very many aspects of the complex and multi-faceted cinematic phenomenon. While one may disagree with the alternative models that he offers, specifically that of cognitive psychology, and the often inflammatory character of his anti-Theory rhetoric, his plea for a greater theoretical multiplicity is worth heeding. See Carroll, “Prospects for Film Theory: A Personal Assessment.”

“Imaginary Signifier” (18). The integral components of the cinema are found in an experiential *process* rather than the actual physical components, which are relegated to a subordinate position, as having produced the imagery that is to be experienced, with the subsequent experience becoming the primary object of theoretical investigation. “Cinematographic specificity,” insists Jean-Louis Baudry, “refers to a *work*, that is, to a process of transformation” (533). While significant, the physical aspects of the apparatus are only the basis upon which this more significant process takes place. “The cinema,” he argues, “can thus appear as a sort of psychic apparatus of substitution [...]” (540).

Accounts of cinematic experience, while varied, all emphasize the basic *textuality* of the cinema, as a phenomenon of experience rather than a specific physical apparatus. Without the underlying machinery there would, of course, be no images at all for the viewer to experience, but the manner of production and presentation are considerably less important, and less worthy of direct theoretical consideration, than the act and consequences of viewing. “The physical presence of a film,” writes Robert Kolker, “constitute one aspect of film’s textuality: the five or six reels of 35mm plastic ribbon containing photographic images that are projected onto the screen in the theatre [...]” (12). Summing up the attitude of film studies and film theory, though, he insists that such material specificity is the least significant aspect of the cinema, insisting that, “[u]ltimately, the physicality of film, even the forms of its projection, are less important than the effect it has when we view it” (12). While the various modes and forms of cinematic production and presentation can be evaluated and compared, noting differences in scope and quality between, for instance, standard theatrical conditions and widescreen cinemas, between monophonic and stereophonic sound, and now between analog and

digital image and sound systems, as well as between theatrical and non-theatrical presentation, between the large format presentation in the public space of the movie theatre and the smaller, more intimate domestic conditions of video viewing, it is difficult if not impossible in such a heterogeneous context to determine what is the true or proper form or mode. “Physical textuality,” insists Kolker, “like so much else in the creation and reception of film, is subject to external forces that make it difficult for us to define it as some essential, unchanging thing” (12). In the face of such difficulty, if not impossibility, and in the face of the relatively “neutral” character of the cinematic machinery, so to speak, the task of film theory becomes, instead, to account for and describe the more dynamic and significant experiential act of viewing, which transcends the physical conditions of production and exhibition. “Watching a film,” insists Kolker, “is more than any of its physical parts: it is an event that occurs when the physical thing becomes activated by human perception through *some kind of projection or broadcast*” (12; emphasis added). Regardless, effectively, of the *means* of providing the imagery, the important fact is that there is some imagery available to be “activated” by spectatorial activity.

The particular constitution of that “physical thing,” the actual cinematic machinery, has been exhaustively shown by contemporary film theory to function in a fundamentally social, cultural, political –and perhaps even primarily *ideological* – manner. The cinema has been shown to have been elaborated to produce the *effect* of neutral, objective representation, which is the result not of its technical, scientific, mechanical and photochemical aspects – its physical constitution – but rather of the set of assumptions and expectations that constitute the spectatorial position. Jean-Louis Comolli

influentially argued against a reduction of the cinematic phenomenon to the terms of the *camera*, to the specific, physical components of image production, warning against the “danger implicit in making the cinema as a whole function on the *reduced model* of the camera” (47; emphasis in original), insisting instead on a more expansive, effectively contextual analysis of spectatorial assumptions, which is, for Comolli, a primarily ideological question. “A materialist theory of cinema,” he argues, “must bring out the ideological ‘heritage’ of the camera (and its ‘scientific heritage,’ the two being not at all mutually exclusive [...]); at the same time it must bring out the ideological investments which have been made in the camera. For neither in the production of film,” he insists, “nor in the history of the invention of the cinema is the camera alone at issue. If the way that it involves technique, science, and/or ideology is in fact determining, it is only so in relation to other determining factors” (47).

The upshot of such theoretical efforts, of the general resistance to a privileging of the physical, material apparatus or machinery of the cinema, in favor of a broader contextualization, whether aesthetic, cultural or ideological, and rejection of a simple, or simplistic, reduction of the cinematic phenomenon to mechanical or technical terms, has been a debunking of any claims of an inherent realism or essential reliability behind cinematic imagery. The particular photographic character of cinematic production, the mechanics of photographic reproduction, have been rejected as guarantors of reliability or objectivity, and the project of a semiotically-inflected, critical and ideological theory of cinema, is explicitly contrasted with an outmoded approach that suggested any essential ‘objectivity’ in the cinematic apparatus (Stam, Burgoyne & Flitterman-Lewis 185-6). Film theory has been explicitly and deliberately elaborated as an analysis and

investigation of processes – textual, spectatorial, ideological, aesthetic, etc. – *against* any approach that would privilege the mechanical and physical constitution of the means of cinematic production and reproduction, the nature, constitution and historical variability of which has been shown to be less important than the various determining contexts within which the cinema's *imagery* is received and experienced.

The *fact*, though, of the cinema's physical constitution, appears to have been taken for granted all the while. While the mechanical and photochemical character of the apparatus has been subordinated as a theoretical issue, it has long been assumed to be an integral and infrangible aspect of the cinema, which had, moreover, remained effectively unchanged throughout its history. This, though, seems suddenly to have changed, and there has, just as suddenly, been a renewed focus on the significance of the cinema's physical constitution, and on the consequences of its apparent transformation or even destruction. Recent technological changes, the digitization of the cinema, have returned the theoretical emphasis to just those elements of the cinema that had been so carefully and thoroughly excluded from consideration, effectively resurrecting medium specificity arguments. Placed in the context of an anti-essentialist film theory, which has been elaborated over the last several decades, it is somewhat surprising, even confusing, to come across descriptions of what many see as the most significant consequences of digitization, the loss of those elements that are now understood *to have defined the cinema*, to have provided it with its identity – the basic physical components of the medium, the specific physical constitution of the apparatus.

The digital transformation of the cinema, as David Rodowick has noted, is being experienced as the destruction of what are now conceived as the most basic, fundamental

and *defining* components of the cinematic apparatus. “The celluloid strip, with its reassuring physical passage of visible images; the noisy and cumbersome cranking of the mechanical film projector and of the Steenbeck editing table; and the imposing bulk of the film canister are all disappearing one by one into a virtual space, along with the images they so beautifully recorded and presented” (“Dr. Strange Media” 1398-99). The potential consequences strike Rodowick as potentially quite dire. With the destruction of these apparently constitutive components the cinema’s very existence seems to be in jeopardy. Nothing seems to remain after the process of digital substitution, leaving only a troubling methodological question. “What is left, then, of cinema as it is replaced, part by part, by digitization? [...] I find myself confronting a new disturbing question: Is this the end of film, and therefore the end of cinema studies?” (1399).

The End of the Cinema

Is it the end of film, the end of the cinema, and thus the end of cinema studies? Does the advent of a “digital” cinema effectively mean the end of film history, or at least the end of the history of what we have come to know as film, characterized and embodied by the sort of unique, mechanical aspects that Rodowick describes above? Does the progressive disappearance of such specific, material aspects of the cinematic apparatus spell the end of the cinema itself? Such claims have certainly become ubiquitous, and the discipline of film studies has become deeply preoccupied with the threat that new digital technologies seem to pose to the cinema, as many film scholars and film theorists feel obliged to announce the end or the death of the cinema, which is seen to derive from the transformation to its physical constitution. These are among the most familiar and

rhetorically powerful tropes in contemporary academic film writing, at once unavoidable and virtually unassailable. A radical transformation appears to be underway, and the potential consequences seem dire, even cataclysmic. As Laura Kipnis has noted, “the language of crisis, loss and uncertainty is endemic to anything connected to film these days,” suggesting that “it might be that digital technology will transform all things, including film, beyond recognition and that what we are hearing now are merely small rumblings compared to the thunder of stampeding elephants coming over the horizon” (596). Similarly dramatic pronouncements can be readily found, which suggest the epochal and transformative character of digital technologies, and the consequent dangers that seem to be just over the horizon. Roger Wyatt begins his account of digital cinema with the observation that, “[p]lanetary society is experiencing fundamental change at rates unprecedented in human history” (365). An integral aspect of that change, he insists, is the “visualization of information” and the transformation of the visual into units of information, a process vividly revealed in the digital cinema, which seems to exceed our capacity for description. “The current situation,” he insists, “is one where the potential for digital moving image practice is in advance of conventional cinematic theory” (377). Traditionally constituted film theory, he argues, is incapable of accounting for this strange, new phenomenon, it is “losing its abilities to describe cinema, let alone predict what good cinema will look like. It is time,” he declares, “for a new aesthetic” (378). The consequences of this transformation, of the emergence of a new medium, a new form, are generally considered to be profound and unsettling. “We are,” argues Chris Webster, in his account of the digitization of cinema, “in the midst of a storm, a technological

maelstrom. We have the ability to weather the storm and use its power for the good of humankind or we can allow it to engulf us” (62).

That we have reached the end is increasingly taken for granted, and the task seems no longer to argue the point, but rather to present it as an event that has already occurred, as a history to be already recounted. Jon Lewis’ recent anthology of essays on the American cinema of the 1990s, for instance, presents that decade as a kind of finalé, announcing *The End of Cinema As We Know It*. The collection concludes with an essay/list by Wheeler Winston Dixon, the film scholar and filmmaker, baldly declaring in his title that these are the “Twenty-Five Reasons Why It’s All Over.” Of course it is not nearly as simple as that, as becomes clear in the course of Dixon’s argument. Dixon actually offers only twenty-four reasons, while in his twenty-fifth paragraph he suggests a basic continuity in film history. Among the reasons he cites for the end of cinema are the fact that, “all films are calculated to appeal to a teenage audience,” and that “only effective and widespread dissemination of a film can guarantee any sort of social, artistic, or financial impact” (363-4). The comprehensive commodification of the cinema, and the end of a traditional “film culture,” that Dixon describes is understood, significantly, to have culminated with the end of “film,” the end of the cinema’s physical substratum, with the digitization and dematerialization of the medium, the process of which is motivated and abetted by fundamentally commercial as opposed to any aesthetic criteria.

In the twenty-fifth and final paragraph, though, Dixon announces that “despite all this, the cinema will live forever,” arguing that “no matter how the cinematic medium transforms itself [...] it will always continue to build on, and carry forward the past” (365). This apparent optimism is belied, however, by the disproportionate character of his

list, and by the more preponderant tone of the essay, and of the anthology itself, which insists that *something* has indeed come to an end. What have disappeared are, in Dixon's words, "movies as we know them" (365), and he has elsewhere warned, as we have seen in the epigraph above, of the "excess of spectacle" that has resulted in the destruction of "the contract between the film and its audience." What we once thought of as film, the status of which was underwritten and guaranteed by physical *film*, has changed, perhaps radically so. We are now confronted by something very different from what we have known. The phenomena that have come to replace the cinema as we had come to understand it, to replace what had become so reassuringly familiar, are effectively *unknown*, radically novel, perhaps not even eligible for the name "movies."

They may well continue to bear the name, may still be called "movies," but they are different, for some even fundamentally so. Dixon has written elsewhere about what he sees as the transformative character of digitization, its radically disruptive effects. It is an argument that has become widespread, though, as an era when movies were movies is wistfully and nostalgically recalled, a time when one could distinguish between the objects that properly belonged to the cinema, and to the domain of cinema studies, and those that did not. Vivian Sobchack, for instance, has explicitly acknowledged her feelings of nostalgia and regret when confronted by such confounding phenomena as QuickTime "movies," whose very "nomination" as movies are what she intends "to interrogate here and thus keep under quotation" ("Nostalgia" 1). That such attenuated versions, such cinematic simulacra, may even bear the name of "movie" is the first and most fundamental issue to which Sobchack will attend, insisting that they should maintain their deficiencies – their "gaps, gasps, starts and repetitions," the limitations

determined by computer memory size, processing power and bandwidth – in order to be distinguishable from what she calls “real movies,” despite what she acknowledges are the potential rhetorical perils of such a call:

At the risk, then, of sounding retrograde and nostalgic, I don't want QuickTime “movies” to get any quicker. I also don't want to watch them get any bigger. Furthermore, given the value and pleasure I find in their fragmented temporality and intensely condensed space, I don't want them to achieve the “streaming” momentum of “real-time” and “live-action” – measured, although it need not be, against the standard and semblance of cinema. Indeed, precisely because QuickTime's miniature spatial forms and temporal lacunae struggle against (as they struggle to become) cinema, they poetically dramatize and philosophically interrogate the nature of memory and temporality, the values of scale, and what we mean by animation. In sum, I don't want them to become “real movies” at all. (2)

Sobchack's critique (and simultaneous celebration of the attenuation) of the QuickTime format is couched in aesthetic and art-historical terms – she compares them to Joseph Cornell's box constructions, and to the tradition of the *Wunderkammer* – but she is primarily concerned to establish the difference between, and therefore avoid the confusion between, simulacral QuickTime “movies” and “real movies,” authentic cinematic art. Especially significant in this regard is the fact that, in QuickTime's “struggle to become cinema,” there is a necessary effacement of such differences. According to Sobchack, the aspirations of the QuickTime “movie,” aspirations which seem to acknowledge its present subordination to “the primacy of cinema,” are nevertheless initiating the cinema's “transformation into ‘something else’ by another medium” (2) – the digital medium generally – the eventual result of which would seem to be the *cinema's* ultimate subordination, if not its outright disappearance. As evidence, Sobchack quotes from “QuickTime Concepts,” developer documentation for QuickTime 3, which insists that while QuickTime imagery consists of discrete bits of information, as opposed to the “continuous stream of data” that characterizes the storage and presentation

of imagery on more traditional media such as film and video, this technical distinction need not prevent the elaboration of what may be called “movies.” Offering a McLuhanesque paraphrase, the programmers insist that “[t]he movie is not the medium; it is the organizing principle” (2).⁹ For the programmers of the software the specific medium of presentation is literally *immaterial*. For Sobchack it is fundamental, and the use of a cinematic idiom, the “struggle” to become cinema, obscures what the cinema *is*. “Thus, for all that the cultural interface of cinema allows, it also causes a certain ‘blindness’ to both the phenomenological and material differences between QuickTime ‘movies’ and cinematic movies” (3).

This “material difference” is what is disappearing as the cinema is transformed into “something else.” The contours of Sobchack’s argument about QuickTime conform to the larger arguments being made about the digital cinema in general, as we shall see. Both Dixon and Sobchack betray a desire for the cinema to persist in the form with which they have become familiar, yet both insist nevertheless that the cinema is being transformed, and that this transformation implies a loss of difference, a loss of specificity. The essentially technological transformation of the cinema, a transformation in cinematic materiality, in the literal material of cinematic production and representation, is seen to produce more profound aesthetic and even phenomenological transformations. The cinema is understood to have been in the throes of a so-called revolution for at least the last fifteen years, as digital technologies have transformed almost every aspect of the filmmaking process, changing what had once been experienced as an effectively material and tangible medium, the comforting nature of which Rodowick points to in his

⁹ See Apple Computers, *QuickTime Concepts*.

description, into an increasingly virtual, disembodied, immaterial phenomenon, lacking the familiar substance that had once been so consoling, so reassuring, as he is at some pains to insist. So many of the familiar characteristics and features of the medium seem to have disappeared, and to have done so so dramatically and abruptly, that there seems to be little left about the cinema that offers any sort of reassurance. Even the more putatively optimistic aspects of Dixon's and Sobchack's arguments are overshadowed by their explicit nostalgia, melancholy and regret, given what they see as such significant and dramatic change in recent years, which poses such a direct threat to the cinema's very constitution. Such sentiments are increasingly widespread. A sense of resignation seems to have descended upon film scholars and theorists. Jean-Pierre Geuens has insisted that we must acknowledge and accept the new facts of digital life. Not so long ago," he writes, "many of us were still denying what today is a certainty: the demise of film and its replacement by digital technologies" (16). This process, he argues, has taken us to the edge of an "abyss," insisting that "what is presently going on in the field is already shaking our understanding of what 'film' is" (16). The process, he argues, is occurring at the most fundamental level, involving what he describes as "a redeployment away from the traditional source of the medium – the world of everyday life" (20). With the demise of film, and the demise of cinema, we are offered something else, something new, something unsettlingly revolutionary.

Film histories have already incorporated the change into their narratives, describing an "aesthetic jump – like that taken from silence to sound, from black and white to color, from almost square to very wide screen and stereophonic sound [...] (Ellis and Wexman 440). The cinematic experience is judged to have been deeply altered and

perhaps completely transformed. We are, it is argued, confronted by a “new aesthetic experience,” a “computer aesthetic of interactivity,” which is explicitly contrasted with the traditional cinematic aesthetic of presumably passive reception (Ellis and Wexman 440). In the most recent edition of *A Short History of the Movies*, new digital technologies are understood to have jeopardised what is presented as the most fundamental aspect or element of cinematic representation. The degree of manipulation made available by digital technologies, is understood to have created a “whole new kind of creative geography,” bringing into question “Bazin’s theory that film is an inherently realistic medium, linked in a direct and essential manner to the physical objects whose fingerprints of light it automatically records [...]” (Mast and Kavin 600). David Cook concludes the latest edition of his influential *History of Narrative Film* on a similar note. Cook writes that “film is based on a photochemical process (photography) engineered to mechanically reproduce images of things in motion as that motion occurs in empirical reality before a camera lens” (954), and that these grounds are rapidly disappearing, replaced by digital techniques, which produce a synthetic, simulated reality, rather than reproducing the basic contours of an “empirical reality.” This is, he insists, a revolutionary development, with potentially dire consequences. Once the link between image and reality is completely severed, he argues, we may be confronted by remote and potentially meaningless imagery, warning that “the audio-visual environment of the [twenty-first] century is likely to be as cold an alien as the landscape of the moon in *2001*, or the landscape of the soul in *The Shining*” (957).

A Cinematic Revolution?

Yet such dramatic and emotional accounts seem to belie the actual continuity of the cinematic experience. In many respects, *the cinema does not seem to be in any real jeopardy*. Movies continue to be made; audiences still fill theatres in vast and even expanding numbers. The enormous and complex cinematic system, developed over the course of the last century, continues to operate along more or less familiar lines – while at the same time it is, without question, undergoing technological change and alteration. Yet this has been true of almost every era in the cinema’s history, and the actual pace of recent change might be better understood as evolutionary, rather than revolutionary. The actual extent of change is far less significant, at least in conceptual and aesthetic terms, than typically suggested. The process of digitization itself has been underway for some time, and many of the changes have come about relatively slowly, over a number of years and in several stages, and have been introduced in such a way that the aesthetic consequences have been limited. Still, it is widely claimed that the cinema is undergoing revolutionary and fundamental change. Beyond relatively general statements about the production of virtual realities, though, and the loss of contact with an empirical reality, there have been few explicit considerations of the actual aesthetic changes that digitization has supposedly wrought. Accounts of digitization often consist of vague assertions that the cinema (especially the Hollywood cinema) has become increasingly spectacular and laden with special effects. Yet this has not been substantiated, and it is not clear if there is any greater propensity today towards the spectacular or the illusory than at any time in the past. One of the rare accounts of actual stylistic change in the contemporary cinema is David Bordwell’s essay “Intensified Continuity: Visual Style in

Contemporary American Film.” Writing in 2002, Bordwell confronts increasingly widespread claims that we have entered a “post-classical” era,¹⁰ supposedly characterized by the “high-concept blockbuster, marketed in ever more diverse ways and appearing in many media platforms, creat[ing] a cinema of narrative incoherence and stylistic fragmentation” (16). In contrast, though, Bordwell insists that little has changed in any substantial way, noting that “we are still dealing with a variant of classical filmmaking,” and that “nearly all scenes in nearly all contemporary mass-market movies (and in most ‘independent’ films) are staged, shot and cut according to principles which crystallized in the 1910s and 1920s” (24). What he describes as a merely “intensified” continuity system “constitutes a selection and elaboration of options already on the classical filmmaking menu” (24). While there has been a slight increase in editing tempo, as well as an increased use of a wider range of lenses, and a greater tendency towards tighter framing of dialogue scenes, Bordwell finds little else that has changed in the contemporary American cinema— certainly nothing that could be considered revolutionary. Moreover, the *causes* he suggests for those changes that have occurred significantly do not include digitization as a prime factor. While he is willing to acknowledge “changing production factors,” and he does include the introduction of digital editing systems, these have contributed to what he finds is only a relatively minor increase in editing tempo. In so far as there has been such a (limited) change, the impact and influence of television, music videos and theatrical trailers are as important, if not more important, than digital editing. Bordwell also very interestingly considers the impact of smaller multiplex screens, which proliferated in the 1970s and 1980s, long before digitization, which reduced the impact of

¹⁰ Bordwell cites, for instance, the collection of essays in Neale and Smith. This is also Elsaesser’s suggestion in the epigraph above.

the film image, a reduction that may have been compensated for by an increased editing tempo. Now that screens are again increasing in size we may in fact be seeing a *reduction* in editing tempo.¹¹ Of equal, or even greater significance for what Bordwell insists is merely the “intensification” of the continuity style, is the introduction of new body-braced cameras, such as the Steadicam and the Panaglide, as well as new light and independent boom-cameras such as the SkyCam, which have resulted in more fluid and complex camera movements and increased shot-scale. Also notable is the increased tendency towards multiple-camera filming, which provides considerably more footage, which in turn allows for potentially more cutting during dialogue scenes, for instance.

Bordwell notes the facts of digitization only in passing, incorporating them into a broader and more complex social, cultural, aesthetic and technological context, the combined effects of which are producing some gradual, incremental changes. But the cinema as a whole, or at least the (representative and influential) American cinema, remains effectively the same. John Belton, the historian of cinematic technology, has made a very similar argument. He has recently confronted the notion of a “digital revolution” head-on, discounting what he sees as exaggerated and unfounded claims. Belton asks whether anything has really changed from the point of view of the spectator, for the viewer, and whether there has been any real transformation of the cinematic *experience*. He considers various digital technologies, but considers digital projection, especially, which he insists is routinely cited as the last step in the process of digitization, which, once-completed, will usher in a completely novel era of a fully *digital* cinema. For

¹¹ Bordwell suggests as much, noting that Michael Bay, the director of the action film *The Rock*, had several sequences in the film re-cut to slow the tempo down, after finding that they didn’t “read well on the big screen” (23). Bay decided, as he put it, to “de-cut” the film. See Ansen and Sawhill for more details.

Belton, though, digital projection is in no way revolutionary, since it does not produce “a new experience for the audience,” as truly significant technologies such as sound, color and widescreen processes had. “What is being offered to us,” he argues, “is simply something that is potentially equivalent to the projection of 35mm film” (104). He quotes the vice-president of Qualcomm, a company developing digital delivery and exhibition systems, who says the aim is “to provide the image quality of a first-run 35mm film stock projected on opening night at a premier theatre” (105). As Belton says, “[t]his does not sound like a revolutionary technology. As far as I can see,” he adds, “the only transformation of the motion picture experience for audiences that has taken place in the last forty years or so has been the development of stadium seating!” (105) - and there have been precious few studies of the effects of such revolutionary seating designs.

Focus instead has been on what is described in only vague and general terms as the technological process of digitization, which is understood to be producing direct aesthetic, conceptual and even philosophical consequences, as a result of having struck at what is understood as the essential, specific core of cinematic identity. Against such considered and concrete analyses as Bordwell’s and Belton’s, the general sense is that there has been a profound transformation, and that it has been sudden, radical and potentially, if not actually, destructive, generating considerable unease and apprehension. The changes wrought by digitization seem to have altered the character of the cinema to such a degree that, for many, it is not at all clear that traditional terms and concepts apply any longer, that film theory as it has been elaborated, is capable of addressing the changes. Yet the sense of dramatic transformation and sudden incommensurability may be easily dispensed with, as we have seen, once one begins enumerating the very many

ways in which the cinema has remained the same, and once digital technologies are incorporated into the larger context of stylistic and technical change and elaboration, which has characterized the entire history of the cinema. A far greater consistency in fact characterizes the last several decades, as the cinema has found the means of incorporating new technologies within already existing structures of production and distribution, and within longstanding formal and aesthetic structures. The more remarkable fact, in light of the introduction of computer technologies, is the degree to which they have *not* produced anything like revolutionary changes. Yet the literature on the subject of digitization, and computer imagery and effects generally, is huge, and constantly expanding. Already in 1994, the art historian James Elkins, attempting to assess the claims made specifically for virtual reality, had to confront the “increasingly large literature” on the subject, which, he writes, is “already, I think [...] beyond the grasp of two or three people reading continuously” (“Virtual Reality” 250). And it is not only a matter of volume. As Elkins observes, “an increasing fraction of that literature takes it for granted that virtual reality is in the process of opening radical, fundamental questions about the nature of reality and its simulacra, of subjectivity and individuation, of space and time, of body and mind, of phenomenology and perception and of truth” (250). Elkins, by contrast, insists that “there are no philosophic problems raised by virtual reality,” arguing that such imagery may be easily fitted within already existing accounts of the historical development of Western image-making, and that computer imagery reveals nothing new about representation and reality that has not already been broached by the very many kinds and varieties of images with which we are already familiar (250).

The Problem of Digital Imagery

Why, then, the immense effort and the enormous volume of writing? Why has digital imagery emerged as such a significant and difficult *problem*? Elkins himself has suggested an intriguing answer to the question, posed in the title of his recently published book, *Why Are Our Pictures Puzzles?* Elkins describes the development of the modern attitude towards pictures and images, which seem to have become ever more mysterious, and to consequently demand ever more elaborate and complex accounts and descriptions. Elkins offers a fascinating history of the development of the idea of pictorial complexity, upon which basis, he suggests, the modern discipline of art history has been founded. What has developed is an almost overpowering and confusing sense that we do not know what pictures are, much less what pictures are *of*, and how or whether they relate to our own experiences of the world, of reality. Those who write on art, on pictures, Elkins explains, have moved away from past traditions of elegant description, from the model of *ekphrasis*, and from simple (or, as Elkins says it is now seen, “simpleminded”) praise of illusory techniques, to considerations of the consequences, dangers, paradoxes, confusions, and difficulties that pictures pose.

Elkins offers a number of potential explanations for the increasingly puzzling character of pictures, and the profusion of writing that has resulted. His reasons range from the general increase in knowledge, which has paradoxically made all things more complex, and therefore more puzzling; to the expansion of disciplines concerned with imagery, which has led in turn to new insights and approaches; to changing social and cultural circumstances, within which pictures have come to play many different and often conflicting roles. These, though, he finds too obvious and uninformative. He speculates

further, then, suggesting that writing on pictures seeks to place some historical or psychological order on image production and reception. The explanations he finds most satisfactory, however, are rather more subtle and conceptual, suggesting that, underneath it all, pictures are “meaningless.” Pictures, he says, “seem incomplete, as if they stood in need of reconnection to the world” (257). Lacking words, pictures seem require them to be provided, they seem to seek and solicit explanation. “Art history as a whole,” he suggests, “may be a collection of ways of coping with a feeling of helpless bewilderment – a feeling that grows whenever we take time to attend to the persistent, senseless of images” (255).

Such bewilderment is compounded, Elkins suggests, by the fact that pictures are *made*, they are human constructs, and their apparent meaninglessness disturbingly suggests the meaninglessness that may lurk behind any instance of human expression, so we rush in to fill the void. The pleasure and satisfaction of puzzling over pictures, and of puzzling pictures, is derived from the sense we gain of there being something there to puzzle over, which is the result, though, of a prior sense that some sense *must* be given to images which seem to defy sense. “The outlandish descriptive armaments we have constructed for some pictures both clarify and alter their meaning, but they also – in the last analysis, at the furthest remove from the writers’ intentions – serve to help us come to terms with the fact that in so far as they are pictures, they mean nothing” (255).

We feel, though, that pictures *must* mean something, despite their often looking like things, objects from the natural world, that in themselves do not mean anything. For a picture to be understood as merely a convincing replica of the meaningless objects of reality has become insufficient – hence the end to traditions of praise for lifelike or

illusory representation, replaced by the modern preference for complex, difficult, puzzling pictures, which, in their forcing us to puzzle reassert their status *as* picture. In our puzzling over such images we have written voluminously, and we have elaborated complex systems for distinguishing between meaningful pictures and the meaningless items of the world that pictures often depict. This has become a basic, but somewhat murky distinction, however. “One of the obstacles,” Elkins writes, “in thinking about what pictures are is the absence of analogies outside of human picture-making” (255). We imagine that pictures are wholly conventional, *not natural*, given that there seem to be no images that simply come into being of their own accord – or at least no significant instances, as Elkins describes:

There are some pictures in nature: a caterpillar with large eyespots mimics a snake, which is to say the caterpillar makes part of itself into a picture of a snake. Beyond the biological, there are also “pictures” made by impressions and mineral traces – fossils, natural casts and molds, stains that preserve the shapes of objects. Seventeenth-century collectors were entranced by “picture agates” and *grapholithoi*, stones whose cut surfaces seem to reveal landscape paintings. Cast shadows also trace “pictures,” and they have been enlisted as the origin of image-making in general. Plato’s cave is the first instance in Western writing, and the myth that painting began by tracing cast shadows has been well studied in art history. (255)

Such natural “pictures” have had little significance in art historical discourse, or in discourses on pictures generally. A picture is “made.” It is not something that comes spontaneously into existence, but is, rather, the result of human effort, which is in turn the source of its significance. Among such discourses, film theory, contemporary film theory, as elaborated over the last several decades, has been engaged with the modern pictorial project that Elkins describes, producing structures of explanation and description just as elaborate as, and often directly influenced by, those of art history. It has had, though, to contend with that fact that the images with which it is concerned seemed to originate in something like a natural process, and seemed to reveal or represent, in a manner more

profound and more troubling than pictures or paintings, a potential meaninglessness. Photographically-derived film images are, perhaps before anything else, “cast shadows.” Although Elkins does not mention photographs or cinematic imagery, they have been perhaps the most puzzling of pictures, in so far as they have seemed to possess some natural, independent quality, which distinguishes them from other sorts of images. In the realm of the complex discourse on pictures, photographically-based cinematic images have proved especially puzzling, and demanded either an acknowledgement of or a complete rejection of their “natural” origins. With digitization, the puzzle seems to have been solved, and the dispute settled, as such origins seem to have been destroyed, and the very source of contemporary film theory’s basic task – to place the ostensibly “natural” imagery of the cinema within a more properly conventional context, seems suddenly to have evaporated, producing at once a sense of relief, even triumph, and a bewildering confusion. The sudden change to the cinema’s constitution has been the cause for both celebration, but also for considerable anxiety. For far from clarifying the issue, the cinema’s images seem to have become only more problematic, even more puzzling.

Chapter 2: Digital Cinema

It's only natural for an experienced professional to feel some trepidation towards new technology.

Deborah Harter
(Qtd. in Pizzello, 22)¹²

Change and Continuity

The central emphasis in accounts of digitization has been on the fundamental change that is apparently taking place, seen as the direct result of the steady disappearance of the material foundation of the cinema, the film – that celluloid substratum that had given the cinema both its material *and* conceptual identity. *Films*, those peculiarly immaterial phenomena that we experience in the familiar context of the movie theatre as insubstantial shadows cast upon the screen, have had a material *film* as their foundation, the tangibility and concrete reality of which was understood to somehow ground the otherwise ethereal and intangible images. For those who had become accustomed to thinking about the cinema in terms of such ultimate materiality, the disappearance of the filmic substratum, as Rodowick, Dixon and Sobchack suggest, seems to mean the end of the filmic medium, the end of “cinema.” The apparent loss of this concrete, physical ground for the medium has posed a considerable challenge to those for whom “film” had long been understood in both its material and conceptual senses, for whom the two aspects had in fact been understood as inseparable. Such inseparability had determined the approaches of both those charged with the production of cinematic imagery, as well as those who have had the task of analyzing and explaining

¹² Deborah Harter, vice president, in 1994, of Lightworks digital editing, describing the response of editors to the new technology of digital, non-linear editing systems.

the cinema. Both filmmaking and film theory have proceeded for so long upon an assumption of the cinema's ultimate materiality, that digitization, understood in terms of the destruction or disappearance of that materiality, produced a sense of radical disruption and an acute crisis of confidence. Without the familiar physical characteristics, without the substantive, reassuring materiality and machinery of the cinema, it no longer seemed clear that one might still talk or think about "the cinema." The specific sets of procedures, practices and protocols that have constituted the fields of both filmmaking and film theory had been determined according to the often unspoken, implicit material assumption, which had largely determined accounts of and approaches to the medium. Both filmmakers and theorists, though, have had to contend with the consequences of an apparent "dematerialization" of the cinema, which has meant having to address and contend with the original assumption, which has suddenly been foregrounded and made explicit, and to modify and alter their approaches.

It is instructive, however, to consider the differences between the responses of filmmakers and film theorists, a cursory examination of which will help to begin to answer Rodowick's question, whether the end of *film* spells the end of cinema (and cinema studies), by determining whether the cinema's identity in fact consists of those material aspects which he enumerates, and whether the disappearance of the material substratum of film in fact means the end of the traditional object of cinema studies. For filmmakers, on the whole, the apparent loss of materiality has been accommodated – not without difficulty, it must be said, nor is the accommodation entirely comprehensive, but there is considerable evidence that the fact of digitization has been more or less incorporated into filmmaking thought and practice. For film theorists, on the other hand,

the issue of materiality has become a central problem, which is effectively preventing the accommodation of the digital fact, which continues to be presented in terms of unaccountability and radical disruption. The question of film theory's and film studies' capacity to accommodate and account for digitization has been posed in rather dire terms, putting the discipline's very existence into doubt. But it is fair to ask if the disappearance of film, the celluloid substratum, and its replacement by digital means of image storage and reproduction necessarily marks an "end," as Rodowick and so many others seems to suggest, and to question the grounds upon which such an equivalence between "film" and "cinema" has been established. Is digitization properly understood as a process of "replacement" and "disappearance"? What, precisely, has disappeared from the purview of cinema studies? Has cinema studies' traditional object of consideration really been manifested in "the imposing bulk of the film canister" and the "celluloid strip, with its reassuring physical passage of visible images"? Is there nothing left for the theorist to consider once these physical manifestations have disappeared, replaced by such virtual phenomena as QuickTime "movies" and the many other manifestations of digitization, especially considering how filmmakers actually deal with such new technology? Do such phenomena require a wholly different theoretical approach?

While film theorists have wrestled with such questions, with what are often perceived as the complexities and paradoxes of digitization, the project of filmmaking itself has largely proceeded apace, having discovered that the cinema's identity does not necessarily lie in such particular physical manifestations, but rather in the elaboration of a distinct form of aesthetic and perceptual experience – the "movie" understood not as physical medium, but rather as "organizing principle," the possibility of which persists in

the digital age. Understood more conceptually, as a set of principles for the presentation of moving imagery rather than as a specific physical medium, the cinema's continued existence seems more or less assured. Film theorists, by contrast, are considerably less sanguine about the cinema's future, and about the future of the discipline of cinema studies, having been unable to disengage the cinema's conceptual identity from the material circumstances of its production and presentation. What for filmmakers has been a practical issue of technological adjustment has, for film theorists, become a potentially insuperable paradox. Rodowick has, as we shall see, helpfully suggested the terms according to which cinema studies may in fact be maintained as a viable field of inquiry, and the means by which it may be restored and renewed, even in the face of the apparently radical disruption of digitization. This seems to come, however, at the cost of accepting a basic conundrum. "Reasserting and renewing the province of cinema studies," he insists, "also means defining and redefining what *film* signifies. Hence the apparent paradox of asserting the continuation and renewal of cinema studies in the face of the disappearance of what most self-evidently defines it – celluloid as a means of registering and projecting indexical, analogical images" ("Dr. Strange Media" 1403. Emphasis in original).

Such a "self-evident" answer, though, merely begs the question. What needs to be considered is precisely whether or not "celluloid" in fact "defines" the cinema. This cannot merely be taken for granted. Nor can the equation between, on the one hand, registration and projection and, on the other, indexicality and analogy, be merely posited. While the former pair of terms is associated with specific techniques of image production, the latter are more conceptual qualities of representation that are not limited

to any particular techniques. Such equations are precisely what will be challenged in this thesis. It is specifically claims of the loss of the cinema's so-called *indexicality*, a word and concept that has, through such equations, become the shorthand means to describe the cinema's materiality, that will be questioned. So too the assumption that with the loss of its specific material basis, and the supposedly consequent destruction of its semiotic identity, the cinema's links to the world, to reality – already understood as radically tenuous – has been completely and irreparably severed. The motivated, materially grounded, photographic images of the traditional cinema are understood to have possessed a uniquely direct and literal relation to the world, to reality, about which it could then make specific claims, even if they are only that there *was* a world, that *something* existed, facts substantiated by the world's having left literal impressions of its existence, marks or traces on the surface of the photosensitive celluloid. In the absence of such traces the temptation has been to insist that a breakdown has occurred between cinematic imagery and reality, to insist that the cinema is no longer capable of reference or designation.

Writing at greater length in his recent book *Reading the Figural, or, Philosophy After the New Media*, Rodowick pursues such arguments, delimiting what he sees as the radical difference between the ontologically grounded character of indexical and analogical imagery, and the free-floating, insubstantial (and, presumably, unsubstantiating) nature of virtual, computer-generated or digital images. “Unlike analogical representations,” he argues, “which have as their basis a transformation of substance isomorphic with an originating image, virtual representations derive all their powers from their basis in numerical manipulation” (36). The difference, for Rodowick,

is clearly between the concrete and the abstract, the former understood to mean “real,” the latter conceived as “artificial,” which is further specified in terms of a distinction between substance and non-substance, and between designation and non-designation. Applying the “criterion of substantiality,” Rodowick proposes to clarify the distinction between the analog and digital arts:

Comparing computer-generated images (CGI) with film shows that photography’s principal powers are those of analogy and indexicality. The photograph is a receptive substance literally etched or sculpted by light forming a mold of the object’s reflected image. The image has both spatial and temporal powers that reinforce photography’s designative function with an existential claim. As Roland Barthes explained, photography is ‘an emanation of the referent’ whose *noeme* is *ça-a-été*: this thing was; it had a spatial existence that endured in time. Even film’s imaginary worlds, say the moonscapes of *2001* (1968), are founded by these powers. (36)¹³

This fundamental distinction is erased, Rodowick argues, and the designative function and existential claims of analog arts such as cinema and photography are rendered mute by the leveling force of digitization. As the cinema becomes digital, it loses its “analogical” powers. No longer tethered to the world, it has entered the immaterial, insubstantial realm of simulation. “The digital arts,” Rodowick explains, “render all expressions identical, since they are all ultimately reducible to the same computational basis. The basis of all ‘representation’ is virtuality: mathematic abstractions that render all signs as equivalent regardless of their output medium. Digital media are neither visual, textual, nor musical – they are pure simulation” (37).

For Rodowick, and for many others, such technological changes have had profound consequences for what it means to see, to know, to understand, as the very terms of representation and signification seem to have been radically and fundamentally altered. “Evidently, in the transition from the analog to the digital,” he insists, “visuality

¹³ See Barthes, *Camera Lucida* (80).

is transformed, indeed problematized, not only as expression but also in relation to perception, that is, how body and eye are positioned in space and time according to specific conceptual and technological arrangements” (38). The extent of the transformation is, for Rodowick, comprehensive, requiring a new, more general discipline, “visual studies,” which he insists must, as we shall see, build upon the earlier insights and accomplishments of cinema studies, but which must also be based “on the recognition that the new media demand a deconstruction of the concepts of both visuality and discursivity as well as the philosophic traditions from which they derive. [...] Our era,” he declares, describing the extent of the transformation that demands such deconstruction, such radical reconsideration, “is no longer one of images and signs. It is defined, rather, by simulacra [...] paradoxical series where concepts of model and copy, the Same and the One, the Identical and the Like, are no longer easily reconciled or reduced by principles of unity and the selfsame” (44).

While it cannot be denied that much has changed in the manner and method of representation and communication since the advent of the computer, it is not at all clear that it has meant a wholesale transformation in philosophical and semiotic categories, or that (according to a somewhat imprecise distinction) signs have been replaced by the presumably opposite phenomena of “simulations.” Nor is it clear that such a radical response as the comprehensive deconstruction of philosophic traditions is in fact demanded by essentially technical and technological advances and modifications. It is also important to remember that, as we have seen, the technological transformation upon which such radical claims are based is not even as extensive as often implied. It is especially significant to note that, at this point in the history of the digitization of the

cinema, the vast majority of movies are *still* shot and projected on film, on celluloid. In certain respects, that is, while more developments have still to come, not that much has *actually* changed in terms of the medium of the cinema. The cinema is not yet “digital” in any comprehensive sense. It is, and it will still be for many years to come, a hybrid of digital and filmic techniques.

Still, the sense of comprehensive and radical changes is widely felt, producing claims for larger effects and consequences. That there *are* consequences is undeniable, and in many respects, Rodowick’s work, and the work of others, including Sobchack and Dixon, on the actual effects of computerization and digitization is useful and informative, in so far as they detail the real changes in, for instance, patterns of consumption, spectatorial expectations, ownership and control of intellectual property, the organization of labor, and myriad other issues and concerns. As far as the cinema is concerned, there is indeed much to consider, such as the particular (though by no means comprehensive) changes to narrative structure and the (perhaps temporary) emphasis on the spectacular imagery that digital effects technology has engendered; or the very real transformations that have taken place in the realm of editing, where film *has*, for the most part, effectively disappeared, replaced by digital-editing systems such as Avid and FinalCut Pro; or the impact of the Internet on the marketing and reception of films through, for instance, the ready access to trailers and the proliferation of a variety of other promotional material, made possible by such formats as QuickTime which enable moving imagery to be distributed to and presented on computer screens; or of DVD technology on patterns of viewing, film knowledge and viewer expectations; or the effects of the proliferation of relatively inexpensive digital cameras and non-professional digital editing systems on the

traditional structures of cinematic production, distribution and exhibition.¹⁴ These and many other issues, some less significant, some relatively profound, have indeed to be addressed by cinema studies, which may in fact have to reorient itself in relation to the new facts of digital life, reconsidering certain basic assumptions that have guided its activities for the last several decades, and perhaps even reinventing and renovating itself as a discipline. But this will not require, I argue, the sorts of radical revisions that Rodowick and others are insisting are necessary. The drastic distinction and separation that is being elaborated between the analog and the digital needs especially to be resisted, through a consideration of the degree to which the cinema has *always* functioned according to the simultaneous mobilization of the realistic and the illusory, the *re*-presentation and the simulation. A careful reflection on the cinema's utilization and exploitation of these two registers of signification, which has characterized much of its history both before and after the advent of digitization, makes it less likely that this technical dividing line is seen as a radical break or gulf, but instead as another moment of transition in a long history of technological change and alteration.

It is, again, the fact of continuity, rather than disruption and discontinuity, that may be seen as the more germane and illuminating object of inquiry for a renewed and perhaps even reinvented discipline of cinema studies, as suggested, for instance, in a recent reconsideration and reevaluation of the history of film theory by Nicolas Tredell, who directly points to the persistence of philosophical and aesthetic issues posed by the cinema, in both its pre- and post-digital incarnations. Tredell suggests, moreover, the

¹⁴ Martin Lefebvre and I have considered the specific effects of editing software and DVD technology in a forthcoming co-written article. See Martin Lefebvre and Marc Furstenu, "Digital Editing and Montage: The Vanishing Celluloid and Beyond," *Cinemas*, forthcoming, Fall 2003.

degree to which theories of the cinema can help elucidate the apparently obscure and unfamiliar aspects of digitization. “The importance of understanding the change from analogue to digital culture cannot seriously be doubted,” he insists, “but film theory could contribute considerably towards a definition of digital culture” (235). Tredell suggests that:

cinema may be linked with the newest philosophical question – though one, of course, that has many traditional precedents – of the relationship between analogue and simulacrum. Moving between two and three dimensions, between fiction and fact, between imagination and observation, between memory and desire, between illusion and reality, cinema flickers on the interface of the real and the simulated; in this, it may not only be a prototype of the moving image, but also of the strangeness of digital culture itself. (235)

Having always existed in, and depended upon, these two registers, manifested in the various divisions or dichotomies that Tredell enumerates, the cinema has long been an exemplary site for an investigation of the representation of the real, for a consideration of the relationship between pictures and reality, between signs and the world. That there is, and continues to be, such a relationship, as complex and confounding as it may seem to be, especially in the era of the digital, is a central claim of this thesis. This claim is linked with the imperative that, in light of the potentially confounding effects of digitization, that relationship must be carefully investigated and clarified, in order to understand the continuing value and significance of the cinema, and that of film theory, which has in many of its incarnations taken this as the central problem of cinematic representation and reception. It is, as Tredell insists, and as I intend to argue, the problem that film theory and cinema studies must return to again, perhaps even more urgently now. “In making its contribution to the comprehension of digital culture,” argues Tredell, “film theory should deepen, not discard, its attempt to understand the relationship between film and reality” (235).

One of the primary means by which that attempt may be deepened is by more carefully considering the sorts of distinctions – between, for instance, analog and digital, representation and simulation, sign and simulacrum – that are being deployed in order to validate the claim that a radical gulf exists between a pre-and post-digital cinema. The claim, moreover, that it is according to a *loss* of indexicality that the cinema has become severed from reality, that it has, thereby, had its link to the world cut, must be challenged, by offering a richer and more subtle account of the enduring semiotic function of indexicality, an aspect of signification that, it must be acknowledged, cannot be abolished as a result of merely technological developments. By returning to the primary source for the very concept of indexicality, to, that is, the semiotic of Charles Peirce (whose name is frequently enlisted in the recent discourse on digitization, but whose ideas are actually given rather short shrift), we can begin to grasp the complexity of the concept, as well as its indispensability in any consideration of representation and signification, analog or digital. Against the notion that through the process of digitization the indexical aspect of a sign may be isolated and eradicated (or indeed that digitization and indexicality are in any way opposites), we may consider Peirce’s actual account of the nature of indexicality, as when he maintains, for example, that “it would be difficult if not impossible, to instance an absolutely pure index, or to find any sign absolutely devoid of the indexical quality” (2.306)¹⁵

Peirce, as will become clearer in the more exhaustive consideration of semiotic issues to come, insists that signs and indexicality must be understood in conceptual terms. To be sure, digitization means that fewer and fewer of the cinema’s images may derive

¹⁵ According to standard citation procedure when referring to the multi-volume *Collected Papers*, passages are identified by volume and paragraph number. Hence, 2.306 refers to volume 2, paragraph 306.

from the process of photographic inscription – which undeniably has a unique and *literally* indexical aspect to it – but this does not imply that the digital sign may no longer refer or designate, as Rodowick suggests, or that the cinema’s indexical aspect consisted merely in the techniques of photographic registration and inscription. Approached through a Peircean model, all cinema, both analog and digital, persists as a semiotic phenomenon, consisting of signs, and therefore continues to possess an “indexical quality,” understood less literally as “inscription,” but more conceptually as an integral and necessary component of the semiotic process of signification, of what Peirce calls semiosis. Semiosis, in this sense, means interpretation, the active engagement with the images upon the screen, which the viewer endeavors to understand, to make sense of, to find meaning in. This is accomplished by linking the cinematic image to some object or other, actual or otherwise, by relating the images one sees to other signs, to the various sets of knowledge one possesses. This linking, the establishment of connections, is an integral aspect of semiosis, and is what Peirce means by indexicality. “An *index*,” explains Peirce, “represents an object by virtue of its connection with it” (8.368, n. 23). Moreover, the notion of connection must be construed in the most general sense. “It makes no difference,” he continues, “whether the connection is natural, or artificial, or merely mental” (8.368, n. 23). As examples of the very many forms an index may take, Peirce lists “personal, demonstrative, and relative pronouns, the letters attached to a geometrical figure, and the ordinary letters of algebra” (8.368, n. 23). The form of an index is unimportant. The issue for Peirce, rather, is the function. Indices, he argues, “act to force the intention to the thing intended” (8.368, n. 23). Whether smoke from a fire, a pointing finger, a proper name, linguistic shifters, or deictics, such as ‘here,’ ‘there,’ and

‘that,’ or any other “designator,” in order for semiosis to be possible there needs to be a connection established between sign and object, between representation and represented. “Designations,” writes Peirce, “are absolutely indispensable both to communication and to thought” (8.368, n. 23). Reference, connection, designation – these fundamental aspects of semiosis persist, they *must* persist in any deliberation.

From this conceptual understanding of semiosis, photography as one of the most *literal* instances of indexicality may be on the wane, but that does not put into question the more complex and conceptual indexicality of a digital cinema. Whether confronted by an image of Humphrey Bogart in *Casablanca* or a raging (digitally-simulated) tyrannosaurus rex in *Jurassic Park*, such images encourage the viewer to establish links, connections. They are made meaningful through association, correlation, indication – deliberation – through reference to our knowledge of tough, solitary men, or of giant, extinct reptiles. For the cinema to be meaningful, that is, for it to be capable of generating connections, it has by necessity to possess an indexical quality, linking it to reality, to the world, linking it, that is, to larger realms of information, experience, and knowledge. My claims, then, in this thesis, are at once more modest than Rodowick’s, and others who make similarly radical assertions, and more far-reaching. We need, I insist, to acknowledge and accept that digitization has not abruptly and radically altered familiar philosophical and semiotic categories, forcing us, suddenly, into a realm of indeterminacy and undecidability, into a sphere of simulacra unmoored from reality. This, however, requires one to begin to account, in turn, for the complex and subtle relationship that actually exists between signs and the world, between signification and reality, a task at once immense and necessary. Relatively tentative steps will be taken here towards such a

task, through a consideration of some continuous aspects of cinematic representation, across the digital divide, stressing the affiliations between the putatively opposite modes of analogical and digital representation, and stressing the cinema's subtle and enduring connection to and affiliation with the world, despite the emphasis in the recent discourse of film theory upon virtuality and immateriality. The main question this thesis asks is whether we can begin to account for the inherence of reality in the supposedly virtual images of an increasingly digital cinema.

We may begin, though, by returning to the specific question of the relationship between reality and materiality, but in practical terms, considering the differences between what we can see and touch and feel and what we can know or ascertain, between what we can grasp in our hands and what we can “grasp” in our minds. Rodowick has made the link explicit, considering the loss of a certain *legibility* that digitization has precipitated. “[V]ideo and the synthetic or digital image do seem to mark a break with the genealogy of gravure,” he insists. (*Figural* 42). Without the literal inscription upon a strip of celluloid film, without the cinematic intaglio, or cine-gravure, what is there left to see, what designative proof remains, what is there to proclaim, *ça-a-été*? Some preliminary answers may be found in that realm of the cinema where, as I have already suggested, film has in fact almost completely disappeared, among those for whom the “break with the genealogy of gravure” has been experienced with an unprecedented directness and immediacy. “How many filmmakers,” asks Rodowick, “have lamented the disappearance of the tactile handling of the filmstrip, of the days of stretching out a strip of 35 mm film to the light, judging by eye the space and duration of the cut? What does a strip of videotape reveal to the naked eye? And one cannot even touch encoded information, a

symbolic abstraction locked away in disk arrays” (43). What is there if there is no longer anything to see, no longer anything to touch?

Digital Filmmaking

For the film *viewer* the question is likely a moot one. The cinematic experience is, for the spectator, primarily visual. The tactility of the medium, the filmic substratum and the complex mechanical apparatus necessary for projection are, typically, carefully concealed from the viewers, who are encouraged to limit their sensory field, concentrating upon the images before them, and forgetting the materiality of the apparatus behind. The *knowledge* of that materiality is only ever assumed in the traditional context of film viewing. Whether a film’s images are projected by means of passing light through a celluloid film or by transmitting a digital video signal may well become inconsequential once the difference in quality becomes effectively negligible.¹⁶ Yet while the materiality of cinematic presentation is effectively obscured, the knowledge of that materiality is still assumed, and may well affect how one understands what one sees projected upon the screen. The question is to what *degree* spectatorial understanding is affected by a change in the character of the materiality of cinematic presentation, and as John Belton has suggested, digitization has not significantly altered the spectatorial experience.

¹⁶ Most theatrical projection is still filmic, and even the untrained eye can distinguish between filmic and traditional video projection. But several theatres in the United States have installed prototype high-quality digital video projectors, designed by Texas-Instruments, and have exhibited “digital” films with apparently little or no discernible difference in quality. The main obstacle presently is the cost of refitting the thousands of theatres in North America, not to mention the many thousands more around the world.

By contrast, the loss of a tangible substratum has been acutely felt by filmmakers, and specifically by film editors, who had had the most direct and intimate relationship with the material of the cinema, for whom the cinema clearly had a significant tactility and physicality.¹⁷ Editors had, that is, become accustomed to actually *touching* the material they were assembling. Their thinking about and sense of mastery over the cinema was determined to such a large extent by tactility that the loss of materiality was easily experienced as a loss of control. They felt, that is, that they could no longer hold onto and thereby exert power over the film that they were constructing – “film” understood both literally, as the material *substance* of their craft, and figuratively, as the final product that would be experienced by the viewer in the theatre.¹⁸ Materiality and tangibility were experienced as the grounds upon which aesthetic control could be established, and with the dematerialization of (certain aspects) of the editing process there was an understandably unnerving sense that those grounds had been eliminated.

¹⁷ The exemplary spectatorial status of the film editor, for whom the knowledge of the materiality of the cinema is direct, as opposed to the assumption of materiality which characterizes ordinary film viewing, is explored further in Lefebvre and Furstenuau. We endeavor to blur the distinction, however, by considering VCR and DVD technologies as versions of the sorts of interfaces that editors employ, which have offered ordinary viewers, in domestic settings, with an experience more akin to that of the editor. Controlling the imagery with the machinery of the VCR or the DVD, the viewer is provided with a tactility that is absent from the theatrical context, and which the editor has always had. Our question, though, is the extent to which that has changed with digitization. While there are certain differences between the access to material through a DVD and through a VCR, these are not fundamental, and the DVD has for the most part enlarged upon processes underway since the advent of home video, while adding some new wrinkles. We specifically consider the increased control over the terms of viewing through fast-forward, rewind and freeze capacities, heightened by the random-access capacities of the DVD; ready access to films in the form of rentable, transportable packages, either tapes or disks; and a subsequent expansion of cinematic knowledge among spectators as a result of more ready access to films on tape and now disk. Such processes, though, have been underway since at least the advent of television, which very quickly began broadcasting movies into the more intimate and domestic context of the living room.

¹⁸ It is not an insignificant fact that some of the most important early theories of the cinema were derived from concrete experiments with *film*, with the most tangible material aspect of the cinema, and that some of the earliest thinking on the cinema was in the physical terms of montage, of construction, of linkage. Eisenstein and the early Soviet film theorists, especially, are famously understood to have developed their theories about, their thinking about, the cinema through close and careful analysis of strips of film. Such a literal “materialism” has significantly inflected subsequent thinking on cinema.

The inevitable anxiety often manifested itself in rather poignant terms. “One editor,” remembers Deborah Harter, “who recently tried our [digital editing] system for the first time was very, very nervous. He actually got a piece of film and attached it to his desk, so he’d still be able to touch film!” (Qtd. in Pizzello 22).

The initial trepidations that many of those involved in filmmaking felt in the presence of new digital technology was soon replaced, however, by an enthusiasm for the possibilities it offered, as in the case of the nervous editor. Once he had become accustomed to the non-linear digital editing system, he quickly realized that a loss of tangibility could in fact mean greater control, and that materiality could be as much of a hindrance as an advantage. Having a literal grip on the film, he realized, did not mean that one necessarily “had a grip,” in a more metaphorical sense. “Only a week later,” recounts Harter, “he called up his agent and said, ‘I’m not ever cutting film again; I’m just doing Lightworks projects from now on’” (Qtd. in Pizzello 22). While this may be dismissed as the sort of story one would expect from the public relations department, it is borne out by the fact that, since Harter described this (perhaps apocryphal) conversion in 1994, non-linear digital systems have effectively become the standard for film editing, as, for instance, the celebrated editor Walter Murch has observed. He notes that “for 15 years the film industry has been steadily turning digital from the inside out.” During that time, though, certain areas of filmmaking have been more comprehensively digitized. “In my own area of expertise – editing and sound,” he writes, “the transformation is almost complete,” the result, perhaps, of the fact that here the benefits of digitization were first

and most directly felt (A1).¹⁹ For Murch, as for most editors, digital editing was ultimately experienced as a more efficient and effective means of accomplishing their traditional aesthetic goals, and they have more or less wholeheartedly embraced the new systems. For the most part, as someone concerned with the aesthetics of the cinema, Murch is enthusiastic. On the question of digital projection, for instance, he insists that “digitally-projected images [will be as] clear or clearer than 35-millimeter film, with none of the scratches, dirt or jitter that infect even the most pristine of 35-millimeter prints” (A1). Murch, moreover, directly addresses the concerns of those who see the loss of the cinema’s materiality as a fundamental loss, as threatening the cinema’s very constitution, by placing digitization within a long history of technological transformation, and by distinguishing between an art and its particular material, historically alterable constitution. “The sprocketed 35-millimeter celluloid,” he writes,

that served [...] at the amusement arcade in 1899, and served as well all the expanding cinematic dreams of the 20th century – through the arrival of sound, of color, of wide screen, of (for a few years, anyway) three dimensions, of dolby stereo – film itself, the physical medium that carried all these inventions uncomplainingly on its shoulders, is, at the end of the century, about to put down its burdens and slip away. In a few years it will become a historical curiosity. (A1)

Murch asks, “Is this something to be concerned about?” As an answer, he provides a more general definition of the cinema, one that is not dependant upon a specific physical medium. “[L]et’s declare confidently that although film may fade away there will always be pictures that move. The insight that gave rise to motion pictures, Muybridge’s quantization of movement in the 1880s, is as profound in its way as Gutenberg’s [concept

¹⁹ See Murch (A1). Murch has had a long and distinguished career as a film editor and sound designer, having worked on such films as *Gimme Shelter*, *Apocalypse Now*, *American Graffiti*, *The Conversation*, and winning Oscars for both editing and sound on the film *The Talented Mr. Ripley*. While noting that editing and sound engineering have been the first areas of filmmaking to be almost comprehensively digitized, he predicts that the cinema as a whole will soon be digital, including projection, suggesting that “it is likely that this transformation will be complete in less than 10 years” (A1).

of movable type], and as independent of the medium of transmission” (A1). Just as words, profound or banal, may be printed and widely distributed on the cheapest newsprint or the richest vellum (and, as Murch suggests, the reach and potential influence of words, of print, is vastly expanded by affordability and versatility of newsprint, as opposed to vellum, which may be seen as a corollary to the affordability and versatility of digital technology as opposed to the rich but expensive material of film), so moving images may be produced through various means, transported by various media, experienced through any number of different vehicles.

The specific material scaffolding of the cinema is in a constant state of transformation, altered to meet the changing stylistic demands of filmmakers, modified according to economic and financial exigencies, adjusted to take advantage of new technological developments. Some changes are accommodated more easily than others, their effects capable of being aligned with existing conceptions of the needs and goals of the cinema. For the editor, digital technology was put quickly and effectively into service. Editors, like Murch, are accustomed to the fact that their organization of the filmic material, through specific technical means, is not an end in itself, but is designed rather to produce the more conceptual cinematic experience, the spectatorial experience of watching moving images. They are as a result more disposed, perhaps, to adapt to the transformation of the technical means as long as the integrity of the final product is maintained – as long as meaningful sequences of moving pictures are still compellingly presented to audiences. This is perhaps one way of explaining the rapid and nearly comprehensive transition from the mechanical, linear, flatbed film editing apparatus to non-linear digital systems. The transition was also supported, however, by the fact that

the new technology was deliberately modeled on the old, so that one could simultaneously have the sense of familiarity while experiencing the advantages of novelty. The Lightworks system was designed, as Chris Pizzello explains, with a “‘film-friendly interface,’ which allows editors to work on a screen with graphic representations of editing viewers that behave in the way the viewers on real machines would” (22). The



Fig. 1 – Avid Xpress DV Interface

visual interfaces of digital editing systems have become relatively standard, and all have maintained a “‘film-friendly interface,” producing an environment where one can work in a more or less intuitive manner. The Avid system (see Fig. 1) is perhaps the most widely used today, and we

can see how the information is displayed according to rather traditional visual categories. A series of scrubber bars are typically displayed on the bottom of the screen, where video and audio elements can be easily manipulated, along a vertical, linear axis (despite the actual *non-linear* character of the system²⁰). The video is displayed in discrete “shots,” which can be assembled in a manner very much like physical editing, and then played in the viewer windows above, as one would on a flatbed editing table such as a Steenbeck or Moviola. Specific “sequences” are displayed in the upper left-hand portion of the screen.

²⁰ Digital editing systems are typically designed as “non-linear,” which effectively describes the mode of access one has to the material, which is available without having to move in a linear fashion through the footage, as one would through a filmstrip or through video tape. The possibility of such linearity, however, is maintained as a display option in editing systems, as we see here.

When chosen, the shots that they consist of are displayed in the scrubber bars. Such familiar elements have a real functionality in such designs, but often visual elements from the traditional cinematic apparatus are incorporated into the interface for no other reason, presumably, than to offer a comforting sense of familiarity, as in the case of the digital clapper board of the InCameraSlate system (see Fig. 2).



Fig. 2 – Digital Clapper Board

While the traditional, mechanical editing apparatus is rendered graphically in the design of the interface, however, the limits of that apparatus are also revealed, as the system provides the editor with an unprecedented degree of control and adaptability.

“Faster and more flexible than traditional machines, the computerized pictures and sound can be played, moved and edited freely, with separate control of sound and picture. ‘The idea is to arrange the screen to work the way *you* want to work, rather than having to adapt,’ notes Harter” (Qtd. in Pizzello 22). The dematerialization, or digitization, of the editing process, then, has allowed editors to see the degree to which they had been hindered, in certain respects, by the traditional apparatus, but also the degree to which it had determined how they thought about the process, how they thought about editing, and about filmmaking. In a rather significant sense, and perhaps inadvertently, the materiality of the filmmaking

apparatus had been shown to possess a *metaphorical* value, that had to a large extent functioned normatively, so that a “hands on approach,” for instance, was often understood to mean that one must be able, at some point, to put one’s hands on *something*, the ritual character of which is demonstrated in the reluctant editor’s need for a piece of film to be readily at hand. Such tokens of control, however, were quickly and easily dispensed with, for the most part, as the new technology was experienced as at once maintaining the *sort* of control that an editor desired while enlarging and expanding the degree to which that control could be exerted. While one cannot underestimate the degree to which such new technologies have been forced upon filmmakers by producers and studios who are interested primarily in greater efficiency, which effectively means tighter, shorter schedules and less cost, the degree to which digital technologies have in fact been embraced by those concerned with the aesthetics of the cinema is the result of their sense that the art of film has largely been served as well by recent technological changes as the business. One must also acknowledge, of course, the degree to which the new technology also functions metaphorically and normatively, itself having a deterministic effect upon the theory and practice of filmmaking. The point, though, is that such effects are local and specific, and must be considered in concrete terms rather than the more abstract assertions of global and fundamental change that accompany the claims for the “end of cinema.”

While I don’t want to smooth over what has often been a rather tumultuous history of technological change in the last decade and a half or so, it is worth considering the degree to which the digital has become a *fact* of filmmaking, as a consideration of the changes to editing practices suggests, and how relatively easily the digital fact has been

accepted and incorporated into filmmaking theory and practice, and without producing a sense that the very nature or constitution of the cinema has been altered or radically transformed. On the contrary, the new technologies have been relatively widely accepted according to the degree to which they seem to serve the aesthetic needs of the cinema and the interests of filmmakers. Part of this is explained by the actual rate of the transformation to the digital, which has in fact been relatively slow. The digital revolution arguably got underway in the 1960s at the Bell Laboratories, where some of the first experiments in digital imaging were conducted, and where the first digital images, moving and still, were produced.²¹ The 1970s and 1980s saw the steady introduction of computers and digital imaging technologies into the mainstream of film production, during which time filmmakers and those associated with film production became steadily aware of the new tools and technologies. But it was not really until the early 1990s that the concept of digital cinema exploded into the popular consciousness, as audiences marveled at the fantastic imagery in such films as *Terminator 2* (1991) and *Jurassic Park* (1993). The shape-shifting liquid metal figure of the T-1000 cyborg in *Terminator 2* and the convincingly realistic dinosaurs of *Jurassic Park* seemed suddenly to burst the limits of possibility for the cinema, and seemed to indicate a dramatic and fundamental change in the medium.

While these and other films brought digital technologies to the attention of audiences and film theorists, producing a sense of sudden and sensational change, those

²¹ See Mitchell (62, 75). While he makes a number of claims that I contest in this thesis, Mitchell's book is a very useful introduction to the history of digital imaging technologies and the various contexts within which they have been developed and utilized. His technological history helpfully demonstrates the degree to which the meaning and value of such technology is determined pragmatically, according to the uses to which it is put. For a quick consideration of the specifically *cinematic* context within which digital technology has been utilized, see the chronology of cinematic effects, leading up to the digital era, compiled by Lawrence (30).

in the industry saw the events of the early 1990s as dramatic, certainly, but also as the culmination of developments long underway, and as part of an essentially continuous history of technological change. This was especially clear to cinematographers, whose job it has been, historically, to discover the aesthetic potential in the fundamentally technological medium of the cinema. Digitization, while occurring rapidly, was understood as simply another in a series of dramatic technological changes which had characterized the history of the cinema, and to which the cinematographer would have to respond. While certainly aware of a certain acceleration in technological developments, they were understood to be based in an already long history of preliminary developments. “This revolution,” wrote cinematographer Steven Poster in 1993, “has been steadily approaching us for the last ten or fifteen years, but lately it’s advanced like a steam roller” (104). Poster insists upon the inevitability of the revolution, however, and urges cinematographers to educate themselves about the new technology or risk being “left out of the game” (104). In 1993 it was not *whether* digital technology will transform filmmaking, but rather how those involved in the cinema will contend with the new digital realities. “If you aren’t willing to accept the digital world of today,” he insists, “you will become one of the analog dinosaurs of tomorrow” (104).

It is not, however, meek acceptance that he advocates, nor simple acquiescence in the face of inevitable technological transformation. While the changes that were taking place were momentous, Poster sees, specifically in the art of cinematography, a fundamental continuity and an opportunity for cinematographers to take advantage of the new possibilities created by the technology. It may even be, perhaps, that cinematographers are uniquely capable of seeing the new potential and opportunities in

the digital. “I have found,” he explains, “through my experience with high definition television, computers, and other forms of digital imaging [...] that our expertise, and especially our art, translate perfectly into this new language.” Moreover, he adds, “[i]t’s not a difficult language to learn, either” (104). While he does warn against the possibility of technicians and computer programmers usurping the traditionally aesthetic responsibilities of cinematographers (or, worse perhaps, the danger of cinematographers becoming mere computer programmers), Poster understands that the tasks of cinematography remain essentially the same in the digital era. “What we cinematographers do best,” he writes, “is compose images and sequences and conceive and execute lighting, all the while translating our ideas and techniques to the medium we are recording on – all the abilities necessary *to make any imaging system work*” (104).

The cinema, Poster implies, is and has always been an inherently technological medium, a system of techniques for the production of images. Digitization does not alter this fact – if anything it clarifies it, emphasizing the technological basis of film artistry. The *art* of cinema lies in an understanding of the (always changing) technology, and in the careful and deliberate use of the tools and techniques to produce images that are beautiful, meaningful and significant for audiences. In so far as the cinematographer’s role has been primarily to mediate between an artistic vision and the technical means available to realize that vision, little had really changed. In fact, the task of the cinematographer is precisely to discover the artistic potential of digital imaging technologies, to demonstrate that they possess a potential on par with (if not in some respects superior to) traditional cinematic technologies. The role of the cinematographer, far from becoming obsolete, is maintained, perhaps charged with a new urgency. “The

need for good cinematographers,” he argues, “will always exist, but we must continue the battle to maintain art and craft in our work, and to stay abreast of new imaging developments” (104).

What one finds in the pages of magazines like *American Cinematographer* is just such an effort to stay abreast of developments, as cinematographers seriously engage with the new technologies, addressing both the difficulties they pose and the new possibilities they offer. The tone, though, is generally optimistic, the result of having accepted that technological change is not merely inevitable but has, to a large degree, already occurred. Heading into the 1990s, any subsequent changes will be essentially incremental, building upon the basic shift that has already taken place. In a feature article from 1992, Bob Fisher announces “The Dawning of the Digital Age,” and he strikes an up-beat tone (while mixing metaphors). “Many moviemakers,” he begins, “have already departed on a journey down the digital highway. Their destination is a new kind of magic which gives them more creative latitude. This new technology can save time and money, and make it possible for artists to have a second shot at their images in digital postproduction, where they’ll be able to make fast, interactive decisions” (“Dawning” 70).

Fisher is emphasizing the point made by Poster, which is that the most potentially significant effect of digitization will be the degree to which the traditional role of the cinematographer as mediator will be maintained and even enhanced, as greater collaboration between director and cinematographer is made possible. With the increased ease with which imagery can be produced and altered digitally, changes may be made immediately and in direct consultation with the director. According to Ed Jones of the

effects company Cinesite, computer workstations and editing and effects software offer “great potential for significantly altering the collaborative process. Instead of the cinematographer trying to interpret the vision of the producer and director, and showing the results to them weeks or maybe even months later, they can now preview and tweak the images together, and maybe make subtle changes in an interactive environment.” The results are understood in primarily aesthetic terms. “That,” concludes Jones, “can make a big difference in the dramatic content of the film.” (Qtd. in Fischer, “Digital Cinematography” 32).

By 1994, digitization is presented as a *fait accompli*, having become the dominant fact in the cinema. No longer simply to be marveled at, the task now is to put the new tools to work as effectively and productively as possible. “Clearly,” writes Chris Pizzello, “digital’s age of innocence is over. The field now casts an imposing shadow over nearly every phase of the filmmaker’s arc, from storyboarding to the final, frenetic bouts of editing” (22). But for Pizzello, the more apparently spectacular manifestations of digital imaging – cyborgs and dinosaurs, the on-screen presence of which were causing considerable commotion – are perhaps less significant than the expanded possibilities that the technology offers for refining and enhancing the quality of cinematic imagery, a basic role that technology has long been understood to perform in the cinema. “The sensational abilities of the new digital tools showcased in *Jurassic Park*,” he writes, “provide the most fascinating flights of fancy for the layman (as well as the sexiest copy for the media),²² but digital technology’s developing role as a veritable ‘911’ for postproduction

²² And, as I will argue, they provided the fodder for much hand wringing and forecasting of doom by film theorists, who have, for the most part, emphasized the spectacular and transformative aspects of digitization, while playing down the more practical aspects that point to greater continuity.

people is equally important” (22). The burgeoning set of digital tools, that is, are making it easier, and in some cases possible for the first time, to achieve a primary cinematic goal – to bring the images into greater accord with how they had originally been imagined. “With a few deft taps on a keyboard, both human and technical glitches – pesky film scratches, perhaps, or a sloppy bloodstain on an actor – can be erased with ease” (22). These are imperfections that filmmakers in the past may well have endeavored to correct, but through complex and time-consuming means such as reshooting or reprinting. Digital tools merely simplify such tasks, leaving filmmakers to concentrate on more significant concerns.

The digital quickly came to be understood by filmmakers and the film industry as a fact, but not one to be either simply celebrated or lamented, but rather carefully considered and explored. The many new digital tools were picked up and put to a variety of uses. By the early 1990s, following a period of quite spectacular development and excitement, the attitude towards the digital became rather more practical and businesslike. There was the inevitable hype, and suggestions that the change was radical and transformative, but for the most part digital technologies were quickly and comprehensively incorporated into cinematic practice, and the project of filmmaking proceeded apace. While attention was drawn to those films that highlighted or foregrounded the spectacular potential of digital special effects, mainly science fiction and action films, leading to a distinction between a sensational, digital cinema and a more low-key, traditional analog cinema, the distinction quickly became a spurious one. Digital technologies were being comprehensively employed, to some degree and at some stage, in the production of virtually every film, and the greatest advances were increasingly subtle, unlikely to attract much attention.

While films like *The Matrix* (1999) were producing a flurry of critical and academic speculation about the future of the cinema and, more fundamentally, about the nature and reliability of cinematic imagery, less technically flamboyant films were actually making the greatest strides, incorporating digital technologies into the filmmaking process in a less obvious but more significant manner. “Someday,” writes Bob Fisher, in the October 2000 issue of *American Cinematographer*, “industry aficionados may look back on Joel and Ethan Coen’s *O Brother, Where Art Thou?* as a landmark film that began to redefine the cinematographer’s role” (37). The Coens’ film, shot by Roger Deakins,²³ was subjected to a comprehensive process of digital modification and correction. While “not the first time an entire motion picture has been digitized and then converted back to film for distribution,” writes Fisher, noting that *Pleasantville*, *Urbania* and *The Phantom Menace* had all been completely converted for postproduction, but that in all these cases the conversion had been done in order to integrate the very many visual effects that are featured in these films – especially *The Phantom Menace*, which had effects integrated into many hundreds of shots – the Coens’ film was the first to be wholly digitized in order to alter it in its entirety (37-8). “Although *O Brother, Where Art Thou?* contains a number of visual effects shots,” notes Fisher, “these scenes were incidental to the decision to digitize the film” (38). What the Coens wanted for the film was a dry, dusty, desaturated look, suggesting the sepia tones of the depression-era, and they had originally intended to shoot the film in Texas.

²³ Deakins came to the picture with almost thirty years of experience as a cinematographer. His career began in the UK, where his first notable accomplishment was the cinematography on Michael Radford’s *Nineteen Eighty-Four* (1984). He also shot Alex Cox’s *Sid and Nancy* (1986), Radford’s *White Mischief* (1987), James Dearden’s *Pascali’s Island* (1988) and, for his first American film, Bob Rafelson’s *Mountains of the Moon* (1990). He began his association with the Coen brothers in 1994, shooting *The Hudsucker Proxy*, followed by *Fargo* (1996), *The Big Lebowski* (1998) and *O Brother, Where Art Thou?* He has since photographed the Coens’ *The Man Who Wasn’t There* (2001).

Ultimately, though, the film was shot in Mississippi, in the summer, and Deakins had the task of draining the film of much of its color in order to achieve the desired appearance. “I had to find a way,” explains Deakins, “to desaturate the greens and give the images we were going to shoot the feeling of old, hand-tinted postcards, [which was the look] favored by Joel and Ethan” (Qtd. in Fischer 38).

There were a variety of traditional techniques available to Deakins to achieve the desired effect, and he considered a so-called “bi-pack” system, which would combine a black-and-white print of the film with the original color negative. But the desaturation, while subject to quite precise control, was not selective enough. The decision was then made to digitize the entire film, in order to provide virtually absolute control over every shot. Using a variety of newly available technologies, Deakins and the Coens drained the film of specific colors, the lush greens of the Mississippi summer in particular, to produce a final result much closer to how they had originally imagined the film would look. The decision to accomplish this through digitization was reached after concluding that it was the most effective and efficient means available. Neither Deakins nor the Coens had any particular investment in digital technology, which had become for them merely one of the many tools available to filmmakers. As Fisher writes, “the Coen Brothers saw the computer as just another tool for extending the art and craft of cinematography,” noting that they still prefer to edit their films on a flatboard console, which they feel “gives them more tactile control of the film” (38).

It is less a question of the inherent value of tactility, or materiality, in and of itself, however, and more fundamentally a question of aesthetic control. Whether they had used filters, or a specific color process, or the bi-pack printing system, or digital color

alteration, was merely a question of which would give them the appropriate degree of control over the imagery that they were endeavoring to produce. For the Coens, little distinguishes the various tools available to filmmakers, apart from considerations of efficiency and effectiveness. With the exception of vocal advocates such as George Lucas, who has long championed a wholly digital cinema, most filmmakers working today tend, like the Coens, to see the new technologies as an additional choice available to them as they make their decisions, whether technical, financial or aesthetic. Digital technology will remain one choice among many as long as better quality, more cost effective, and more efficient alternatives exist. The cinema may well, at some point in the future, become an entirely digital medium. For the moment, though, while it is an increasingly dominant fact in film production, as well as in distribution and exhibition, digital technology is only one element of a multi-faceted, heterogeneous phenomenon, and it has, for the most part, been effectively incorporated into the medium, and subordinated to prevailing cinematic standards.

These are, moreover, not merely the standards of a mainstream or Hollywood cinema. Digital technology is being incorporated into a variety of filmmaking *milieux*, and put to a wide range of often quite different aesthetic purposes and stylistic ends. The filmmakers of the *Dogme* collective, in particular, have turned to digital technology in order to achieve their (often quite disparate) goals. In his 1998 film *Festen (Celebration)*, chronicling the disintegration of a bourgeois Danish family over the space of a single weekend of deceptions and revelations, Thomas Vinterberg uses the constraints of a hand-held digital video camera²⁴ to produce a sense of stifling intimacy and entrapment,

²⁴ Shot with a Sony PC-7E digital video camera, the film was blown up to 35 mm film for projection.

and to produce the very image, in its pixilated graininess, of dissolution and disintegration. For Vinterberg, the use of the digital video camera more generally produced the opportunity for working within the sorts of aesthetic constraints that the *Dogme* manifesto had proscribed.²⁵ He has described the manifesto himself specifically in terms of constraint, and the possibilities that constraint can create. “The whole idea of it,” he has said, “was actually to us when we did it very obvious, because there’s an artistic satisfaction to work within a frame, which I think is obvious, and to work against obstacles [...] makes something grow, from an artistic point of view it is the most liberating thing you can do, to make such a tiny frame” (Qtd. in Wood 50).²⁶

For Vinterberg, and for the *Dogme* collective generally, the manifesto and its apparently rigid set of criteria are designed, through the sorts of limits that it describes, to produce the possibility of an alternative to the dominant, mainstream cinema and its aesthetic and political complacency. “Dogma 95,” Vinterberg has said, “is a reaction to the laziness and mediocrity in both European and American cinema” (Qtd. in Porton 19).²⁷ As one means of combating such mediocrity, digital technology is both financially and aesthetically appealing and effective. In the hands of the *Dogme* filmmakers, it is being used to return to the cinema a vitality, an urgency, like that of earlier eras in the history of the cinema (which also often coincided with technological as well as political and social change), but with a keen understanding of and sensitivity to the profoundly

²⁵ The *Dogme* Manifesto is available on-line at www.dogme95.dk

²⁶ In most Anglo-American accounts of the movement, the English spelling “Dogma” is used.

²⁷ While often understood as ironic, and even as a satire of the artistic manifesto, which seems to have been relegated to the past, to a less ironic era of heroic modernism, Vinterberg, for one, is concerned to underline the serious objectives of the *Dogme* group and its “Vows of Chastity” and its dedication to a “cinema of poverty.” In his interview with Robin Wood, Vinterberg declares, “I think the *Dogma* is in the area between a very solemn thing and deep irony” (50).

variable character of the cinema, the ease with which it can be made to produce various effects, various responses and reactions, and the many different values that can adhere to the technologies of cinematic production. For the moment, digital technology has a particularly significant capacity that they are endeavoring to exploit for its innovative and restorative potential.

Richard Combs and Raymond Durnat, in their consideration of the *Dogme* strategy, have stressed this aspect of the collective's activities. "The ease and cheapness of digital video equipment," they argue, "is a blow for lower-than-low budget filmmaking and a reproach to the bloatedness of industrial cinema" (28). But the use of digital technology by *Dogme* filmmakers does not reveal anything beyond the pragmatic and practical aspects of achieving the goals of the manifesto. The efforts of *Dogme* to follow their own rules, to strike a blow against cinematic mediocrity, through their aesthetic games and their exploitation of new (and old) technology, argue Combs and Durnat, "tell us less about what is basic or necessary or true to the cinema than it does about how the equipment can be used" (28). They find, as many others have, clear historical precedents for the *Dogme* movement, but are also aware of the sensitivity of the filmmakers' to the very different circumstances within which they are pursuing some of the most traditional aims of a serious, committed cinema. "Dogma," they write, "like many a religious movement, is less avant-garde than revivalist. Its concerns aren't completely different from, say, Ken Loach, Mike Leigh or John Cassavetes. But its rules respond to a changed situation, to marvelous new temptations" (30). As the situation changes, as temptations come and go, the means of response are altered, recalibrated. New tools, new approaches, are utilized and adapted, less with the sense that the source

of the “cinematic” lies in any one approach, or any particular technology, but rather in being aware of and attuned to the necessity of constantly adapting to the contexts within which the meaning of style and technology in the cinema constantly fluctuate. This, ironically, is the dogma of the otherwise in fact undoctinaire methods and strategies of *Dogme*. This is the very solemn side of the group’s otherwise “deeply ironic” stance.

Lars von Trier, the putative founder and leading figure of the *Dogme* movement, whom Gavin Smith has called “a figurehead of the impending ‘digital revolution’” (220), has been explicit in his “contextualism,” if it may be so described. Asked after the release of *Dancer in the Dark* (2000), which was shot on digital video and, like *Festen*, blown up and printed on 35 mm film for theatrical exhibition, whether he would shoot on film again, von Trier strikes an open and pragmatic attitude on the question of changing technology, noting the real significance of new technology, but resisting the notion of the inherent value of any specific technology, and the need to stake a claim to any particular technological mode, to attach any greater importance or significance to one particular mode over any other. “Video is a revolution,” he says, “because everybody can make films for very little money and that means a lot of films can be made that we otherwise would not have seen. But I’ll say one thing: everybody says, We’ll use video when video looks like film. But this is not really logical, because the techniques of film were there before. I’m sure that we’ll see films that don’t look like film or video today, but something completely different, and I will try to go there if I live that long” (Qtd. in Gavin Smith 22).

The willingness to turn to new technology in an impromptu or *ad hoc* manner, determining the value of that technology according to specific, precise and variable

aesthetic criteria is a common attitude among independent and avant-garde filmmakers, for whom a variety of constraints and exigencies have always meant that they must adapt to often unstable and unpredictable contexts and circumstances. Digital technologies, not surprisingly, considering their relative flexibility and affordability, have found favor among many of those working within the often precarious realms of experimental, independent and documentary filmmaking; and many display a comfort and familiarity with the technology that points to their practical attitude towards it, as well as the contingency of their allegiance, their sensitivity to contextual and other factors. The British filmmaker Chris Cooke, in a roundtable discussion on the virtues and shortcomings of digitization sponsored by *Sight and Sound* in the fall of 2001, describes the easy facility and nonchalance with which digital technology has been incorporated into the working habits and approaches of those in his milieu, while at the same time placing the seemingly revolutionary strategies of *Dogme* into a more instructive context.

In Nottingham everyone I know either has a video camera or regularly hires or borrows one. When the *Dogme* manifesto came out, some people were yawning and saying, 'We've been doing that for ages,' while others were saying, 'Fantastic, now we can carry over what we've been doing into features.' There's a fluidity to the DV process, from filming through to distribution. People know it's within their means and audiences pick up on the documentary immediacy. It's more instantaneous, more familiar aesthetically. (Qtd. in James 20)

At the conclusion of the discussion, another of the participants, filmmaker Saul Metzstein, summed up the attitude of most of those involved: "I'm more interested in aesthetics than technology. If DV's better for certain things, then great" (Qtd. in James 24).

Experiments with and investigations into the practical terms of utilizing digital image technologies, in order to determine and assess the new technology's specific potential as well as its possible limitations and drawbacks, are underway in a variety of

contexts, some more formal than others, with various ends and goals in mind, but most with a keen sense that the actual value of the technology can be determined only through a sustained consideration of the uses to which it is or could be put. Charles Tashiro, for instance, in the interdisciplinary context of the New Literacy Project, a collaboration between the School of Cinema-Television at USC and the Annenberg Center for Communication, launched Project 734, “an independent study research project and experiment,” as he describes it, for students at Annenberg and USC (17). “Participants were told simply to shoot what they wanted and to explore the potentials of off-the-shelf technologies. No restrictions were made on content or form, aside from a limit on running time of twenty minutes” (17). Toshiro was interested in the prospects that readily accessible, relatively affordable digital video technology presented for the elaboration of what he calls a “kind of middle-ground” cinema, one between the mainstream and avant-garde, “that tries to advance formal experimentation *and* narrative” (17). Students were given access to “fairly sophisticated video and digital editing tools,” but that were not beyond the reach financially of non-professional filmmakers who would inhabit the “middle-ground” of experimental filmmaking that Toshiro envisioned. Students had the use of “two video-capture-capable Macintoshes, a Hi8 and miniDV camcorder, a shotgun and lavalier mike, a Lowell video lighting kit and a tripod. They edited their projects using Adobe Premier 4.2” (17). Toshiro offers a fascinating account of several projects that were produced, and the complexity of negotiating the many built-in formal assumptions of such commercially-available digital video technology, which allow for “an increased technical splashiness for ‘amateur’ productions,” but which also forced such productions towards the very mainstream models of narrative and representation to

which they were endeavoring to elaborate alternatives. The project's goal, though, was precisely to encourage the students to consider and reflect upon the "biases of technology," the prejudices and assumptions built in, explicitly and implicitly, to the technology, and to elaborate and develop alternatives and resistances. "These assumptions and prejudices begin to add up," notes Toshiro. "Even though they are fairly easy to ignore because they are relatively explicit, the user cannot always work against them. The quieter advantages offered by digital media sneak up to produce more permanent and lasting effects on expression" (22). Overall, though, Toshiro sees promise in the technology for a particular sort of personal filmmaking, at once formally experimental and narratively traditional, through which non-professional, amateur filmmakers may elaborate visual, even "cinematic," texts that at once transcend the formal structures of the home-movie that developed with the availability of domestic, commercially-available 16 mm camera and film technology, while offering the potential for the sort of powerful personal expression that the home movie was, at its best, capable of realizing. Toshiro concludes, optimistically:

Digital tools help to overcome some of the failings of 'home movies.' While they cannot make up for a lack of talent or ideas, they can give those with ambition and formal sophistication the means to express powerful, personally motivated concepts in compelling form. The results are almost guaranteed to provide a much more resonant experience, albeit for a smaller audience, than anything Hollywood could produce. (23)

I have considered only a few instances of the heterogeneous and varied contexts within which digital video and imaging technologies are being utilized and conceptualized, from the very centre of mainstream Hollywood production, to the most explicitly personal, anti-Hollywood efforts of amateur creation. A number of the themes that have arisen will be pursued at greater length later in the thesis. For the moment,

though, I will return to the question of how the concept of the digital is being received within the rather less practical, more theoretical milieu of cinema studies.

Chapter 3: Digital Theory

As cinema has appropriated video and computer technologies in its production and as digital imagery becomes more prominent and sometimes less distinguishable from analogue imagery, *the nature of the image changes fundamentally*.

Yvonne Spielmann
(131; emphasis added)

Cinema is the art of the index; it is an attempt to make art out of a footprint. [...] As cinema enters the digital age [...] [i]t is no longer an indexical media technology but, rather, a subgenre of painting.

Lev Manovich
(*Language* 295)

Theories of Digital Cinema

If the dematerialization of significant aspects of the filmmaking process is being accepted with a certain equanimity and even enthusiasm by most of those who are charged with the production of cinematic imagery, the other experienced professionals in question, whose job it is to produce accounts, descriptions and explanations of that production, and whose theories have largely been elaborated according to certain, sometimes unacknowledged, assumptions about the *manner* of production – assumptions specifically about the materiality of production – have responded with considerably more trepidation and somewhat less equanimity. The tools of the film theorist do not seem as adaptable to the realm of the virtual as those of the filmmaker, of the film editor or the cinematographer, and there is a sense that the loss of control and authority that the theorist has experienced has not come with the sorts of compensations that those in the practical realm have enjoyed. On the contrary, the changes taking place seem to suggest the end of the very possibility of speaking and thinking about *film*. Just as the pronouncements of film theory had begun to achieve a certain confidence and authority,

the very object about which the discipline had finally, and with considerable effort, established its right to speak, seemed suddenly to be changing into an apparently very different object, with dire consequences. The sense of anxiety among film theorists has been palpable, and there is no shortage of explicitly apprehensive declarations. “The rapid emergence of new media as an industry and perhaps an art raises a [...] perilous question for cinema studies,” writes Rodowick, for instance, who has contributed in no small measure to the development of the discipline, and who sees the possibility of a swift and sudden end to its rather brief adventure. “The twentieth century was unquestionably the century of cinema, but is cinema’s time over? And if so, what is to become of its barely matured field of scholarship, cinema studies?” (“Dr. Strange Media” 1396).

Rodowick ultimately offers a relatively optimistic answer to this question, insisting that cinema studies will not only persist, but that as a discipline it is uniquely suited to an analysis of the phenomena of digital cultural. Yet despite his efforts at positioning cinema studies and film theory at the forefront in the analysis of new media and new image technology, Rodowick perpetuates certain conceptual and theoretical notions that emphasize the radical difference between traditional film-based media and digital imagery, and which in fact prevent certain of the more significant continuities from being seen as such. By insisting upon the material basis of the cinema’s identity, which has now suddenly disappeared, Rodowick is forced to accept a paradox, which he endeavors to transform into a virtue. A more compelling case may be made, I argue, for the continued relevance of the discipline of cinema studies once it is acknowledged that the main features and characteristics of the phenomenon have in fact been maintained

despite the digital alterations and modifications. “The best critical work on digital culture,” he insists, “recirculates and renovates key concepts and problems of film theory” (1403). This is among the most significant points of Rodowick’s argument, and it is a sentiment with which I entirely concur. Yet in the case of what may be *the* key concept of film theory, what may be the most significant problem for it to solve, Rodowick is willing to concede, arguing that it has been effectively eliminated as a problem, that it is no longer a question, that whatever relationship the cinematic image may have had to reality has been effectively terminated. The ontological question that had animated film theory for most of its history, had always devolved to the issue of the cinema’s physical origins, to its status as primarily an analogical or indexical art. Digital technology, he argues, “has loosed its anchors from substance and indexicality.”

Still, Rodowick identifies himself – *continues* to identify himself, he insists – as a film theorist, a position that had already become a marginal one within the discipline of film studies, which is now itself experiencing a radical marginalization.²⁸ To be a film theorist, then, Rodowick suggests, in light of the sorts of changes that are taking place, is to be doubly marginal. He has had, as a result, to become insistent, arguing that he may continue to consider himself a *film* theorist, “[d]espite my interest in new technologies and new media,” and despite the sense that those new technologies and media are emptying the word “film” of any specific meaning (1397). His allegiances, that is, seem to be divided, a sense that is only reinforced by recent developments in the old discipline,

²⁸ The centrality of purely theoretical questions, Rodowick argues, had characterized film studies in the 1970s and early 1980s, but the discipline has since been dominated, on the one hand, by historical concerns – “with just cause,” he acknowledges – and, on the other hand, by the more “sociological” concerns of cultural studies and media theory. While understandable, for Rodowick it is important to point out that it is partly as a result of these new emphases, which have enlarged film studies’ purview, that the discipline has moved away from specifically “filmic” questions, and so created the danger that the loss of “film” may be too easily and readily accommodated.

which appears to be engaged in an act of institutional redefinition or reconstitution, if not outright dissolution.²⁹ “[T]hrough the 1980s and 1990s one of the recurrent debates in the Society for Cinema Studies was how to represent the field’s growing interest in television and electronic media. Was cinema studies disappearing,” asks Rodowick, somewhat wistfully, “and was film becoming less central? This was a hard pill to swallow for the prevideo cinephile generation, of which I am a card-carrying member” (1397). Yet it had become difficult, if not impossible, he insists, to ignore the very real changes that had been taking place, nor could one refuse to acknowledge that the consequences were potentially radical and transformative, and that they required analysis and explanation. This, however, forced one to ask in turn about the capacities of film studies, and film theory, to account for such consequences, if what remained after these changes seemed no longer to resemble what had for so long been understood as the cinema.

That the cinema was at its end, or at least locked in a struggle that could well mean its end, seemed confirmed by a rather unlikely source, for Rodowick – the cinema itself – or at least by certain generic Hollywood or Hollywood-style films. Considering the summer offerings of 1999, he found a recurring theme, that of “digital paranoia.” “Films like *The Matrix*, *Thirteenth Floor*, and *eXistenZ*,” he notes, “each played with the idea that a digitally created simulation could invisibly and seamlessly replace the solid, messy ‘analog’ world of our everyday life. [...] The digital versus the analog was the heart of narrative conflict in these films, as if cinema were fighting for its aesthetic

²⁹ Redefinition, reconsideration, reinvention, and reconstruction are terms that one comes across more and more frequently in literature on the state of film studies. They often provide the rubric for contemporary accounts of the discipline, as, for instance, in the title of Christine Gledhill’s and Linda Williams’ recent anthology, *Reinventing Film Studies*, or David Bordwell’s and Noël Carroll’s *Post-Theory: Reconstructing Film Studies*.

existence” (1397). Such films seemed to have as their goal to explain the degree to which certain image technologies were inherently unreliable, while reasserting by contrast the cinema’s inherent and enduring reliability. The most suspect technologies were the television and, the inheritor of the television’s legacy, the computer, which by their



Fig. 3 – *The Matrix* David and Larry Wachowski, 1999

nature are understood to be more capable of offering – and more likely to offer – deceptive and duplicitous images. *The Matrix* was, perhaps, the most extreme and dogmatic in its defense of analog representation, as opposed to the too easy electronic disassembling of the television, and the computer’s potential for producing perfect digital simulations, troublingly indistinguishable from reality.

The clash of media is often made explicit in the film, and the dangerous qualities of the cinema’s rivals are given visual form. At

a key moment in the narrative, for instance, when Morpheus (Lawrence Fishburne) is demonstrating for Neo (Keanu Reeves) the radical unreliability of perception, and the potential for confusion between images and reality, he positions himself in front of a vintage television. The scene itself, moreover, is set in the unlikely context of a rocky, barren landscape, (See Fig. 3) recalling the influential description of television offered in 1961 by Newton Minow, then Chairman of the FCC. Spend a day in front of the

television, Minow said, and “you will observe a vast wasteland.”³⁰ The more direct reference, though, is revealed when Morpheus dramatically greets Neo by echoing Jean Baudrillard. “Welcome,” he says, “to the desert of the real,”³¹ the desolate context of electronic and digital simulation, a meaningless landscape, without significance, upon which the malevolent, intelligent computer that has enslaved the human race may project its fantasies, which are designed to stupefy and to placate, and to thwart any incipient desire for liberation. The false, simulated world, though, has an artificial sheen, a glossy and garish quality, which is contrasted with the coarse, grainy character of the “real” world, which is experienced as the difference between imagery produced or simulated digitally and that rendered more authentically through the analog and mechanical means of photography. The film seems to function quite clearly as a warning, alerting the viewer to the potential of digital media to produce radically unreliable representations, to its capacity to erase the line between the real and the simulated. Its warning, moreover, is cast in starkly political terms, offering, in the rather sensational terms of science fiction, a dystopic vision of the potential consequences should that line disappear, should we become incapable of making the crucial distinction between reality and its simulation.

Rodowick, however, sees the apparently critical stance that such references seem to establish as insincere, even duplicitous, serving only to mask the deceptive character of all representation, but especially of the acutely illusory products of the Hollywood

³⁰ From a speech delivered to the National Association of Broadcasters in Washington, D.C. on May 9, 1961. The entire speech can be found in Lester Thonssen, *Representative American Speeches 1961-1962*.

³¹ The significance of this Baudrillardian reference, and the links between *The Matrix* and postmodern philosophy generally, are explored at length in William Irwin’s recently published anthology *The Matrix and Philosophy: Welcome to the Desert of the Real*. The quote itself is from Jean Baudrillard’s book *Simulacra and Simulation*, which is featured in the film, ironically hollowed out in order to serve as a hiding place for Neo’s illegal computer disks.

cinema. “The conflict” staged by these films, between authentic and trustworthy analog representation and artificial and unreliable digital imagery, he argues, “is entirely disingenuous” (1397), serving merely to underwrite the claims Hollywood has historically made for the genuineness of its images.³² Digital figments, he argues, are only the most recent versions of unreliable and deceptive imagery that Hollywood has incorporated into itself in order to distinguish them from its own more (putatively) authentic and honest representations. Rodowick writes:

The staging of the digital as simulation functions in the same way as the narrative dream or fantasy in the classic Hollywood musical. By opposing the imaginary and the real as two different narrative registers represented in the same film, Hollywood narrative, even in its most outlandish form, asserts all the more stridently its status as “reality.” This is a classic case of Freudian *Verneinung*. When this strategy occurs as a narrative representation of technology, it is always a contest between competing versions of the real that dissemble the fact that each is imaginary. Narrative conflict with the digital reasserts the aesthetic value of analog images as somehow more real than digital simulations [...]. (1397)

The Matrix, argues Rodowick, “is a marvelous example of how Hollywood has always responded to the appearance of new technologies,” whereby the “new arrival is simultaneously demonized and deified, a strategy that lends itself well to marketing and spectacle” (1398). Establishing a dichotomy between the two modes of imagery, that is, allows Hollywood to at once capitalize upon the novelty of digital imagery, while nevertheless maintaining its status as an *alternative* to such imagery, against which it is in fact competing in the marketplace. Digital, computer-generated imagery, available through a variety of different media and platforms, from computer screens and video-game consoles to flat-screen televisions and cell-phones, are clearly offered and marketed as distinct from and more advanced than the old-fashioned imagery of the cinema, which

³² Others have offered interpretations of the film as in fact far more conservative than its Baudrillardian references would seem to suggest. See in particular Kilbourne.

depends upon the increasingly superannuated optics and mechanics of the nineteenth-century. If the average filmgoer's historical awareness does not permit such a clear determination of the cinema's origins, the cinematic is nevertheless experienced increasingly as vaguely outmoded, as passé, as perhaps even obsolete. In the face of such an experience, the cinema, especially the Hollywood cinema, must find the means to capitalize upon the sense of difference, and to invest itself with a value and quality that will ensure that it will not be wholly replaced by the new technologies. Staging dramatic and spectacular battles between the competing media, but through the actual incorporation of the rival technology into the cinematic mode, is the most effective means of at once capitalizing upon the novelty and popularity of the new while maintaining a sense of the continuing relevance of, or even superiority of, the older technology.

Rodowick points to the significance and suggestiveness of just such an analysis of the recent spectacular cinematic narratives of "digital paranoia." "In terms of market differentiation," he says, the Hollywood cinema is more than willing to exploit the novelty of digital imagery, so that, in recent cinematic manifestations, "computer-generated imagery codes itself as contemporary, spectacular, and future-oriented, a sign of the new to bolster sagging audience numbers" (1398). Yet it cannot be seen as possessing a greater value than the more primary photographic and cinematic context within which it is incorporated, and towards which it must be seen to be subordinated. This is most effectively and efficiently accomplished by staging the clash of media in literal terms, as a spectacular struggle between the forces of good and evil, between truth and lies, between reliable and unreliable representation. "At the same time," notes Rodowick, just as the cinema exploits the novel, contemporary and spectacular capacities

of digital imagery, they are simultaneously devalued, shown to be inherently duplicitous, while “the photographic basis of the cinema is coded as real, the locus of a truthful representation and of the authentic aesthetic experience of cinema. Photography becomes the sign of the vanishing referent, which is a way of camouflaging *its own imaginary status*” (1398; emphasis added).

Significantly, Rodowick refuses the strict dichotomy that *The Matrix* specifically, and the Hollywood cinema generally, seems to establish between digital and analog imagery, according to which computer imagery is understood to be different in kind from the more genuine photographic imagery that underlies cinematic representation. Understood as a wholly new phenomenon, radically different in nature from cinematic representation, digital imagery may well be beyond the scope of the traditionally defined project of film studies. Rather than follow the self-serving logic of Hollywood itself, however, and accept the theoretical premises that it establishes, Rodowick is concerned instead to show that a significant continuity exists between the two modes of representation. He is concerned, moreover, to argue that film studies, and film *theory*, has a considerable amount of insight to bring to bear on the issue of that continuity, and on the general questions of representation that have long governed the discipline’s investigations, questions that are maintained even in the era of digitization.

The most important of these is precisely the “imaginary status” of the cinema’s photographic identity, its presumption that as a result of its photographic constitution it somehow possesses a more intimate relationship to reality, to the world, and that this is the source, for instance, of its superiority to rival modes of representation such as computer generation. Once this has been shown not to be the case, then one may question

the cinema's dependence upon its photographic basis as the implicit source of its value and significance generally. If the cinema's identity is *not* determined by a photographic materiality, if its relevance does *not* lie in the unique link to the world, to reality, that the photographic image has been understood to possess, and if the photograph, particularly as it is mobilized and utilized by the cinema, is understood to be as *imaginary* as computer-generated, digital simulations, then nothing has really changed, and film studies may maintain its status as an authoritative discourse (*the* authoritative discourse) on the cinematic phenomenon, the character of which endures despite the apparently troubling implications of digitization. But for Rodowick, and for many others, there *is* something that has changed, and it is at what is understood as the fundamental, material level, in the loss of the "principal powers" of photography and cinematography, "those of analogy and indexicality," the "spatial and temporal powers that reinforce photography's designative function with an existential claim" (1399).

If the cinema has lost such powers, if it no longer has any existential claim to make, or designative function to perform, then what remains? Rodowick seems to be demonstrating how film theory may also be able to become more efficient, like film editing, on the basis of digitization's demonstration of the fact that the cinematic experience does *not* derive from its materiality. But, despite the insistence upon the "imaginary status" of the photographic, film theorists seem incapable of accounting for the notion of the cinema's "indexical" link to the world, and are happy merely to say that it has finally been "severed" by the digital. But this is to beg the question. Through its mobilization of this concept, film studies and film theory is in fact merely replicating the disingenuous critical dichotomy of *The Matrix*, rather than investigating the terms of that

dichotomy. It is using indexicality as a ready-made answer, the answer to the question, What has changed?, rather than as the means for actually investigating the perpetually transformative contexts of cinematic representation. The more crucial question is what remains, what claims may the cinema still make, what may the cinema still designate? What powers remain in the cinema's possession? Beneath this is another question, about film theory's desire for the severing of the cinema's ostensibly indexical link to the world, whereby the persistent question of the relationship between film and the world, cinema and reality, is sidestepped, and the related questions of meaning, interpretation and representation, are effectively avoided. We have begun with the relatively optimistic, and in many ways very useful, account of the future of film theory offered by David Rodowick, who suggests that many of the most significant issues of film theory persist in the digital age, but who nevertheless insists that at the most fundamental level the cinema has undergone a dramatic and permanent transformation, and that what we had known as cinema no longer exists. This is a claim that is widely asserted, accompanied by the broader claim for a radical loss that has accompanied the end of the traditional cinema and the dawning of the digital age.

The Fate of the Real

We are experiencing what Wheeler Winston Dixon describes as the "reconfiguration of the moving image," and with it the "digital replacement of the real" (*Transparency* 183). Dixon has exhaustively chronicled what he describes as the "crisis" of the moving image, which has as its primary source the introduction of digital technology into the cinema. "So it's a revolution," he wrote somewhat conspiratorially in

1996, “digital effects have taken over.” We have entered, Dixon argues, the “digital domain,” “the zone of the eternally hyperreal” (“Digital Domain” 61, 64).³³ Sean Cubitt, in his introduction to a special issue of *Screen*, dedicated as well to the question of the digital, describes the cinema as “a system of representation in crisis,” a crisis represented most explicitly in the Hollywood special-effects film, which he describes as producing a “technological sublime,” which he opposes to representation (130). In his recent book-length study of computer-generated imagery, *Digital Aesthetics*, Cubitt argues that “the movement towards artifice is also one towards abstraction,” and that “the intensively symbolic nature of digital imaging seems the defining instance of the philosophy of the hyperreal” (35). Cubitt explicitly links recent technological changes with contemporary currents in postmodern philosophy and cultural theory, and insists on the radical difference between the “abstract” and “symbolic” nature of new technologies of representation as opposed to the concrete and literal character of older modes. What has changed, for Cubitt, is the nature of the relationship between representation and world. As Cubitt argues, “the systems of representation employed in videographics must be understood as renditions of machine code in culturally specified forms” (35). As such, they have become increasingly distant from the reality they purport to represent. Cubitt continues, describing the character of digital imagery and computer graphics, derived from numerical and mathematical information – quantities given visual formal qualities – and therefore fatally severed from their objects of representation:

And as visual representations, they belong to an historical dialectic between vision as unmediated and image-making as language. Most of all, the symbolic operations of machine perception are deprived of those central semantic functions of socialized

³³ See also his *Disaster and Memory: Celebrity Culture and the Crisis of Hollywood Cinema*.

communication – *indexicality, reference, articulation, and address* – which might provide them with location which otherwise they cannot achieve. (35; emphasis added)

This transition is understood to be most acute in the cinema, where the losses Cubitt describes are having the most direct and potentially disastrous effect, especially in the Hollywood cinema. Without indexicality, without reference, deprived of authentic modes of articulation and address, the cinema is increasingly incapable, it is argued, of fulfilling the basic contract with its audience, of providing imagery that is somehow organically and directly linked to reality, to the real world. On the basis of such distinctions, Dixon has passionately made the case against the “hypercooked, intensely calculated, computer-generated non-reality currently being offered by Hollywood,” which he contrasts with a more genuine cinema of a pre-digital Hollywood, and with what he describes as the “humanist rawness” of contemporary cinemas that have so far resisted the lure of the digital, specifically Iranian, Middle Eastern and African cinemas. By contrast, he argues:

The American cinema, with its new reliance on the artificial as hyperreal, seems to be ineluctably suggesting that the ‘real’ no longer satisfies audience expectations of ‘spectacle.’ Places, persons, and objects directly photographed and reproduced have lost their power to convince us of their phantom reality. [...] As with enunciated special effects sequences, the actual in the classical Hollywood cinema is no longer “actual” enough, because we are directly aware that we are witnessing only an illusion, an unspooling of light on to the screen. (*Transparency* 44).

Such claims seem surprising, if not downright incoherent, after, as I say, three decades of sustained demonstration of the cinema’s conventionality, of the adamant *rejection* of ontological explanations of the cinematic phenomenon, after the putative victory of the conventionalist position over the various strains of realism that had characterized film theory before the late 1960s. Following such a triumph, which had seemed to completely put to rest the notion that the cinema’s images were at all truthful,

it is surprising that there is such a rush now to declare the link between the film image and the world to be finally severed by the process of digitization. This, though, is the basic argument offered in virtually every account of digital cinema. In an introductory section of his book on the impact of digital technologies entitled “The Unreliability of the Manufactured Image,” Dixon insists that “it is impossible to overstate the impact, both in terms of image production and image reception, of digital special effects (and the use of digital production method as a kind of overall ‘finishing process’ for filmmaking as a general practice), which have effectively, (and surreptitiously) changed the language of what we have come to know as ‘motion pictures’” (22). The very phrase “motion pictures,” he argues, has become effectively antiquated, referring to a process that has been, or will quickly be, completely superseded. The term now, he insists, only “conjures up images of Georges Melies [sic] or Augustin Le Prince patiently hand-cranking their wooden box cameras to expose frame after frame (or plate after plate) of conventional photographic film, essentially engaged in the process of recording what is seen, that which exists” (22).

With the loss of the photographic, that is, there is the simultaneous loss of the link to the real world, the loss of the sort of contact we once had to the visually perceivable world, a contact that the cinema was uniquely capable of reproducing, allowing us to see again what had once been “seen” by the camera. The cinema, that is, had been capable of reproducing the very human act of perception, and had, therefore, a profound significance. What is now offered under the name “motion pictures” lacks that significance, argues Dixon, as a result of the destruction of the perceptual capacities of the traditional cinema. What we are presented with now, as viewers, is a wholly

fabricated spectacle that not only offers a simulation of reality, but which confounds the very categories of real and artificial:

Gradually introduced over the last five years, digital special effects have transformed the landscape of the visual in film, transporting the viewer seamlessly beyond that which is real into a synthetic world where computer animation, morphing, and digital effects blend the actual with the fantastic. Perhaps one of the most disturbing aspects of the new wave of digital effects films is that they do not seem – at first glance – to contain any effects at all. (22)

Citing such films as Jan de Bont's *Twister* and Brian de Palma's *Mission: Impossible*, both from 1996, and more significantly Robert Zemeckis' *Forrest Gump* (1994), Dixon argues that the most insidious thing about them is that they seem still to offer an authentically photographic representation of the world. Yet they in fact "rely almost entirely on computer generated imagery to seduce their audiences into entering into the constructed reality of the spectacles they present" (23). This, for Dixon, is the crux of the matter, and suggests the degree to which these specifically technological developments have cultural, social and political consequences. In so far as the audience has, or had, an abiding faith in the fundamental reality of the images offered by the cinema, such faith is now abused. The cinema, specifically the Hollywood cinema, has effectively fulfilled the audience's suspicions about the illusory character of motion pictures, and put in jeopardy the future of an authentic, personal cinema. Too willing to quickly embrace the new technology, Hollywood has both capitalized on and accelerated the loss of faith in the power of imagery in its wholesale destruction of the "photographic."

The cinema's effectiveness, its capacity to be a site of meaning for viewers, is what is being put in jeopardy, according to Dixon. It offers now only emaciated imagery, simulated photographs that have been made bereft, severed from the world they once

participated in, mere “spectacle without substance” (183). The Hollywood cinema, intimating the fate of the cinema generally, offers a spectacle that only *seems* to have substance. While its creativity now seems limitless it is in fact more limited than ever before. “Even as we are delighted,” explains Dixon, “with the lack of limitations afforded us, as spectators, by the generation of digitally created imagery, as we are offered more, we take away less” (183). In a universe of only apparent plenitude, to pursue Dixon’s metaphors of quantity, the human needs of the audience cannot be sustained. “Since everything is possible, nothing is surprising. Astonishment pales before a mechanism which reveals, ultimately, nothing so much as the poverty of our collective imagination” (183). Dixon concludes with a clarion call, describing the kinds of images he prefers, and which he thinks are exclusively capable of enriching and nourishing our “collective imagination.”

For the choice is clear: we must create a communal spectacle in which all may participate, composed of images that speak to us personally, *without mediation*, images that we are required to interpret and reconstruct entirely for ourselves; or we become passive viewers at the service of a narcotizing series of images that seek to control and pacify our emotions, reducing our lives to an extension of the visions we see within the domain of the televisual, rather than apportioning the production of spectacle a small segment of our corporeal consciousness. (186; emphasis added)

“Such hyperdigital extravaganzas as *Titanic* (1997), *Starship Troopers* (1997), and *Armageddon* (1998),” though, concludes Dixon, “leave little doubt that the age of fully realized digital special effects is upon us, creating a fictive world so seamlessly seductive that the viewer can no longer discern where traditional image capture ends and the computer takes over, to create a final series of hyperreal glyphs which are then sequentially projected on the cinema screen” (*Second Century* 9).

Cubitt has pursued a similar line of argument, in explicitly more philosophical and aesthetic terms, revealing the full scope of the dire consequences of new digital

technologies. “In the cinema of special effects,” he writes, “the matter of the communication is [...] not an external referent but the relationship instigated between the film and the viewer” (“Introduction 126). Describing this further, Cubitt argues that, “[s]pectacle, abandoning duration along with any sense of loss, ephemerality or beauty, in their place establishes the punctual and fulfilled moment outside time, so cutting the Gordian knot of representation” (128). What the digital cinema produces, that is, are not representations, which must, according to Cubitt’s implicit definition, *refer* to something, but rather pure illusions, whose referents are internal:

[T]he sublime effect, in transcending the medium through the medium’s own resources, has the appearance of speaking the ineffable. In this way it circumscribes its own sublimity, identifying the boundary of communication with the technical limits of mediation. The mimesis of the end of communication is not representational but illusionistic, in that the medium exceeds itself in depicting the invisible. (129)

The implication, of course, is that what the cinema had traditionally had as its task was the representation of the *visible*. Special effects, which have existed as long as the cinema has, have always been at odds with this fundamental task, yet the implication is that there had always been a distinction between the visible and the invisible, the “photograph” and the “effect,” that could be maintained. With the advent of digital effects, which suffuse the entire film, the distinction between sublime effect, or illusion, and photographic representation is no longer tenable. Cubitt links the digital image with the history of Baroque *trompe l’oeil*, which, he argues, “seeks not to trick,” as its name suggests, “but to be discovered in the act of trickery” (127). What the *trompe l’oeil* image, and its latest version, the digital image, “seeks to communicate is not the referent of its play of light – which in any case is ineffable – but the spectacle of the image itself. In this sense,” he continues, “representation is itself the most special of special effects, and, as Lev Manovich argues, is at best a *special case* in a history of animated imaging

for which the photographic has been merely a brief historical detour” (127; emphasis added).

Cubitt has pursued these issues at even further length in *Digital Aesthetics*, where the photographic is more carefully defined, in order to distinguish it from what has superseded it. The digital image, Cubitt argues, has an “intensively symbolic nature” (*Digital Aesthetics* 33). He traces its history to the development of Boolean algebra, and through modern symbolic logic and computer science, which allowed “technologists” to come as “close as possible to a perfect objects language, which, by emptying formal propositions of interpretable meanings, renders them manipulable” (33). The mathematical logic of Boole, Claude Shannon, and others, he argues, created the possibility of producing representations whose purity and perfection were the result of their needing as little external reference as possible, of their elaboration within an almost purely self-referential context. What Cubitt is describing, essentially, is the increasingly abstract nature of information and representation, derived from their being produced by reference not (or less and less) to the structures of the real world but rather to logical and symbolic protocols. As Cubitt insists, “the movement towards artifice is also one towards abstraction” (32), towards, that is, formal purity, and away from rough analogy, from correspondence with actual external referents. This does not mean, however, indeed, it cannot mean, that the “purely” logical representation has no relation to the external world, only that it is a different, more attenuated one. “If the very purity of [a formal system’s] symbols leaves it beyond the realm of experience, it has the virtue [...] that by marshalling natural language statements in pragmatically formalized symbols, it maintains the system as indefinitely extensible” (33).

Cubitt's prose is, on occasion, rather infelicitous, but the point that can be gleaned here, assuming that he is pursuing the semantic notion of *extension*, is that as a system becomes more formal and logical its relationship to the actual world becomes increasingly removed, and that the meanings of its representations are produced through a logical contextual structure – through reference mainly, that is, to the other elements of the system, rather than to real existents. Cubitt formulates the distinction: “In this sense, the logic architectures of computers are not out of touch with the real world, but, in processing it to a towering level of formality, refer to it less through indexical figuration than through the index, the catalogue, the structure of knowledge” (33). Cubitt's recourse here to the notion of indexicality functions to make a clear distinction between what he sees as two kinds of reference, two kinds of representation, and it is to the question of indexicality that Cubitt argues one must turn in order to answer the question of what has changed in the digital image. “Theories of representation,” he insists, “find themselves caught on the crux of the index, the term used for those signs which designate – like a pointing index finger – a particular reality, as smoke designates fire, or a photo designates the person it pictures” (59). On the basis of this definition of indexicality Cubitt may describe what precisely differentiates the analogical, indexical representations of photography and the digital, symbolic constructions of the computer, arguing that computer-generated images or “the symbolic operations of machine perception are deprived of those central semantic functions of socialized communication – indexicality, reference, articulation and address – which might provide them with the location which otherwise they cannot achieve” (35).

They do not refer us, that is, to “a particular reality,” to a location, a real place, other than the virtual space of the logical semantic structure. Cubitt’s argument is, as his title proclaims, an aesthetic one, and he proposes the means by which computer graphics may be represented in a manner that is more faithful to their logical nature, arguing that we have “created HCIs [human computer interfaces] articulated only with a normative visual culture, crushing machine perceptions into conformity with a narrow definition of ours,” and that “we have denied our computers the use of the shifters (here, now, you, we...) that might transform their servitude into partnership” (35). The terms by which we might achieve this rather romantic vision, by producing a greater correspondence between human and machine perception, is presented by Cubitt over the course of his book, and it is not our specific concern here. What is of interest is the fate Cubitt sees for the cinema, which had, presumably, been capable of referring to an existence outside of the immediate field of the viewers perception, to a “particular reality,” but which now, absorbed into the logic of machine vision, can only produce a solipsistic illusion. “Indeed,” he observes, “films have suffered [...] from the arrival of CGI [computer generated imagery], as they turn from narrative forms that intrigue and inveigle into spectacles that engulf and bludgeon. This means, not that we are subjected to technologies of vision, but, far worse, that we are subjects only of ourselves, mediated through machineries downgraded to mere feedback loops” (36).

The Residue of Reality

Such a state is in contrast to the longstanding sense that there had at least been a certain *residuum* of reality in the cinema, which had been more or less accepted in most

theoretical accounts of the cinema, if only implicitly. Despite theoretical emphases on the conventional character of cinematic representation, it seemed nevertheless to produce something very much like a direct, perceptual experience, to reproduce the basic gestures of looking and seeing, producing an experience that was difficult to distinguish from natural perception. This aspect of the cinematic experience seemed to exceed the theoretical models that were being elaborated. Some other means was required to account for these aspects, for the problem as articulated, for instance, by Bill Nichols, who, in his *Ideology and the Image*, noted significantly that “the cinema is a strongly representational art: it presents us with recognizable figures or objects whose lifelikeness is sometimes uncanny” (10). Yet such lifelikeness had to be explicable in strictly semiological or “textual” terms, and Nichols was concerned to demonstrate that “the similarity of text to reality does not just happen: it involves the work of codes” (11). A strict application of the semiological terms of analysis, though, was insufficient, even awkward, belying or even obscuring the specific qualities of the cinematic effect, prompting critiques of and challenges to structuralist film theory. Structuralist theory itself had, more generally, to find the means of accounting for such non-linguistic phenomena, leading to such efforts as Eco’s theory of sign *production*, whereby he sought to exclude from semiotic purview anything that did not conform to a cultural analysis of sign function, use and production. Significantly, he was obliged to expel all notions of reference from his considerations, in order to produce a comprehensively *cultural* account of semiotic activity.

Yet the problem of the cinema persisted, maintained precisely as a problem of reference, which Nichols explicitly acknowledges, and he immediately attends to the

problem of reference in the cinema. While insisting upon the “coded” nature of cinematic representation, he argues that the cinema’s codes are different from linguistic codes, from the “arbitrary signs of verbal language”; the photographic imagery that underlies the cinema, he admits, “bears a relationship of resemblance to its referent, to the thing photographed” (11). In order, then, to account for the “uncanny” capacities of the cinema, Nichols turns explicitly to a key element of Peirce’s model of the sign, which seemed to offer a fuller or more multi-faceted taxonomy of signs, or codes, with which the cinema’s effects may be described and explained:

When a sign resembles what it refers to – as a picture of a chair does a physical chair or a portrait of a couple embracing tenderly does love – the sign is motivated, analogical, or iconic. More specifically, if a sign enjoys an existential bond to its referent such that the referent determines its appearance in some way, the sign is called indexical. [...] The point-for-point correspondence of light intensity between referent and photographic image testifies to an indexical aspect in the photographic sign, for example. By contrast, the word *chair* is called an unmotivated, arbitrary or digital sign since it bears no resemblance to the appearance of an actual chair. Hence the apparent act of duplication of mechanical reproduction of everyday reality in the cinema depends upon the work of specific codes characterized by iconic and indexical signs. It is not reality up there on the silver screen but iconic signs that represent reality. (11)

By 1981, when Nichols wrote this, the icon/index/symbol trichotomy had become familiar and recognizable within film theory, accepted as a simple and elegant solution to the problem of cinematic coding. Film theory required the means to account for what so obviously characterized cinematic representation. As Winfried Nöth observes, the fact of motivation in the cinema was unavoidable, and demanded explanation. Even Christian Metz had acknowledged that “cinematographic signification is always more or less motivated, never arbitrary” (*Film Language* 108). The problem for film semiology, admits Metz, lay precisely in its dependence upon linguistic methods. “Consequently wherever the language of cinematography differs from language itself, film semiology encounters its greatest problems” (108). Metz, though, utilizing explicitly linguistic

methods – “the film semiologist”, he says, “tends, naturally, to approach his subject with methods derived from linguistics” (108) – is forced to describe the arrangement of elements in the cinema that, on their own, are wholly motivated, but which, when taken in combination, become “partially arbitrary,” as a sort of pale reflection, or attenuated version, of the complete arbitrariness of linguistic expression. Metz had not been able to reject the idea of motivation, as Eco had endeavored to do, but had only been able to reduce its extent, or to subordinate it to the otherwise arbitrary principles of cinematographic organization and regulation. Even in the attenuated form that Metz offers, motivation or “analogy” are still dangerous concepts. “The concept of analogy,” warns Metz, “must [...] be handled with caution. It is true that, for an actual semiotics of the cinema, analogy serves as a stopping block: Wherever analogy takes over filmic signification (that is, notably the meaning of each visual element taken separately), there is a lack of specifically cinematographic codification” (108-9). For Metz, though, it is important that a semiotics of the cinema must ultimately overcome the notion of a pure, self-sustaining analogy, and he has recourse to the denotation-connotation distinction, by which he may describe the ultimately connotative character of even so-called analogy, so that “the analogous portions of filmic signification would not constitute a point of stopping off,” explaining that:

many things that are assumed to be “acquired” by the film analyst and therefore are a kind of absolute beginning *after which* the cinematographic experience unfolds, are in turn the complex, terminal products of *other* cultural experiences and various organizations whose field of action, being more general, includes a great deal more than the cinema alone. (111; emphasis in original)³⁴

³⁴ “Motivation,” Metz explains, “occurs on two levels: on that of the relationship between the denotative signifiers and significates, and that of the relations between the connotative signifiers and significates” (108). While the cinema, as a mechanical mode of recording, producing a “perceptual similarity between the signifier and the significate,” producing visual and auditory “analogies.” “Connotative meanings,” he continues, “are motivated, too, in the cinema. But in this case the motivation is not necessarily based on a

Metz pursues the source of what pass for “analogous” representation in the cinema, in prior conventional cultural elaborations, which produce the effect of a kind of naturalness when such signs are met in the cinema:

Among the codes that are extracinematographic by nature, but that nevertheless intervene on the screen under cover of analogy, one must point out as a minimum – without prejudice to more complex and sensitive enumerations – the *iconology* specific to each sociocultural group producing or viewing the film (the more or less institutionalized modalities of object representation, the processes of recognition and *identification* of objects in their visual or audative “reproduction,” and, more generally, the collective notions of what an image is), and, on the other hand, up to a certain point, *perception* itself (visual habits of identification and construction of forms and figures, the spatial representations peculiar to each culture, various auditory structures, and so on). (111; emphasis in original)

Such processes of enculturation, of the elaboration of modes or routines of recognition, identification and even perception, are presented by Metz as underpinning those representations that have assumed an apparently natural status. “Characteristically,” he argues, “codes of this type function, so to speak, at the heart of analogy and are experienced by the viewers as a part of the most ordinary and natural visual or auditory decipherment,” adding that, “it does not seem at all impossible, today, to assume that *analogy is itself coded* [...] (111; emphasis in original.)³⁵

This principle of “partial arbitrariness,” and coding “at the heart” of apparently motivated and analogous signs, is given more specific shape through the importation and use of the concepts of the iconic and indexical codes, or signs, which, while understood as “motivated,” are also, and at the same time, necessarily “signs.” As Gianfranco Bettetini argues, insisting upon a kind of partialness, “the iconic motivation [of the cinematographic sign] is *almost complete*, because the sign is constructed around the

relationship of perceptual analogy,” insisting that “cinematographic connotation is always symbolic in nature” (108).

³⁵ Metz is explicitly emending his position as presented in “Cinéma: langue ou langage?”

object in a deeply analogical relationship” (Qtd. in Nöth, *Handbook* 467.³⁶ Bettetini was among the first film theorists to respond to Metz’s account of the cinema, and, as Francesco Casetti notes, he “is in agreement with both of Metz’s ‘proofs’ of the fact that the cinema does not correspond to a language system” (135). In his further elaborations, Bettetini makes explicit reference to Peirce, and develops the notion of the “iconeme,” which, as Casetti explains, corresponds to the way speech is articulated into sentences, more than into words” (135). Such iconic semes are organized in the cinema to produce meaningful cinematic “statements.” Casetti describes Bettetini’s use of Peirce more generally, noting that he “distinguishes between a realism that is dominantly iconic, which focuses only on the reproduction of physical outlines, and a realism that is dominantly indexical, which tries to ‘get in tune’ with the world” (1401). The idea of an “encoded” iconicity and indexicality, a “partial” arbitrariness, was offered by a variety of other theorists in various forms, including the German film semiologists who comprised the Stuttgart School,³⁷ and by Jan-Marie Peters, who had been endeavoring for years to define and describe a *Filmsprache*, or film speech, and who explicitly employs the terms icon and index in order to describe and assimilate those elements of cinematic representation that seem to exceed linguistic or semiological analysis, while insisting nevertheless that we necessarily “read” a film, which must still be thought of as effectively a “language.”³⁸ In James Monaco’s famous guide to “reading” films, he also

³⁶ See Bettetini (186).

³⁷ See Hoensch.

³⁸ See Peters, *Pictorial Signs and the Language of Film*. Peters had already broached the question of a “*Filmsprache*,” or film speech in 1962, in which the very notion of speech is shown to need expanding in order to accommodate phenomena such as the cinema. “Ob wir von einer *Filmsprache* sprechen dürfen, hängt in erster Linie ab von der Antwort auf die Frage, was wir unter «sprache» verstehen wollen.” (Whether we may speak about “film speech” depends in the first instance upon the answer to the question of what we understand by “speech.”) If it remains a purely linguistic concept, he argues, then any

makes explicit reference to the concepts of the icon and the index, construed as form of encoding comparable to linguistic encoding, making the filmic text “readable” (133-44).

The icon/index/symbol distinction has been codified in the discipline of film semiotics, offered as an entry in Robert Stam *et al.*'s lexicon. They credit Peirce with what they call a “major contribution to semiotics,” namely “his tripartite classification of the kinds of signs available to human consciousness into icons, indices and symbols” (5). They then offer definitions of the three signs. The iconic sign, they explain, “represents its object by means of similarity or resemblance; the relationship between sign and interpretant is mainly one of likeness, as in the case of portraits, diagrams, statues, and on an aural level, onomatopoeic words” (5), a definition adduced from a rather enigmatic passage from Peirce, which they quote, describing the icon as “a sign determined by its Dynamic object by virtue of its own internal nature” (5). Peirce is quoted, describing the index as a “sign determined by its Dynamic object by virtue of being in a real relation to it” (5). Finally, there is the symbolic sign, which “involves an entirely conventional link between sign and interpretant, as is the case in the majority of the words forming part of ‘natural languages.’ Linguistic signs, that is to say, are symbols in that they represent objects only by linguistic convention” (5).

Stam *et al.* are sensitive to certain aspects that distinguish the Peircean concepts, and note that the distinctions between these sign types is not as rigid as this might suggest, a fact alluded to by the example of the onomatopoeic word. “Although a language like English is largely composed of conventional symbols,” write Stam *et al.*, “onomatopoeic words like ‘buzz’ and ‘hiss’ display an iconic dimension in that they

discussion about the “Sprachcharakter” of film is meaningless. See Jan-Marie Peters, “Die Struktur der Filmsprache,” in Albersmeier (371).

function through resemblance between the actual sounds and the sounds of the phonemes evoking the sounds. Non-phonetic languages based on hieroglyphs or ideograms mingle the iconic with the symbolic to a much higher degree” (6). Once one begins to take such hybrid examples into account, the categories become considerably more fluid, even more dynamic, and their explanatory power becomes greatly enlarged. Signs need not – indeed *should* not – be merely relegated to one or the other of the three categories. Each of the three signs types can also display specific dimensions of the others and, as Stam et al. insist, “[t]he three types of signs are not mutually exclusive” (6). Photographic signs, for instance, are primarily iconic, but they can also display indexical or symbolic aspects. They are iconic “in that they function through resemblance, but indexical in their causal, existential – Bazin would say ‘ontological’ – link between the pro-filmic event and the photographic representation” (6).

Stam *et al.* insist that, “[o]ne must assume a certain relativity [...] in defining signs as forming part of one category or another” (6). This is not, however, as they are careful to insist, a weakness in Peirce’s system. It is precisely this relativity, in fact, that provides the categories with their explanatory power, by emphasizing the transformation in the semiotic value of objects that is effected by the shifting of perspective. Semiotics, then, is not the description merely of signs, but is rather, as Stam *et al.* emphasize, the analysis of “the production of meaning” (5). The signs described assume their real value when they are understood to function within “the *process* of semiosis” (5). The active, procedural, and productive qualities of semiosis are suggested in Peirce’s famous definition of the sign, which Stam *et al.* quote: “something which stands to somebody for something in some respects or capacity” (5). Not only, they argue, does this emphasize

the functional quality of the sign, but it is a far more catholic notion, allowing one to move beyond the strictly communicational model of Saussurean semiology, which, as they rightly point out, limits semiotics to the particular context of direct human communication, envisioning “the sign as a communicative device taking place between two human beings intentionally aiming to express or communicate [sic]” (5). What Peirce’s model of semiosis avoids, then, is Saussure’s “implicit mentalism,” by, and here they quote Eco, from whom they effectively derive their account, “not demanding [...] the qualities of being intentionally emitted or artificially produced” (5).³⁹

Their account corresponds, for the most part, to Eco’s account of sign functions, and although they directly quote Peirce, it is Eco’s far more limited notion of functionality, according to which they elaborate the concepts of icon/index/symbol, which function as additions or emendations to the essentially Saussurean outlook of their lexicon, and their history of semiotics. Their incorporation of the Peircean distinction, however, derives more directly from an earlier and, from the point of view of film theory, even more significant account of the value of Peirce’s distinction. It was Peter Wollen who provided the most exhaustive consideration of iconic and indexical signs in the cinema, and it his account that ensured their continued use and relevance in film theory, whereas Eco, as Stam *et al.* fail to acknowledge, sought to *get rid* of the icon and the index. The incorporation of the trichotomy into their otherwise Saussurean account corresponds more directly to Wollen’s account of Peirce, which he offers as the source of a more “flexible” sign model. Wollen’s account, in his widely read book *Signs and Meaning in the Cinema*, has been very influential, and has determined most subsequent

³⁹ See Eco, *Theory of Semiotics* 15.

uses of the concepts of iconicity and indexicality in film theory.⁴⁰ Born from a genuine dissatisfaction with the Saussurean concept of the sign when applied to the cinema, Wollen's account nevertheless gives significantly short-shrift to Peirce's semeiotic, which he effectively reduces to the terms of a Saussurean semiology. What Peirce allows Wollen to add is a certain relativity to the notion of the sign, without accounting for or recognizing the fundamental incompatibility of the Peircean and Saussurean traditions. Moreover, Wollen established the possibility of understanding indexicality as a *dispensable* aspect of cinematic signification, by reducing it to effectively stylistic or aesthetic terms, against Peirce's broader account of the indispensability of indexicality, understood as a manifestation of a basic phenomenological category.

Wollen's book was designed as an introduction to recent trends and developments in film theory, and as an explanation of the intellectual currents and traditions that were informing the further development of film theory. Wollen was offering an account of the state of the art, of the present condition of film theory, while at the same time urging film theorists to broaden their view, to avail themselves of the rich traditions of thought on art and communication as they continued to elaborate theories of the cinema. Wollen champions those who had endeavored to bring some order, and some precision, to the study of the cinema, and he presents contemporary developments, specifically the emergence of a Saussurean semiology of the cinema, as a welcome antidote to what had for too long been a vague and undirected enterprise. Film criticism, and film theory, required a clear and rigorous program, which semiology seemed to offer. Yet Wollen also immediately saw the limits of semiology when applied to a phenomenon as complex and

⁴⁰ See Wollen, *Signs and Meaning in the Cinema*, 3rd ed.. Originally published in 1969, the book was very popular, and was quickly revised and enlarged, with a third edition released already by 1972.

heterogeneous as the cinema, which comprised many different modes or registers. Consisting of words, texts, sounds and, perhaps most significantly, images, the cinema seemed to exceed the essentially linguistic analysis of semiology. The visual aspects of the cinema were forced to conform to the linguistic analyses of semiology, premised upon the notion of the conventional, arbitrary sign. It was in response to the shortcomings of semiology that Wollen had recourse to Peirce, who, he says, provided semiology with “the groundwork necessary for further precision,” the basis for “a more precise discussion of what we mean by a ‘natural sign’ and by the series of words such as ‘analogous’, ‘continuous’, ‘motivated’, which are used to describe such signs by Barthes, Metz and others” (120). Wollen saw in Peirce the means to resist the “desperate conclusion” of Roland Barthes, who, in an effort to find the means of accounting for apparently motivated or ‘natural’ signs, had reversed the traditional hierarchy proposed by Saussure – for whom “language is only one particular semiological system” – arguing instead that semiology be understood as a branch of linguistics. Peirce also seemed to provide an antidote to the unsustainable conclusion of Christian Metz, who was forced to describe the cinema as “a language without a code (without a *langue*, to use Saussure’s term)” (120). Neither of these, as far as Wollen is concerned, seemed to solve the problems of semiology when applied to non-linguistic phenomena, nor did they answer the question of *how* the cinema was capable of expression. Rather, they simply set the question aside, by merely avoiding the vexing issue of natural or motivated signs, or relying upon vague notions of implication or connotation, which did not explain how the cinematic sign in fact functioned as a mode of expression. The answer, Wollen argued, was to be found instead in what he presents as the more developed “semiology” of

Charles Peirce. Wollen's emendations, however, would prove only temporary, as the problem of reference continued to linger in film theory, until it seemed finally to be resolved by the violent incursion of digital technology, which is understood to have destroyed what had come to be called "indexicality" in the cinema.

Digitization and the End of Indexicality

As an answer to the problem of those elements of cinematic representation, Wollen's account was influential, and widely referred to and utilized. Wollen's presentation of the concepts Peircean concepts of icon and index functioned as a solution to the problems that structuralist film theory had faced. The "indexical sign," as described by Nichols, inherited from Wollen, describes the referential capacity that the cinema seemed to possess, against strictly semiological analyses. The photographic and cinematic image, as he says, "enjoys an existential bond to its referent," belying what he also describes as the merely "*apparent* act of duplication of mechanical reproduction of everyday reality in the cinema" (11). If it is only "apparent," then what, precisely, is the nature of the "existential bond" exhibited by the photograph? How is such a mechanically and photo-chemically generated reference to be fully incorporated into an effectively non-referential semiology of the cinema? The problem would persist, only partially resolved by the idea of an indexical sign, as elaborated by Wollen, which seemed to imply some sort of direct reference to an independent, external reality, the presence of which had determined and generated the images of the cinema, suggesting that it is, indeed, "reality" up there on the silver screen, but at the same time to reduce such reference to the status of a code.

A more comprehensive solution, though, was soon to be forthcoming. Not, though, as the result of any determined theoretical effort, but rather as a result of the cinema's own technological development, as it came to replace the traditional structures of mechanical and photo-chemical reproduction with the techniques of digital fabrication and simulation, as Nichols himself was quick to note, in his *Representing Reality*, describing the semiological effect of such a transformation. "Digital sampling techniques," he was to write ten years later, "whereby an image is constituted by digital bits that are subject to infinite modification, renders [the] argument for the unique, indexical nature of the photographic image obsolete" (268, n. 2). Nichols immediately sees, too, the potential consequences of such a development, which dramatically transforms the epistemological and even ontological status of the photographic and cinematographic image. "The image," he says, "becomes a series of bits, a pattern of yes/no choices registered within a computer's memory. [...] Any images," he explains, "that can be generated from these bits of information occupy exactly the same status. There is no original negative image as there is in photography against which all prints can be compared for accuracy and authenticity. *There may not even be an external referent*" (268, n. 2; emphasis added). This raises significant issues, as Nichols implies. "Computer graphics," he notes, "can generate highly realistic renderings of real-life subjects from software algorithms rather than external referents" (268, n. 2). The consequences of such changes, the complete loss of any vestigial referentiality in the cinema, are presented by Nichols as necessarily and obviously significant and wide-reaching, to which he can only allude. "The implication of all this are only beginning to be grasped" (268, n. 2). They do, though, for Nichols, clearly mark a limit or even propose an end to at least a certain

period in the history of the cinema. These implications, he insists, “clearly set a historical framework around the discussion presented in this book, which continues to emphasize the qualities and properties of the photographic image” (268, n. 2).

In the decade following Nichols’ suggestion of the profound impact of digitization, there has been a veritable explosion in the literature on the subject, which has almost comprehensively accepted the end of any sort of external referentiality for the cinema, the end, as Rodowick insists, to the cinema’s very capacity to *designate*, for the cinema to refer at all to anything other than its own means of production, to anything other than its status as simulator. The consensus is that the cinema has now lost its referential capacities, that it has had its indexical status destroyed. It may even be, it is suggested, that, with the end of the traditional cinema, replaced by another, digital cinema, we may even have seen the end of indexicality itself. The cinema, and photography, underlying the cinema, viewed retrospectively from our post-digital position, seems, after all, to have possessed a real and viable referential function, but it seems to have finally been relieved of such a function, which it may, moreover, have exclusively possessed. As Lev Manovich has insisted, the cinema’s “regime of visual realism, the result of automatically recording visual reality, was only an exception, an isolated accident in the history of visual representation” (*Language* 307-8). Such a statement, though, depends upon a too limited notion of reference, and misconstrues the notion of indexicality as only describing reference to objects of experience, when, for Peirce, indices function even in the most abstract realms of thought and representation. Reconceived as such, through a closer reading of Peirce’s semeiotic, reference,

designation – indexicality – must be acknowledged as an indispensable and essential part of every instance of representation and signification, even digital cinema.

This argument, though, for the end of indexicality, destroyed by digitization, has become increasingly common, and is presented in a rather acute form by Peter Lunenfeld, who links indexicality with the specific elements of photographic representation, arguing for “a radical rupture between the photochemical processes and the new electronic imaging technologies,” resulting in a “breakdown of the indexical relationship between the photograph and its object [which] is of obvious importance to the epistemology of the post-modern, and of even greater concern to the politics of an image saturated culture” (93, 95). Lunenfeld even goes so far as to argue that indexicality itself was a relatively new semiotic category, one that had come into existence, or fully so, only with the development of photography, and only achieved significance with the arrival of the cinema. Semiotics itself, what he describes as a “science of signs,” could only be initiated, he argues, “after technology adds a new dimension to the signscape of the symbolic representations of literature and the iconic representations of painting” (95).

Lunenfeld quotes Peirce’s citation of photographs as exemplary indexical signs, which are so, Peirce says, “because we know that in certain respects they are exactly like the objects that they represent [and that] this resemblance is due to the photographs having been produced under such circumstances that they were physically forced to correspond point by point with nature” (95).⁴¹ Confronted by, and on the basis of, such

⁴¹ See Peirce (2.281). (Cited by Lunenfeld as v. II, p. 159.) Peirce’s comments on the photograph are offered in the context of a general discussion of the concept of resemblance or likeness, which he does not limit to the straightforward resemblance between a photograph and its object. “The reasoning of mathematicians,” he argues, “will be found to turn chiefly upon the use of likenesses, which are the very

new technology (Lunenfeld notes the coincidence that the year Peirce was born, 1839, was the same year that photography was “invented”⁴²) Peirce, as well as Saussure, he argues, were able to develop the “science of signs.” “Only after the intrusion of the mechanical photographic apparatus ruptures the dichotomy developed between poetry and painting – between the symbolic and the iconic – is semiotics possible. The mechanical apparatus of photography,” he insists, “vastly expands the realm and the power of the indexical sign” (95). The fate of this sign, though, seems now to be in jeopardy. “What has happened,” he asks, “to this class of signs, and to the semiotics of the image in general, with the advent of *digital* photography?” (95).

This has become the general question at the center of the theoretical investigation of the cinema since the advent of digitization, which sees the fate of a particular sign, the index, to be fatally tied to the development cinematic technology. No one can deny, of course, the effects of new technologies on all aspects the cinema, which is quickly transforming from a film-based medium to an almost entirely digital form. The transformation, though, is far from complete, and for the most part the images that we see on the screen when we go to the movies are still produced through a process that has remained effectively unchanged for the last one hundred years or so. Light is still passed

hinges of the gates of their science. The utility of likenesses to mathematicians consists in their suggesting in a very precise way, new aspects of supposed states of things...” (2.281).

⁴² Beyond the relative insignificance of such a “coincidence,” identifying a certain date upon which photography was invented is dubious, at best. In 1839 Daguerre indeed solved a crucial photographic problem, namely the tendency for prints to darken with time after the initial exposure, which he remedied by treating the image with sodium thiosulfate. But photography had been developing as a technique since at least 1827, when Joseph Nicéphore Niépce fixed an image in a *camera obscura* on a coated pewter plate. See, for example, Fang (70-71). Fang notes that the technology of photography has ancient roots, with the basic mechanics of the *camera obscura* described by Aristotle in the fourth century B.C. The tracing of images produced by the *camera obscura*, in a less automatic but certainly *indexical* fashion, dates back at least to the sixteenth-century. Moreover, while the term “index,” as specifically coined by Peirce, may be relatively recent, although there are references to the concept in the work of other philosophers such as Edmund Husserl, the issues of reference and designation are ancient.

through a celluloid strip, projecting vivid, colorful images, which were originally captured through a traditional photographic process. The optics and the mechanics of filmmaking, the basic science of the cinema, is still fundamentally the same as it was when it emerged at the end of the nineteenth-century, while various sorts of digital additions and elaborations. The very many changes that have taken place in the cinema's history, from the obviously significant additions of sound and color, to the less obvious incremental developments in lens and film quality, in projection technology, theatre design, screen surfaces, and so on, have all built upon the basic mechanical and photochemical nature of the cinema. While the cinema is widely acknowledged, though, to have been in a state of almost constant change, virtually from its first moments, the changes are generally understood to have been of degree rather than of kind, and those elements that defined the cinema, those that were specific to the cinema, are understood to have been maintained.

Recent developments, however, have struck many as more radical and fundamental, and are generally understood to be altering the constitutive aspects of the cinema, jeopardizing just those elements that had provided the cinema with its *photographic* and *indexical* specificity. An increasing amount of imagery that audiences see on the screen is indeed being produced through non-photographic means, created digitally, by computers, and incorporated more or less seamlessly into the photographic whole. These new images seem, intuitively, to be of a rather different order, and are causing some consternation as it becomes increasingly difficult to distinguish between what appear to be two very different kinds of images. While the photograph is produced through a commonly understood method of chemical registration, whereby light, passing

through a lens, leaves an impression upon an emulsified film surface, in what is generally conceived of as a basically *causal* process, a process that offers some minimal guarantees of reliability, veracity and probity, the digital image, by contrast, seems to possess no such causal relation to the object of representation. If there is some basic guarantee of objectivity in the photographic image, the result of the very means of its production, the digital image seems, as is commonly suggested, to be a return to a fundamentally subjective process of image making, akin more to drawing or painting than to the direct and automatic representations produced by the camera.

Films certainly contain more and more imagery that has been digitally altered, and even whole sequences that were never photographed, but were instead created entirely within the computer, but the majority of the images that audiences see on the movie screen are still generated photographically. There are several examples of wholly digital films that have been released in recent years, including *Toy Story* (1995), *Dinosaur* (2000), *Final Fantasy: The Spirits Within* (2001), and *Shreck* (2001), but these tend to be science fiction or fantasy films, which are aimed mainly at children and which do not disguise their artificiality. They are effectively no different from traditionally animated films, and remain within the realm of the cartoon, making no claims of objectivity or photographic reliability,⁴³ and for the purposes of exhibition, moreover,

⁴³ This is perhaps debatable in the case of *Final Fantasy*, which was marketed as the latest, state of the art, digital imagery, promising a photorealistic experience. The promise is made implicitly in its slogan, "Fantasy becomes reality," and in the voice-over for the trailer, which refers explicitly to the film's adventure narrative, but which can be understood to refer to the digital effects. "Nothing you've seen, nothing you've experienced, can prepare you for where the next evolution in reality will take you," a deep, ominous voice warns us. "It is not a fairy tale. It is reality." In the film's marketing material available at its web site, detailed information on the production of computer-generated imagery (CGI) is provided, offering a close-up of the main character's face, with the question, "Is this real?" The film is presented as a breakthrough in the computer simulation of human flesh, hair and movement. "It has long been the CG artist's dream," the text begins, "to take on the challenge to create a superior computer generated human

these films were still printed on traditional film stock and projected. With such films as perhaps the exceptions, which may be categorized as varieties of animated film, still distinguishable from what we experience as “live-action” films, the cinematic experience is still primarily photographic.

Increasingly, though, this technical fact seems less and less important, less and less a guarantee of anything. The specific *value* of the photographic seems to have been destroyed by the sheer presence of digital imagery, depriving the entire film of any sort of objectivity or reliability, of even the minimal sort originally promised by the camera. Unable to make the distinction between images produced photographically and those rendered by computers, the audience can no longer have any faith in the one thing that the cinema had traditionally been able to provide, it can no longer be certain, that is, of at least a basic profilmic reality, of the fact that, at one time, real objects and individuals stood before the camera and participated in the production of their own representations. Such certainty seems in even more dire jeopardy, as the cinema appears to be on the threshold of shedding all vestiges of its photographic heritage, and of becoming an entirely digital phenomenon. “Recent breakthroughs in technology,” reports Rob Sabin in *The New York Times* in late 2000, “have made it possible to capture movies using high-definition video cameras with fidelity akin to 35-millimeter film and to project them digitally in theaters with no loss of image quality” (1). Sabin carefully describes the last of the major obstacles that have been overcome, or are about to be overcome, in the

character, so real, that a distinction cannot be made between its CG images and a live action film.” Here the promise implied in the film’s trailer becomes explicitly linked to the film’s technological capacities. “Get ready to break the boundaries of reality and experience the hyperReal – the apex of CGI technology.” For all its insistence, however, the film has not been able to overcome a still strong sense of artificiality, of animation, and the distinction that it insists has been lost is still, in fact, maintained. The film still feels like a cartoon. See <http://www.finalfantasy.com/>.

complete transformation of the cinema from an analog to a digital medium. The most significant hurdle had been projection, but the new generation of digital projectors are capable of producing an image as clear, bright and detailed as a good quality 35-millimeter film projector, with only a slight loss of contrast that the average film viewer will likely fail to notice, and which will eventually be improved if recent developments are anything to go by. With this, and with high-definition video cameras, digital editing systems such as AVID, and with the development of systems for the high-speed transmission of digital information directly to theatres, the material that had defined the cinema for its entire existence, the filmic substratum that had provided the cinema with both its material identity and its literal and figurative *foundation*, seems about to disappear completely.⁴⁴

Even with the eventual transformation of the cinema into an entirely digital medium, a transformation that does indeed seem relatively certain at this point, this does not seem to me to necessarily imply a parallel transformation at an aesthetic or ontological level. Yet as film theorists have begun contending with the consequences of the introduction of digital imagery, they have typically made recourse to the specific fact of the loss of the filmic in order to distinguish a pre-digital, photographic cinema that is quickly being superseded by an altogether different phenomenon. With what now appears to be the inevitable loss of its specific materiality, the cinema, it is argued, is effectively transformed at a fundamental level. "There is no clear conceptual distinction now," writes Douglas Davis, for instance, "between original and reproduction in virtually any medium

⁴⁴ Still, it is important to insist that the complete disappearance of the filmic materiality of the cinema will be a long and gradual process. As Sabin notes: "Though digital installations could arrive in major markets within a year or two, industry sources say it could take 10 to 15 years, if not longer, to retrofit most of the world's 100,000 to 125,000 screens. So film and digital distribution will likely co-exist for a while" (1).

based in film, electronics, or telecommunications” (381). What had once made the cinema unique is generally considered to have been destroyed. This has quickly become an accepted fact in the discipline of film studies. Virtually all introductory film texts now include some discussion of the impact of digitization, and most agree that the new technology strikes at the very heart of the medium, profoundly transforming it. In the recently published *Oxford Guide to Film Studies*, for example, Laura Kipnis, in her chapter “Film and Changing Technologies” (in the significantly titled section, “Redefining cinema: film in a changing age”), begins on a strong note: “Electronic and digital technologies are having seismic, unsettling effects on the film industry, and film production practices are being transformed on practically a monthly basis. Computers are increasingly affecting every stage of production” (595). One kind of image-making procedure, she argues, which possessed specific values and which had a certain kind of stability, is being replaced by a new mode of production that is inherently unstable, and effectively unreliable. “Traditional filmic processes,” she writes, “are disappearing, replaced by new forms of digital image manipulation” (595). Such changes, she argues, “are spawning complex theoretical questions about the ontological status of the filmic image itself” (596). The source of such ontological unease is the cinema’s loss of the photographic, and the concomitant loss of a specific photographic value. “Can a photograph,” she asks, “be considered evidence of anything in the digital age, and if not, what does this mean – aesthetically, socially, or juridically? [...] The truth status of any given image is anyone’s guess. Or if there is no ‘original’ but only endless perfect digital clones, does this have implications for how value and meaning are assigned or experienced?” (596). From these specifically technological and aesthetic questions, that

is, one is led, perhaps inevitably Kipnis suggests, to larger, more profound questions. “How photographic technologies work and how they make images available to audiences – questions of reception – open onto an array of impossibly large questions about referentiality and indexicality, onto questions about mimesis and realism” (596).

Chapter 4: Cinema and Semiology

If we admit, following the linguistic tradition of Saussure, that the exclusion of the referent is a necessary precondition for every semiotic enterprise, then one has to accept that the index [...] enters into the category of non-sign.

A.J. Greimas and Joseph Courtés
(Qtd. in and trans. by Johansen 108)

The Cinema's End

With the end of the photograph, for so long understood to constitute the cinema, to have provided the cinema with its basic material, the end of the cinema naturally follows. As Anne Friedberg has argued, as a result of digitization, as a result of the dispersal of the cinematic image across the various displays of the new media, “almost all of our assumptions about the cinema have changed: its image is digital, not photographically-based, its screen format is small and not projection-based, its implied interactivity turns the spectator into a ‘user’” (439-40). What had once privileged the cinematic image, its singularity, its unique constitution, is lost once that image is transformed into mere information that may be disseminated across computerized systems of transmission and display. The “chemically-based ‘analog’ images of photography have been displaced by computer-enhanced digital images,” argues Friedberg (440). With the loss of its photographic, “analogical” character, the cinema has lost its particular capacity to refer the viewer to a past reality, offering instead simulations of the past, as it has lost its referential capacity generally. Citing such films as *Nixon*, *JFK*, and *Forrest Gump*, which have “digitally ‘revised’ film footage from the 1960s,” Friedberg speculates that “as the past is dissolved as the real referent and reconstituted by

cinematic images which displace it, Charles Baudelaire's 1859 cynical prophesy about photography's 'loathing for history' meets Fredric Jameson's dystopic symptomology of history's disappearance" (449). While somewhat dire, Friedberg's analysis points towards what she, like Mitchell, sees as the more positive effects of such developments, which force us to approach the question of the representation of history with a greater wariness, with a more critical eye, given the leveling effect of digitization, which has placed all imagery upon the same plane of conventionality. "Now," she concludes, "a variety of screens – long and wide and square, large and small, composed of grains, composed of pixels – compete for our attention without any arguments about hegemony [...]. [O]ur assumptions about 'spectatorship' have lost their theoretical pinions as screens have changed, as have our relations to them" (450).

A newly invigorated critical stance, though, is possible, now that the hegemony of the photograph and the photographically-based image has passed. For Friedberg it is clear that the photograph had always possessed the capacity of distortion and falsehood, which Baudelaire had so adamantly railed against, as a "cheap method for disseminating a loathing for history." Baudelaire, writes Friedberg, "was an early declaimer of the dangerous transformations of history and memory that the photographic image would produce" (451, n. 9). Yet even Baudelaire could not overcome the analogical power of the photographic image, and had ultimately to acknowledge its mysterious ontological power. "Despite photography's 'loathing for history'," writes Friedberg, "Baudelaire also recognized it as a technique that could preserve 'precious things whose form is dissolving and which demand a place in the archives of memory'" (451, n. 9).⁴⁵ While the digital

⁴⁵ See Charles Baudelaire, "The Salon of 1859," in Mayne.

image may be used to fulfill what Friedberg calls “the compelling urge to reprogram popular memory,” distorting the past, and potentially contributing to the “disappearance of history” bemoaned by Frederic Jameson, it is at least amenable to a more comprehensive critique than the photograph, stripped as it is of any analogical, or referential power.

Describing how the analogical has ultimately waned, Friedberg offers a teleology of digitization, which concludes with the transformation of all media, all data, into the homogeneous terms of numerical information, into the abstract quantities of the digital computer. She finds the origins of this tale in the prototypes of both the computer and the cinema, Charles Babbage’s “analytical engine,” and Joseph Plateau’s “phenakistoscope.” “The ‘analytical engine’ turned information into discrete, manipulable units; the phenakistoscope turned images into discrete and manipulable units. The historical coincidence between these two devices only emerges as significant in light of recent technologies of digital imaging and display” (440). With digitization, the image is finally brought comprehensively within the realm of information, stripped of the last vestiges of analogical force that had caused even a critic as vociferous as Charles Baudelaire to pause. Now no more and no less than a code, we have now to acknowledge the comprehensively digital character of all representations, even and perhaps especially those, like photography, and like the cinema, that still seem to be capable of producing such realistic effects. What digitization has done is made it unequivocally clear for the first time that these are nothing more than effects. The mystery of these formerly analogical phenomena has been subjected to a digital debunking. An “era of false innocence” has finally come to an end.

Semiology and the “Referential Fallacy”

Such a false innocence was long the target of a critical semiology, which had as one of its basic goals the removal of all questions of reference, the rejection of any explanation of meaning or significance that had recourse to the “referent.” The main task of an effective “semiotics” was to overcome what Umberto Eco, in his *Theory of Semiotics*, called the “referential fallacy.” For Eco, as for many other conventionalists, the question of the referent, which he acknowledges is of “considerable importance within its proper domain,” did not properly come within the purview of semiotics as he imagined it, which had to be concerned exclusively with an “intensional semantics,” banishing all considerations of extension, and “getting rid” of iconic and indexical signs (58, 59). This was determined explicitly by a “methodological boundary,” delimiting the scope of semiological analysis, of what Eco describes as a “general semiotic theory (3).⁴⁶ Yet there seemed to be more than a simply methodological concern behind Eco’s banishment of questions of reference, and of his more general hostility towards iconic and indexical signs, towards what he saw as the false and misleading assumptions about the analogical nature of such signs, which obscured their actual semiotic functions within a social and cultural sphere, and led instead to regressive accounts, couched in terms of mystery and magic.

⁴⁶ Before proceeding, Eco immediately describes the boundaries of such a general semiotic theory, distinguishing between “political” boundaries, “posited by a purely transitory agreement,” and “natural” boundaries, which are “determined by the very object of the discipline.” Beyond the natural boundaries of semiotics are “the cultural territories in which people do not recognize the underlying existence of codes or, if they do, do not recognize the semiotic nature of those codes, i.e., their ability to generate a continuous production of codes” (5, 6).

In his exhaustive critique of the analogical assumption, Eco refers to the ameliorating effect of computer technology, which can usefully be used to demonstrate the ultimate “digitizability” of all representations, even and especially pictorial representations, demonstrating the “theoretical possibilities of an absolute binary reduction of the code” of the graphic or pictorial (236). Eco refers to “the various experiments in which a scanner is used to decompose and analyze an image into distinctive features, convey them to the computer by means of binary signals, and reproduce them in output through a plotter that draws very complex rasters capable of defining any type of image” (235). Eco sees such experiments as practical manifestations of his theoretical point about the ultimate reduction of all expressive content to the status of code, and foresees a day when such digitization may become ubiquitous, and even more powerfully illustrative. The successes he had seen at the Bell Laboratories and by the Japanese Computer Technique Group already in the 1960s “show that the digital programming of ‘iconic’ signs can by now achieve in future high degrees of sophistication and that a greater sophistication and complexity is merely a question of time and economic means” (236). The value of such successes for his theory cannot be overestimated. “These examples demonstrate,” he insists, “that, even in the case of non-replicable super-signs, there is the possibility of rendering them replicable using mechanical procedures that institute a ‘grammar’ there where was only a ‘text.’ In this sense these experiments provide us with certain challenging suggestions about the nature of *inventions*” (237). More importantly, though, they point to the ultimate “legibility” or “intelligibility” of so-called “analogical” representation, and provide a potent and potentially irrefutable response to proponents of analogical difference:

Every assumption about the analogical nature of “iconic” signs was always based upon (or aiming to support) the notion of the ineffability and the “unspeakability” of those devices that signify through being mysteriously related to their objects. To demonstrate that at least the signals ordered to those sign-functions are open to analytical decomposition does not solve the problem but does eliminate a sort of magic. One could therefore say that the digital approach constitutes a sort of psychological support for the student who wants to further understand the mystery of iconism. When deciphering a secret message one must first be sure that it is indeed a message and that therefore there is an underlying code, to be “abducted” from it; in the same way the knowledge that iconic signals *also* are digitally analyzable can help to promote a further inquiry as to their semiotic nature. (237)⁴⁷

As a brief description of the contemporary discourse on digitization, this passage could not be more suitable. The suspicion that images are indeed “secret messages,” and that they are generated according to the operation of an “underlying code,” has apparently been confirmed by the now ubiquitous digital programming of analogical signs, which has paved the way for “further inquiry as to their semiotic nature.” It is important to note, though, that for Eco such demonstrations were not enough. Certainly valuable as “psychological supports,” they shed considerable light on and seem to confirm key aspects of Eco’s theory, especially on the issues of invention and replicability— how signs may be generated and then reproduced in a variety of communicative contexts. But the explanatory power of such technologies are limited, as he suggests following his consideration of scanning and raster technology: “Unfortunately this digital reduction concerns the possibility of *replicating the expression* using another continuum by a procedure which is not the one used by the artist. It *does not* concern the articulatory nature of the *original* expressive functive” (236). This more fundamental explanation

⁴⁷ “Super-signs” are defined by Eco as “signs whose content is not a content-unit but an entire proposition. [...] In many semiotic systems these super-signs must be considered as strictly coded expression-units susceptible of further combination in order to produce more complex texts. [...] A typical example of super-sign is an ‘iconic’ statement such as a man’s photograph which not only means «person x» but «so and so, smiling, wearing glasses, etc.» (which could be a mere description) or «so and so is walking», which clearly corresponds to a verbal sentence” (231-2). A reduction of such super-signs to their most fundamental elements was central for Eco, in order to be brought within the context of invention and replicability, the two primary engines of sign production.

would have to be elaborated theoretically, according to a general semiotics, comprised of a theory of codes and a theory of sign production, which Eco proposed. Eco's theory is distinguished by the fact that he directly confronts the shortcomings of a structuralist analysis, which had historically had difficulty contending with non-linguistic, especially visual or pictorial, phenomena. But the examples of the digitization of "iconic" imagery encourage Eco to see the possibility of accounting for such phenomena within the conventional terms of semiotic or semiological analysis, which would merely require an unflinching acknowledgement of what properly belongs within the domain of semiotic analysis, and what is to be excluded: "A theory of codes may well disregard the difference between motivated and arbitrary signs, since it is only concerned with the fact that a convention exists which correlates a given expression to a given content, *irrespective of the way in which the correlation is posited and accepted*" (121; emphasis added).

Such an assumption guides most contemporary analyses of new media, and of digitization generally, which is offered as having finally and conclusively sidelined the issue of reference, and conclusively destroyed the distinction between motivated and arbitrary signs. Eco's theory is precisely and specifically based upon a logic of correlation between surface expression and an underlying governing system. He argues that, "When a code apportions the elements of a conveying system to the elements of a conveyed system, the former becomes the expression of the latter and the latter becomes the content of the former. A sign-function arises when an expression is correlated to a content, both the correlated elements being the functives of such a correlation" (48).

A sign-function is realized when two *functives* (expression and content) enter into a mutual correlation; the same function can also enter into another correlation, thus becoming a different funtive and therefore giving rise to a new sign-function. Thus signs

are the provisional result of coding rules which establish *transitory* correlations of elements, each of these elements being entitled to enter – under given coded circumstances – into another correlation and thus form a new sign. (49)

Eco's theory of semiotics is explicitly non-referential, and he was forced to contend with the categories of the icon and the index, which seemed to be determined precisely through direct reference. Eco's solution was to "get rid of" the icon and the index, by insisting upon the ultimately conventional nature of those aspects of such signs that seemed apparently to resist semiotic description. Eco's analysis depends upon all phenomena being reducible, ultimately, to the level of the code, of conventionality – to the level of the symbolic – and he finds himself having to contend with what he says had become a familiar but erroneous distinction, derived from the semiotic of Charles Peirce, from "the most popular of Peirce's trichotomy, that by which signs are classified as *symbols* (arbitrarily linked with their object), *icons* (similar to their object), and *indices* (physically connected to their object)" (178) While such a distinction may be "widely accepted," argues Eco, and while he may have had recourse to it himself, "in order to indicate certain processes, so that they could be immediately, if vaguely, grasped by everyone" (178), if his theory is to remain consistent, it must be dispensed with. "It is," he says, "the basic assumption of the following pages that notions such as 'icon' or 'index' are all-purpose, practical devices just as are the notions of 'sign' or 'thing.' They can undoubtedly be used for normal purposes, but no satisfactory definition can be found for them in the present context" (178). Eco insists that Peirce's trichotomy is "untenable," and that it is so, from his point of view, for a very simple reason: "such a trichotomy postulates the presence of the referent as a discriminant parameter, a situation which is not permitted by the theory of codes proposed in this book" (178). Indeed, Eco is concerned early on in the elaboration of his theory to dispense with what he calls the

“referential fallacy.” A significant problem to be overcome for any theory of codes, he insists, is the problem of the *referent*, “in other words the problem of the possible states of the world supposedly corresponding to the content of a sign function” (58). Such a notion “has most unfortunate results within the framework of a theory of codes,” argues Eco, “and to underestimate its malignant influence leads to a *referential fallacy*” (58; emphasis in original) – the mistaken belief that signs refer to real objects, in an ontologically real world.

Eco is not concerned with establishing links between signs (or sign-functions) and the objects to which they seem to refer. He is not concerned with determining the value of representations according to an evaluation of their *adequacy* in relation to a “real” world. He is concerned, instead, with how codes, “insofar as they are accepted by a society, set up a ‘cultural’ world which is neither actual nor possible in the ontological sense” (61). Following the logic of his analysis, then, Eco is obligated to exclude from the realm of the semiotic any phenomena that are not generated according to the regulations and operations of codes, which is how he understands so-called icons and indices as they are generally conceived. In order to be effective as an explanation, the semiotic network, the “molecular landscape,” within which and upon which sign-functions are generated, must be comprehensive and exclusive:

It was said in 2.1 [pp. 48-50, introducing the theory of codes] that a sign-function is the correlation between an expression and a content based on a conventionally established code (a system of correlational rules), and that codes provide the rules that generate sign-functions. If there exist signs that are to some degree motivated by, similar to, analogous to, naturally linked with their object, then the definition given in 2.1 should no longer be tenable. (191)

Eco then takes the crucial, and, from the point of view of the tenability of his theory, necessary step of forcing such signs to conform to the model of conventional

sign-function generation – which means to effectively “get rid” of such signs, to expel such iconic and indexical signs from the realm of semiosis – or, more precisely, to subsume them within the conventional terms of semiosis, as described by Eco. “The only way to maintain it [the definition of the sign-function] is to demonstrate that even in these types of signs a correlational convention is in operation” (191).

The categories of the icon and the index, in so far as they raised the troubling issue of the referent, which posed such difficulty to a project concerned with accounting for the plurality and diversity of “cultural” worlds as opposed to the singularity of an ontologically “real” world, had necessarily to be either wholly rejected, or shown to be no less “conventional” than those signs traditionally categorized as “symbols.” Statements of the “referential fallacy,” and similar efforts to “get rid of” icons and indices, can be found throughout the literature of structuralist semiology, and find their source in the Saussurean imperative that “the linguistic sign unites, not a thing and a name, but a concept and a sound image” (Saussure 66), the distinction that would become so famous and influential as the pair “signifier-signified.” Later elaborations of Saussure’s dyadic sign-model, which was explicitly premised upon the exclusion of the referent, would emphasize and substantiate this exclusion. Louis Hjelmslev, for instance, offered an embellished version of the Saussurean sign, further dividing the two planes of the sign. For Hjelmslev, the signified is rendered as “expression,” which is further distinguished as consisting of expression-form and expression substance, while the signifier become “content,” which is similarly divided into content-form and content-substance. Any potential referential material, described as “purport,” is consigned to an extra-semiotic realm, an “amorphous continuum,” outside of the social and cultural realm of semiotic

activity. Such “purport” only assumes significance, and becomes amenable to analysis, once it has been given form through semiotic operations. But extra-semiotic purport does not determine content-form, which “is independent of, and stands in arbitrary relation to, the *purport*, and forms it into a *content-substance*” (52). As Winfried Nöth has remarked, “Hjelmslev rejected the common definition of the sign as an expression that points to a content outside the sign itself. Following Saussure, he defined the sign as an entity generated by the indissoluble connection between an expression and a content” (70). Eco derives many of his own terms from Hjelmslev’s emendations to and elaborations of the Saussurean sign, which emphasize the independence of signification from any objective world, and which focus on the internal mechanisms of such signs, on their internal *interdependence*. As Nöth explains, “Hjelmslev called the interdependence between expression-form and content-form a relation of *solidarity*. Expression-form and content-form are also defined as the functives of a *sign-function*” (70).⁴⁸

Even Hjelmslev, who was explicitly elaborating a theory of *language*, saw the limits of his theory when confronted by non-linguistic phenomena. As Nöth observes, “Not all entities which have been called signs in the history of semiotics have two structurally independent planes. Many non-linguistic signs cannot be decomposed into minimal elements of content and expression” (71). As a result, Hjelmslev felt obliged to distinguish between *signs* and *symbols*, the latter described as “interpretable *nonsemiotic* entities” (Qtd. in Nöth 71). Yet the question remains, hovering over the status of such “nonsemiotic entities” which are nevertheless “interpretable”: how are they interpreted? Solutions such as Hjelmslev’s, to merely separate such phenomena from the more proper

⁴⁸ See Hjelmslev (47-49).

semiotic entities that he sought to define, simply leave such a question unanswered. Later semiologists, like Eco, have met the paradoxical challenge of “interpretable nonsemiotic entities” by attempting to dispense with them altogether, by declaring such apparently motivated phenomena as icons and indices to be wholly within the realm of semiosis. Others have been stricter in their divisions, preferring to not even take such unaccountable phenomena into consideration. This is the strategy of A.J. Greimas and Joseph Courtés, in their *Sémiotique: Dictionnaire raisonné de la théorie du langage*, where the index, specifically, is categorically expelled from the semiological purview.

In one way or another, icons and indices have been the targets in an enterprise that has been guided by the fundamental Saussurean principle of non-referentiality, and which has endeavored to resist the “referential fallacy.” But such projects have continually run up against obstacles, especially in the face of photographs and the cinema, which seem to have had such obvious referents – and which seem so clearly similar to and connected to their objects. For many years, following Eco’s and others’ efforts to elaborate a wholly non-referential theory of semiotics, which meant facing the problem of the icon and the index head-on, the question of the iconic and indexical value of the photographic and cinematic image effectively languished, assumed to have been solved, despite the lingering sense that photography and the cinema were somehow different, somehow beyond the conventionalist reduction of semiotic theory. The question of the referent in photography and film theory was rarely addressed. In recent years, however, it has suddenly and forcefully returned as an issue, only to be finally and conclusively put to rest. In the sudden ubiquity of digital technologies, in the apparently comprehensive “digital decomposition” of what had heretofore been understood as analogical

representations, the question of reference seemed to have been decided – and the decision has been widely and loudly proclaimed. A comprehensive “digital approach,” as imagined by Eco, seems to have become possible. In his account of the “language” of new media that has emerged, which we will consider shortly, Lev Manovich’s argument corresponds almost point for point to Eco’s. He is similarly eager to expel signs that appear to be motivated by, similar to, analogous to, or naturally linked to their object. In Manovich’s argument, and in the many similar accounts of digitization being offered, there is a fundamental desire to be rid of such signs, to be rid of the analogous, the motivated, the “natural” – to put to an end, once and for all, the troubling issue of the referent. All formerly analogical phenomena are positioned squarely within the realm of the “semiotic,” within the realm of the cultural, amenable to description, analysis, and subject to critique. Among these, the most significant is that medium which had for so long claimed a privileged status, which had for so long seemed to possess some unique and ineffable relation to reality, and which seemed to command our attention with an immediacy and force like that of the real world, but which seemed so clearly not to be the real world. Now, though, the cinema may finally be stripped of its pretensions, and subjected to a thorough and exhaustive analysis. It is now possible, it seems, to describe the “language” of the cinema, to resurrect a longstanding dream of film theory.

Cinema, Language and Reality

“A film,” wrote Christian Metz, “is difficult to explain because it is easy to understand” (*Language* 69). Our first impulse, he suggests, is to accept what we see on the screen, rather than to ask how it came to be there. Our experience of watching a film

is as easy as looking, and seems to precede and perhaps even preclude understanding. The cinema, as an essentially visual and pictorial medium, overwhelms the viewer through sheer volume of material, of sensory and cognitive data, making the task of explanation profoundly difficult, while providing an experience as rich and as complete, it seems, as reality itself. "Everything," says Metz, "is present in film: hence the obviousness of film, and hence also its opacity" (69). The cinema seems almost to challenge the theorist, who must work to overcome the film's efforts to completely envelop and absorb the viewer, as it substitutes itself for the real world, and as it achieves, through such a substitution, a sense of immediacy and an overwhelming *insistence*. "The image impresses itself on us," argues Metz, "blocking everything that is not itself" (69). The very fact of film's easy pleasures is what makes the task of explanation so hard. As opposed to the too-easily won pleasures of film viewing, there are the difficult tasks of theory; in contrast to passive experience, there is active explanation.

In the face of such a stark contrast between passive spectatorial pleasure and the demanding activity of explanation and analysis, Metz boldly undertook the theoretical task, which was to describe just those elements that are obscured by the cinema's opacity. The challenge, for Metz, is to look past, or through, the cinema's rich and vivid surface to the mechanics of representation that lie behind it. His description of a cinematic plenitude serves to underscore his specifically semiological argument that the cinema functions, or achieves its effects, through a kind of symbolic effusiveness, which is the product, though, of a simpler, underlying system of generation. The cinematographic image is "[a] rich message with a poor code, or a rich text with a poor system" (69). That is, the modes of

its articulation are relatively impoverished when compared with the amount of material articulated. The task he sets himself is to describe the modes of articulation that *nevertheless* exist, despite their poverty, despite their being overwhelmed by the cinema's visual effusions, arguing for the value of a semiotics of the cinema that would reveal and describe these modes, arguing for a new mode of analysis which would be capable of penetrating the film's rich visual surface.

Metz was aware of the longstanding theoretical traditions that already existed for the study of the cinema – a “theory of cinema,” as he calls it, that had been elaborated by such figures as Sergei Eisenstein, Béla Balázs and André Bazin, and a “filmology,” “the scientific study [of the cinema] conducted from outside by psychologists, psychiatrists, aestheticians, sociologists, educators, biologists” (90). The breadth and scope of these earlier endeavors testified to the desire to look for causes in the face of such overwhelming cinematic effect, and their findings were, for Metz, significant and suggestive. “Both filmology and the theory of cinema,” he wrote, “are indispensable to the approach I am proposing” (91). Yet neither had gone far enough in their efforts to explain the generative functions that were capable of producing the richly effusive cinematic experience, and neither had looked to the discipline with which one might begin to describe and analyze such functions. “Very much to one side,” argued Metz, “of both filmology and the theory of cinema – unfortunately – is linguistics and its semiological extensions” (91). It was this unfortunate oversight that Metz was concerned to redress, as he sought to strengthen and expand the accomplishments of film theory and filmology through a linguistic or semiological analysis of cinematic expression, which would explain the processes of transmission and communication. Metz imagines the

realization of “the great Saussurean dream of studying the mechanisms by which human significations are transmitted in human society” (91) – especially one of the most complex of all such mechanisms, the overwhelming and effusive phenomenon of the cinema. “The time has come,” he announces, “for a semiotics of the cinema” (91). The time had come, that is, to fully acknowledge that the rich, vivid cinematic experience was the result of specific generative mechanisms, and to conclusively demonstrate that the cinema was an *expressive* phenomenon, despite its overwhelming sense of immediacy, presence and plenitude. The time had come for an account of the means by which such an overwhelming experience is produced, for an account of the means of cinematic expression, for an account of the *language* of cinema.

Indeed it was, for Metz, the very richness and complexity of cinema that demanded a linguistic or semiological analysis, which would reveal the basic structures of cinematic expression. Metz understood, though, how a rigorous application of the concept of language to the study of the cinema might seem to defy common sense. He was well aware of the arguments against the notion of a cinematic language, and even acknowledged that Saussure himself would likely have balked at the extension of his semiological analysis to include a phenomenon as profoundly visual and pictorial as the cinema.⁴⁹ The application of linguistic terms of analysis may be rejected as merely metaphorical, as a rather too lax use of the concept of language. “One can of course,” he acknowledges, “conclude that the cinema is not a language, or that it is so only in a sense

⁴⁹ The nature of Saussure’s objection, as Metz imagines it, is more specific, and derives from the answer Metz actually gives to the question in the title of his essay – “cinéma: langue ou langage”? The cinema is, Metz argues, a “langage,” rather than a “langue,” or language system. It consists, that is, of a capacity to produce specific and distinct utterances, resembling something like speech. “Naturally,” he admits, “anything like a *linguistics of speech* is a departure, it would seem, from the thought of the Genevan scholar” (89).

that is altogether too figurative, and, consequently, it should not be dealt with through semiotics” (89). Yet this is, for Metz, too timid, and it fails to imagine the possibilities inherent in the extension of linguistics and semiology to include such phenomena. Nor does it seem willing to imagine a more expansive and robust future for semiology itself, which would otherwise be restricted to only those phenomena that obviously manifest overtly linguistic structures. Ultimately, he insists, a reasoned objection against a semiology of the cinema, a minimalist account of the capacities of linguistic and semiological analysis, “is a very negative point of view, particularly in the case of a social fact as important as the cinema” (89). Given its obvious significance, the cinema demands the sort of rigorous analysis that semiology, perhaps alone, is capable of offering. The cinema, in turn, offers semiology a chance to reveal its own social significance, as a method that may be capable of explaining such profoundly important phenomena. “The result of this attitude,” he argues, the result, that is, of a minimalist and merely *methodological* prohibition against a more expansive semiological field, “would be that one would study traffic signals because they have a very obvious paradigmatic structure, while paying no attention to a means of expression that after all carries a little more human weight than roadside signs!” (89).⁵⁰

⁵⁰ Metz’s arguments often take such an emotional form. Belying his reputation as an austere technical and logical thinker, there are many such rhetorical flourishes, many instances of argument by analogy, and many uses of various literary tropes and metaphors. Linguistics, for instance, is recommended on the basis of its age and longevity, as an “old” discipline, leading Metz to observe that “old age seems to suit it, since it is very much alive and well” (91). Moreover, argues Metz, the inclusion of cinema as yet another object of linguistic inquiry will by no means “overburden” the old discipline, which is capable of bearing “a few extra demands placed on it” (91). Indeed, this added duty may well suit the old discipline. “It is a well-known fact,” writes Metz, further elaborating his personification of a willing and benevolent linguistics, “that the busiest people are always those who find the time to concern themselves with others – as Proust remarked about Monsieur Norpoi” (91).

A phenomenon as important and as significant as the cinema, then, Metz argues, needs the sort of analysis that only semiology can provide in order to properly assess it as a social fact, as a “means of expression” which functions in such an obviously and conspicuously social and political manner. This has effectively served as the main defense against efforts to question the validity of the semiological notion of a language of film, which have periodically emerged, and which have generally proceeded along the lines anticipated already by Metz. As Winfried Nöth has remarked, the strict semiological concept of a filmic language or “grammar” was extremely difficult to elaborate, and the cinema did not seem to be a suitable candidate at all for linguistic analysis. The search for minimal units of significance, for filmic morphemes or phonemes, for instance, was inevitably frustrated by the inability to directly equate sequences, shots, or even shot elements with such linguistic rudiments, and new directions were quickly elaborated. Nöth follows a distinction established by Karl-Dietmar Möller between a “classical” film semiology, which posited a strict homology between film and language, and a “new” semiotics, elaborated mainly in the 1980s, which, Nöth observes, turned away from a literal application of a Saussurean semiological model to the cinema.⁵¹ Nöth writes that this new semiotics “largely abandoned this guideline, and turned to models such as generative grammar, text linguistics and pragmatics” (*Handbook* 469). The difficulties of a Saussurean film semiology were apparent even earlier, however, and significant efforts were made to develop alternative models. Pier Paolo Pasolini is widely acknowledged to have already elaborated an alternative film semiotics in the late 1960s, based on a looser notion of “filmic speech.” In English, Peter Wollen offered his critique of an excessively

⁵¹ See Möller, “Syntax und Semantik in der Filmsemiotik.”

strict linguistic homology in *Signs and Meaning in the Cinema*. Wollen insisted that a strict linguistic analogy was not entirely necessary, and that “our experience of cinema suggests that great complexity of meaning can be expressed through images,” and that “it is not only systems exclusively ‘grounded on the arbitrariness of the sign’ which are expressive and meaningful” (120), an argument he elaborated in some detail and to which we shall return.

Theories of cinematic meaning and expression that wholly rejected the linguistic analogy were also subsequently developed. David Bordwell, for instance, offered a “historical poetics,” determined largely by the theories of Russian formalism, which was presented as a potential alternative to more strictly linguistic or semiological models.⁵² Noël Carroll also elaborated a more general critique of the structuralist and Saussurean assumptions that governed contemporary film theory.⁵³ Both Bordwell and Carroll have been influenced by the turn in film theory towards cognitive science, and have been instrumental in providing opportunities for the development of theoretical alternatives.⁵⁴ Despite such efforts, however, and despite the early difficulties faced by film semiology, the notion of a film language has persisted, if only in a loose manner, as Stephen Prince has argued. While never really wholly substantiated or effectively demonstrated, the notion of a film language has nevertheless become a basic assumption of film theory, which is, as Stephen Prince notes, “deeply indebted to structuralist and Saussurean-derived linguistic models” (16). Prince insists that “it would difficult to overstate the depth and importance of this relationship” (16), and he describes the degree to which the

⁵² See Bordwell, *Narration in the Fiction Film*.

⁵³ See Carroll, *Mystifying Movies: Fads and Fallacies in Contemporary Film Theory*.

⁵⁴ See Bordwell and Carroll, eds., *Post-Theory: Reconstructing Film Studies*.

linguistic and semiological influence has established certain basic assumptions that are difficult if not impossible to shake. “To speak, for example, about ‘reading’ a film, as many film analysts do now, irrespective of the critical methodology employed to generate the meaning, is to index and emphasize this lineage” (16). Films, notes Prince, are generally and casually regarded “as texts for reading by viewers or critics, with the concomitant implication that such reading activates [...] processes of semiotic decoding” (16).

That a film be understood, to some degree or other, as a “text,” as a conventionally constructed artifact, consisting of discreet elements organized and arranged according to a specific and underlying “code,” while difficult to substantiate, and confronted by considerable challenges and critiques, remained, nevertheless, as the governing notion at the centre of the theoretical project of film studies. Confronted by the charge that the notion of a cinematic language is, at best, a metaphor, and, at worst, a fundamental misconception of how meaning is generated in the cinema, proponents of a semiology or semiotics of the cinema have responded that, despite the limitations of such an account, it is crucially important to show that the cinema is, in some respects at least, if not in its entirety, a conventional, culturally determined phenomenon, the social and political significance of which lies, to a large extent, in its capacity to obscure such qualities. The *difficulty* of explanation, as Metz had insisted, becomes the grounds upon which an explanation of that difficulty becomes a necessity. The cinema needs to be revealed as an illusion, as a mode of representation as abstract and conventional as language and, most importantly, as one which actively obscures its own constructedness, precisely by means of its powerfully illusionary capacities.

A specific methodological shortcoming is thus transformed into a virtue, and conventionalist accounts become focused on the fact of a distinction between cinema and reality, a distinction that such accounts are keenly determined to reveal, and which the cinema is understood to necessarily obscure. While a positive account of the essentially linguistic structure of cinematic expression failed to be elaborated, a more negative characterization of the cinema, an account of the very many respects in which the cinema is *not* reality – with the consequent implication, then, that the cinema must be a *construction* – is pursued. As Robert Stam *et al.* argue in their defense of the semiological heritage in film theory, a rigorous *formalism* is necessary primarily to resist a naïve realism. “A purely formalist definition of realism,” they argue, “would emphasize the conventional nature of all fictional codes, and would posit realism simply as a constellation of stylistic devices, a set of conventions that at a given moment in the history of art, manage, through the fine-tuning of illusionistic technique, to crystallize a strong feeling of authenticity” (185).

The emphasis of such a formalism turns, then, from a consideration of the specific elements of cinematic expression or enunciation to an analysis of the *effects* of such expression, to the means by which a viewer may be lulled into a state of acceptance, of belief, and away from a more critical attitude. The risk that such a rigorous, semiological formalism is determined to counter is the “combination of verisimilar cinematic representationalism and a fantasy-inducing spectatorial situation [which] conspire to project the spectator into a dream-like state where interior hallucination is confused with real perception” (185). The origins of such a fear, while refracted through the prisms of semiology and psychoanalysis, lie in a much older philosophical tradition, which

suggested the possibility of a wholesale substitution of illusion for reality, of the fabrication of worlds that stand in for, but may come to be accepted as, the real world. “One constantly returns,” writes Jean-Louis Baudry, “to the scene of the cave” (“Apparatus” 41). Recourse to a kind of Platonic idealism, translated into contemporary terms by structuralist semiology and Freudian and Lacanian psychoanalysis, was difficult to resist, for reasons about which Baudry is admirably frank. “Even though Ideas take the place of the Ucs [unconscious] for him,” explains Baudry, “Plato confronts a problem equivalent to that which at first preoccupies Freud in his metapsychological research: the transfer, the access from one place to another, along with the ensuing distortions” (44). There are, for Baudry, worthy and instructive parallels between the subject described and analyzed by Freud and that depicted by Plato. “Plato’s prisoner is the victim,” he explains, “of an illusion of reality, that is, of precisely what is known as an hallucination, if one is awake, a dream, if asleep; he is the prey of an impression, of an impression of reality” (44). There are, Baudry admits, endeavoring to avoid charges of idealism, many significant differences between Plato and Freud, the most important being that “the location of reality for Plato obviously doesn’t correspond to what is real for Freud” (44), yet Baudry insists that the metaphors Plato offers to describe our *relationship* to reality are worthy of careful consideration – metaphors that have, with the advances in technology that we have experienced in the interim, been materialized:

[I]sn’t it curious that Plato, in order to explain the transfer, the access from one place to another and to demonstrate, reveal, and make understood what sort of illusion underlies our direct contact with the real, would imagine or resort to an apparatus that doesn’t merely evoke, but quite precisely describes in its mode of operation the cinematographic apparatus and the spectator’s place in relation to it. (44)

The discovery, at the very beginning of the idealist and skeptical tradition of Western philosophy, of a description that conforms so well to the actual details of the

movie theatre, to the technological, mechanical, and ideological components of the cinema, had necessarily to be investigated and pursued. Plato had famously been suspicious of art and artists, who were capable of presenting versions of the world that could be taken *for* that world. Art was dangerous precisely in so far as it could potentially substitute itself for reality, a danger that is seen to have become imminent and acute (if not actually realized) with the cinema. Traditionally (or, according to another tradition), though, art has been understood as inevitably distinct from reality, defined by its very *inability* to wholly reproduce the real. Art has often been understood as a means which might, at best, isolate certain aspects of reality for our consideration, but which could by no means be confused for that reality. “Art,” insists the critic and art historian Herbert Read, “has never been an attempt to grasp reality as a whole – that is beyond human capacity; it was never even an attempt to represent the totality of appearances; but rather it has been the piecemeal recognition and patient fixation of what is significant in human experience” (18). Nevertheless, a perfect and complete representation of reality is a longstanding human desire, and the cinema is generally regarded as the fulfillment of that desire, as the most thoroughgoing illusion yet produced in the history of art, capable of producing the sort of effect that many in history have only ever dreamed of, and many more have feared, namely the perfect, or near-perfect imitation of nature. It is the realization, or the nearest realization, of the fantasies of Zeuxis and Pygmalion, and of the fears of Xenophon and Plato. It is the site of the sort of perceptual and cognitive confusion that arises from looking at the too-convincing, life-like image, the realization of the sort of transformation described, for instance in Ovid’s *Metamorphosis*. “With marvelous artistry,” describes Ovid, Pygmalion “carved a snowy, ivory statue. He made it

lovelier than any woman born, and fell in love with his own creation.” As a result of his love, his adulation, his adoration, Pygmalion effects perhaps the most famous transformation in the history of literature, revealing the suppressed desire that art is supposed to excite, and the sort of cognitive confusion – dangerous or pleasurable, depending upon one’s point of view – that can result. Returning home one day, Pygmalion kissed his creation, in the manner he had assumed, only to discover that instead of the cold, unresponsive stone with which he had become familiar, there was a strange warmth and a return of his affections. “The lover stood, amazed, afraid of being mistaken, his joy tempered with doubt, and again and again stroked the object of his prayers. It was a body; he could feel the veins as he pressed them with his thumb.”⁵⁵

André Bazin has described a Pygmalion-like desire in the efforts of the early pioneers of cinema, in the fervid hopes of Muybridge and Marey, of Méliès and the Lumières, who elaborated a contemporary version of the myth, in their desire for what Bazin calls a “total cinema.” The cinema, he argues, in “The Myth of Total Cinema,” “owes virtually nothing to the scientific spirit” (*What Is Cinema?* Vol. 2; 17). The inventors of the cinema were, he insists, motivated by another spirit, by the longing or obsession for perfect and complete representation. “In their imaginations,” he writes, “they saw the cinema as a total and complete representation of reality; they saw in a trice the reconstruction of a perfect illusion of the outside world in sound, color, and relief” (20). Such an obsession, which has ancient roots, became acute in the nineteenth century,

⁵⁵ Ovid, *Metamorphoses*, 10, lines 243-89. Quoted in Freedberg, *The Power of Images: Studies in the History and Theory of Response* (342). Freedberg’s history is the most thorough and sympathetic account of the desire for and fear of the convincing, lifelike image, as manifested in iconoclastic critiques of realism, or even violent responses, which may lead to literal iconoclasm, or the destruction of images. For a fascinating account of cinematic representations of the desire of Pygmalion, of the specific fantasy of statuary brought to life, see Gross, *The Dream of the Moving Statue*.

argues Bazin, as the various techniques for mechanical reproduction were developed and perfected, prompting a search for the means with which reality could be reproduced in all its detail and complexity. Movement, of course, was the most crucial element, and its reproduction is what was finally realized with the cinema, which was greeted as a moment of culmination, fulfilling the promise of the various techniques and effects that had only hinted at or suggested movement. With the cinema, which seemed to reproduce real movement, a goal seemed to have been reached:

The guiding myth, then, inspiring the invention of the cinema, is the accomplishment of that which dominated in a more or less vague fashion all the techniques of the mechanical reproduction of reality in the nineteenth century, from photography to the phonograph, namely an integral realism, a recreation of the world in its own image, an image unburdened by the freedom of interpretation of the artist or the irreversibility of time. (21)

Yet despite such desires that may have animated those engaged in the development of the techniques of mechanical reproduction, the reality of the cinematic presentation has never quite matched “reality,” and the history of the cinema has, to a large extent, been a history of stylistic and technical elaborations which would allow the cinema to (finally, hopefully) realize its original goal. It is, as Bazin suggests, a paradoxical movement forward towards a dream, a fantasy, elaborated in the past. “Every new development added to the cinema,” he insists, “must, paradoxically, take it nearer and nearer to its origins. In short, cinema has not yet been invented!” (21).

Nor, he insists, will it be. While there may always be those who believe that the cinema will realize its original dream – and that dream is given new life with each generation, which is presented with the latest technological promises of an integrated realism, beginning with sound and color, to widescreen, stereo sound, 3-D, and, most recently, IMAX, Virtual Reality, immersive ride-movies, and so on – while there may

always be some, that is, who harbor the same fervid hopes as those who had originally imagined the cinema, the technology is destined, always, to disappoint, and the invention of a (mythical) cinema will always be indefinitely postponed. The cinema, Bazin insists, will only ever be experienced as artifice, even at its most realistic, because, as he argues, in “An Aesthetic of Reality: Neorealism,” “realism in art can only ever be achieved in one way – through artifice” (26). As a result of the very simple fact that cinema is *not* reality, but rather merely a technique for the *representation* of reality, it will never be capable of an absolute substitution, it will never be capable of producing a wholly convincing reproduction of reality. “Thus,” concludes Bazin, “the most realistic of the arts shares the common lot. It cannot make reality entirely its own because reality must inevitably elude it at some point.” For Bazin, then, champion of the realistic accomplishments of Jean Renoir, Orson Welles and Roberto Rossellini, advocate of Italian Neorealism, the only authentic sort of realism that the cinema can hope to elaborate is one that acknowledges the medium’s own limits, and which does not pursue the doomed dream of completeness and integration. A true realist is the one who understands that with each aesthetic and stylistic decision there is both loss and gain, that what may in certain respects increase the realistic effect, reduces it in others. Bazin describes two extreme poles of realism, manifested in the strict documentary style of Georges Rouquier in his *Farrebique* (1946), and in the elaborate stylizations of *Citizen Kane* (1941). While Rouquier, like F.W. Murnau and Robert Flaherty in *Tabu* (1931), and Leopold Lindtberg in *La Dernière Chance* (1945), seeks a performative realism through the use of non-professional actors, Welles, through his eschewal of classical patterns of editing, and his use of deep focus, “restored to cinematographic illusion a

fundamental quality of reality – its continuity” (28). Each, though, has elaborated only a specific element or aspect of our experience of reality, and found the means for its roughly adequate cinematic reproduction.

Between what Bazin describes as the “contrasting but equally pure kinds of realism represented by *Farrebique* on the one hand and *Citizen Kane* on the other, there is a wide variety of possible combinations” (29). There is, in effect, a “coefficient” of realism that Bazin describes, whereby the addition or subtraction of a particular element will reduce or enlarge the realistic capacities of a film. He sees this clearly manifested in the films of the Italian Neorealism. “In the absence of technical equipment,” given the circumstances of post-war Italy, “the Italian directors have been obliged to record the sound and dialogue after the actual filming. The net result,” says Bazin, “is a loss of realism. However, left free to use the camera unfettered by the microphone, such directors have thereby profited by the occasion to enlarge the camera’s field of action and its mobility with, consequently, an immediate raising of the reality coefficient” (29-30). The Italian experience is exemplary for Bazin, demonstrating the basic condition of cinema, which is animated by the (more or less sincere) search for an integral realism that the technology seems to offer, but which is always and necessarily constrained *by* that technology. This is the paradox, the conundrum, at the centre of the cinematic dream, which determines that it will never be realized: “Some measure of reality,” he explains, in the form of a revealing paradox, “must always be sacrificed in the effort of achieving it” (30).

Bazin, then, sees the cinema as necessarily limited, and as always revealing and manifesting its inherent limits, and the myth of total cinema, of the reproduction of a

fully integrated realism, is presented precisely *as* myth, as an unrealizable dream. What Bazin saw as myth, however, is presented today as a very real and troubling possibility, as the cinema has continued its technological march towards its initial goal. Manovich refers explicitly to the myth, which he reconceives as “the promise of Bazin’s ‘total realism’,” and which, he insists, “appears to be closer than ever, literally within arm’s reach of the VR user” (*Language* 189). Manovich presents new computer image technologies as effectively fulfilling the Bazinian teleology. “If we follow Bazin’s approach,” he argues, “and compare images drawn from the history of 3-D computer graphics with the visual perception of natural reality, his evolutionary narrative seems to have been confirmed” (189). It is, however, a mischaracterization of Bazin’s position to describe it as an “evolutionary narrative,” nor, if his argument is considered carefully, is it a promise that could ever possibly be realized. It is of the nature of an inspirational myth, rooted in human hopes and dreams, the manifestations of which will always, inevitably, fall short, conforming necessarily to the limits of human fabrication and the basic conditions of our material existence. Referring to another significant dream, Bazin notes that “the myth of Icarus had to wait on the internal combustion engine before descending from the Platonic heavens” (22). The realization of the dream, that is, ultimately bore little resemblance to the terms of the original myth, the fantasy of an elegant and effortless capacity for human flight. Rather, we have had to settle for the crude mechanics of internal combustion, and the complex apparatus of aeronautics, the burdens of which ensure that flight will inevitably be experienced as a complex, laborious and perhaps unnatural effort. Similarly, the kiss of Pygmalion, the dream of an integrated realism so convincing as to be utterly confused with reality, is belied and inevitably

disappointed by the unavoidable presence of the apparatus and mechanics of realism, by the fundamental inability for the means of artifice to be wholly dissolved.⁵⁶

For many theorists today, though, the cinema has succeeded too well. The images we are confronted with are so strikingly realistic, that there is the potential for real confusion. As Manovich says, “synthetic photographs produced with computer graphics [...] are *too perfect* [...] they are [...] *too real*” (*Language* 202). The images of “3-D photorealistic computer animation,” argues Manovich, “are perfectly real – all too real” (204). Against Bazin’s recognition of the inherent constraints on representation, Manovich argues that the “synthetic image is free of the limitations of both human and camera vision” (202), reflecting the fears of contemporary film theory, which has largely been elaborated as a means of defense against the possibility of a “total cinema” of illusion. Metz, Baudry, and many other film theorists who have followed them, see the cinema, in its profusion of realistic effects, in its pursuit of the dream of a fully integrated realism, in its potential realization of the Platonic image, as always *obscuring* its limits, drawing the viewer ever deeper into its fictions, its simulations, which seem now to have become “too perfect.” In this respect, the cinema seemed to overreach the traditional limits of art, overstepping what Read and Bazin had seen as the immutable boundaries between art and reality, and in doing so posing what seems to be a quite radical danger. The task of a contemporary film theory, of a semiology of cinema as initiated largely by

⁵⁶ This is especially the case of VR, or virtual reality, which Manovich and many others have held up as the potential apotheosis of cinema, the means by which a total cinema may be realized. The promise of VR, though, has been radically tempered, as a result of the quite significant clumsiness of the necessary apparatus, which could only ever be experienced as an unpleasant burden for the user, preventing anything like complete immersion or integrated realism. The most common effect, in fact, was a queasiness, as the images of the VR display failed to respond quickly enough to the movements of the user’s body. The excited discussion of the future of VR has, in the last few years, been reduced to an almost complete silence.

Metz, becomes primarily interested in placing cinema within its proper realm, with the demonstration that, *despite* its overwhelmingly realistic capacities, *despite* the obscurity of this fact, the cinema is no more than mere representation, no more than pale simulation. Theory assumes the task of revelation, given the cinema's reputed tendency for denial. Among the most efficient and effective means of demonstrating this fact is the linguistic analogy. Yet, as we have seen, the limits of such an analogy were widely and immediately understood, so that it was often presented as merely the best means available for a necessarily critical account of the cinema's status as conventional and potentially too-convincing representation. Rather than a sustained analysis and description of the linguistic, or even quasi-linguistic, structures of cinematic expression, the cinema was simply presented as distinct from reality, its distinctness offered as proof of its textual constitution. Stephen Heath, for instance, in *Questions of Cinema*, offers the linguistic analogy in somewhat restrained terms, emphasizing its specific value for distinguishing film and reality, which in turn demonstrates that the cinema is a conventional phenomenon. "That reality," he argues, "the match of film and world, is a matter of representation, and representation is in turn a matter of discourse. [...] [*I*]n this sense at least, film is a series of languages, a history of codes" (16; emphasis added).

Chapter 5: Reference and Reality in the Cinema

If, as Metz constantly reminds us, cinema itself is a special effect; if cinema, and for some years now, television have sought to replicate that sense of awe that once surrounded them at the time of their invention; and if there is a common intuition among reviewers, critics and scholars that something has changed in the nature of cinema – something to do with the decay of familiar narrative and performance values in favour of the qualities of the blockbuster – then in the field of special effects we are dealing with a history which is also contemporary, a historical process which is incomplete.

Sean Cubitt (“Le réel”; 123)

Reality and Illusion

Whatever reservations there might have been about the validity of a linguistic, semiological analysis of the cinema, which Metz had explicitly acknowledged, and which inflected subsequent semiological projects, they were compensated by its usefulness in overcoming and resisting accounts of the cinema judged to have failed to see the impostures of its realism, accounts which continued to be produced, and which were widely ignored or condemned as naïve, even retrograde. Stanley Cavell, for instance, writing about the same time as Metz, begins with a similar observation about the *ease* of the cinematic experience, which seems to preclude questions of method and technique, a preclusion instantiated in the cinema itself. “The movie’s ease,” wrote Cavell in 1971, in *The World Viewed*, “within its assumptions and achievements – its conventions remaining convenient for so much of its life, remaining convincing and fertile without self-questioning – is central to its pleasure for us” (15). This, though, was just what Metz and others had insisted must be overcome, and the injunction to question the cinema was formulated precisely in response to the cinema’s own failure to question itself, in its offering the viewer a too easy experience of spectatorial pleasure. Cavell was quite radically out of step with the times. Film theory had become, following Metz, a forceful

consideration of the cinema's conventions *as* conventions, as the basis of its distinction from reality, from the world. Cavell, by contrast, seemed to be suggesting that the cinema's realism derived from some authentic relationship with reality.

For Metz, of course, as well as for contemporary, semiological film theory that develops on the basis of Metz's insights and injunctions, it is not "reality" that is projected and screened, and any such suggestion is rejected. What the cinema produces is, as Metz insists, only an "impression of reality" (*Film Language* 3-15), by which he means an illusory and false effect. The force of this impression, however, derives not from the re-presentation of reality, but rather from the effectiveness of the apparatus, from the convincing effect of *movement* in the cinema, which is premised upon the somewhat more attenuated (yet literal) reality of movement in the turning wheels and the passage of the filmstrip through the projector. "In the cinema," writes Metz, "the impression of reality is also the reality of the impression, the real presence of motion" (9). In its reproduction of this one – yet crucial – aspect of reality, the cinema is capable of distracting the viewer from the other aspects that are in fact lacking – volume, substance, etc. Metz would later develop upon this notion, finding in the cinema a kind of paradox, the material means for the *substantiation* of the dream or hallucination. The cinema offers the basic structure upon which a viewer may elaborate a fantasy, allowed to overlook its fantastic constitution given the forcefulness and vividness of cinematic representation and the real presence of the cinema's audio-visual material. Metz describes the peculiar situation of the film spectator: "[T]he subject, in this case, has hallucinated what was already there, what at the same moment he in fact perceived: the images and sounds of the film" (*Imaginary Signifier* 104).

The cinema is, Metz argues, a hallucination; but it is peculiar kind of hallucination, the peculiarity of which is suggested by his paradoxical formulation, which suggests a simultaneous absence and presence – the viewer, Metz’s “subject,” has “hallucinated what was really there.” The film viewer, in Metz’s analysis, undeniably *sees* something, *perceives* something, but in the presence of the film image perception is suddenly quite radically unreliable. Our senses are tricked, as we are convinced of the reality of the in fact unreal, insubstantial images flickering before us. We should not believe what we see, but we are compelled to do so by the sheer force of the imagery, by its sheer epistemological insistence, so to speak. Metz’s analysis is not a simplistic one. “It is understood,” he writes, “that the audience is not duped by the diegetic illusion, it ‘knows’ that the screen presents no more than a fiction” (72). The hallucinatory process that Metz describes is complex, and every viewer is simultaneously credulous and incredulous, at once refusing to believe while necessarily having to believe, and Metz insists upon the ultimately duplicitous and deceptive motivation behind any cinematic representation:

Any spectator will tell you that he ‘doesn’t believe it’, but everything happens as if there were nonetheless someone to be deceived, someone who really would ‘believe in it’. (I shall say that behind any fiction there is a second fiction: the diegetic events are fictional, that is the first; but everyone pretends to believe that they are true, and that is the second; there is even a third: the general refusal to admit that somewhere in oneself one believes they are genuinely true.) (72)

It is this fluctuation between credulity and incredulity, as well as the unacknowledged (unconscious) willingness to be deceived, upon which the cinema depends for its “impression of reality,” that Metz is concerned to describe. The film spectator is in a state very much like that of the dreamer, argues Metz, and the traditional analogy between the two is a useful and suggestive one, he insists. There is, though, an

important distinction to make. “The dreamer does not know that he is dreaming,” he says, but “the film spectator knows that he is at the cinema” (101). There is a great degree of correspondence, that is, between watching a film and dreaming, but there is this one fundamental difference. Metz’s task, in the face of this difference, is to explain how, regardless of this knowledge, despite knowing that one is in fact ‘at the movies,’ one can nevertheless be convinced of and fooled by the images, tricked into believing in the diegetic fiction. That one *can* be fooled, that “the gap between the two states sometimes tends to diminish” (101), is proved by the very real motor responses provoked by the cinema. This is taken for granted by Metz, and the results of such deception may, he insists, be easily observed in spectators. Metz, in fact, offers some vaguely anthropological evidence, describing the scenes at film shows in rural settings – “villages or small towns of countries like France or Italy” – environments “where one can see the spectators, often young children, sometimes adults, rise from their seats, gesticulate, shout encouragement to the hero of the story, and insult the ‘bad guy’” (101). Such outbursts can be met with disapproving shouts and comments, or at least by hard stares, the result of which is to effectively remind the spectator that he or she is indeed in a movie theatre, and that the events are in fact no more than fictions. Depending on the specific context, such behavior is more or less acceptable, but it is the genesis of such outbursts that Metz is concerned to explain. “The subject actively invading the diegesis through a motor outburst was initially aroused by a first step, however modest – however prescribed, if necessary, by the indigenous rituals of the film audience – a first step towards confusing film and reality” (102).

The sort of outburst that Metz suggests can be produced by such confusion, which is attributed to children, or unsophisticated (rural) adult viewers, in fact has a salutary effect. “But the outburst itself,” writes Metz, “once it has been set in motion (an outburst, moreover, which is most often collective) works to dissipate the budding confusion, by returning the subjects to their *rightful* activity”(102: emphasis added) – maintaining, that is, according to Metz’s normative logic, their proper distance from the film spectacle, returning to the proper state of incredulity. Metz is offering here the familiar account of the naïve viewer, who lacks the means to resist the power of images to produce such a compelling impression of reality, and who too easily confuses image and reality. While he depends upon such a notion, however, he offers a somewhat novel interpretation of such simple credulity, which for him at least has the effect of breaking the cinematic spell. Metz elaborates:

The spectator lets himself be carried away – perhaps deceived for the space of a second – by the anagogic powers belonging to a diegetic film, and he begins to act; but it is precisely this action that awakens him, pulls him back from his brief lapse into a kind of sleep, where the action had its root, and ends up by restoring the distance between the film and him. (102)

For Metz, the naïve viewer has the unwitting capacity to resist the diegetic pull of the cinematic image and, like the dreamer, may awaken, reestablishing the proper perceptual relationship. The real difficulty arises once one becomes a disciplined viewer, once one is absorbed by the diegetic power of the film *and* bound by the social constraints of the sophisticated audience, for whom such outbursts are embarrassments that must be precluded. In this context, the budding confusion is allowed to bloom into full disorientation. When compelled to act, when compelled, that is, to respond with the sort of outburst he describes, most viewers – those, that is, who have internalized a sense of cinematic decorum – resist, afraid of the sanctions that will inevitably come, afraid of

publicly revealing their credulity. This is what Metz describes as the “dissociation of ‘motoricity’ from consciousness” which in turn creates the possibility of “going further in certain cases of somnambulism than in audience behaviors of the ‘intervening’ type (103). We learn, that is, *not* to intervene, and thereby become wholly susceptible to the cinema’s power to convince, and are led into confusion. We are taught, through a process of implicit and explicit instruction, to remain seated and to keep quiet, and in this situation of effective constraint and immobility the film is allowed to fulfill its illusory function. The chance to awaken, to literally start from our dream-like state – the chance that is provided by the outbursts of the naïve viewer – is effectively removed from the context of “adult” viewing, which allows instead “for perceptual transference, the dream-like and sleepy confusion of film and reality, still very far from its total fulfillment, to become more stable” (103).

Not perfect, to be sure, but stable, close enough to become psychologically and ideologically problematic. Metz is understandably careful to resist the notion of the perfect cinematic illusion, of the complete confusion of film and reality. This would preclude the possibility of any effective political and aesthetic critique, which Metz, and those who followed Metz, were concerned to elaborate. What he describes, instead, is a social context, a consensual space, one that bears a quite striking resemblance to the Platonic cave, a resemblance that Baudry would make explicit. It is the site where, through a combination of social prescription and cinematic effect, the compliant and effectively constrained viewer is lulled into a dreamy acceptance of the filmic reality. “The adult spectator,” writes Metz, “who belongs to a social group that watches films seated and silent – he, in short (that other sort of native), who is neither a child nor

childlike – finds himself without defenses” (103). Such a viewer is at the mercy of the film, which is able to do its work – if not perfectly, then certainly with a far greater degree of success than with the “childish” audience. No opportunities for resistance, witting or not, are provided, and the dream is allowed to unfold with little or no resistance from the dreamer. “The spectator,” continues Metz, “who, as our society prescribes, is immobile and silent does not have the opportunity to ‘shake off’ his budding dream, as one would remove the dust from a garment, through a motor outburst. This,” he concludes, “is probably why he pushes perceptual transference a bit further than do audiences who actively invade the diegesis” (103).

This Metzian spectator – the dreamy viewer, the submissive somnambulist, derived from a peculiar mix of (pseudo)empirical observation and the application of particular psychoanalytic concepts of fetishism and disavowal – quickly became the dominant model in contemporary film theory. Against such a spectatorial condition, against the passivity and susceptibility of such a spectator, film theory after Metz sought to elaborate a cinematic practice and aesthetic that would foreground its own fictional status, and thereby prevent such perceptual transference, maintaining instead the sort of instability and radical potential manifested in the childish outbursts of the unschooled audience – or at the very least reveal the cinema’s impostures for what they are, thereby allowing for a more resistant response. Yet the evidence upon which Metz bases his claims seems questionable at best, and the rather romantic notion of the naïve viewer, the exemplary figure valorized by Metz, whose involuntary and destabilizing motor response should be consciously emulated by the psychologically and ideologically aware modern

spectator, has been recently shown to be more fiction than fact.⁵⁷ While Metz sought to redeem the character of the naïve, credulous spectator, in whom he saw a radical and critical potential, he relied nonetheless on what is little more than apocryphal evidence, even referring to the most widely cited yet least credible account of the moment of pure credulity that supposedly marked the very origin of the cinema, a moment of perfect credulity and dramatic motor response, insisting that such credulity still persists, and needs only to be mobilized in the elaboration of a more self-conscious and critical spectatorial attitude. Metz refers to “the credulous spectators at the ‘*Grande Café*’ in 1895, frequently and complacently evoked by the *incredulous* spectators who have come *later* (and are no longer “children”), “those spectators of 1895 who fled their seats in terror when the train entered La Ciotat station (in Lumière’s famous film), because they were afraid it would run them down” (73).

Rather, argues Metz, than relegating such viewers to another time, prior to and different from the present, when such credulity is understood to have been overcome, we should acknowledge the persistence of the tendency to believe, discovering in it the basis for the cinema’s capacity to produce such a compelling impression of reality *and* the means with which to resist the confusion of that impression with actual reality. “The credulous person is, of course,” writes Metz, “another part of ourselves, he is still seated *beneath* the *incredulous* one, or in his heart, it is he who continues to believe, who

⁵⁷ See Bottomore. Bottomore has quite conclusively shown that the famous stories of viewers shrieking and ducking and fleeing the Grand Café, during the Lumière’s first public performance of the *cinématographe*, apparently under the mistaken impression that a train was really bearing down upon them, are in fact apocryphal, the result of self-interested retrospective accounts, which were more interested in extolling the effects of the new medium in the exaggerated idiom of marketing and PR than in producing anthropologically accurate descriptions. From the very first, it seems, audiences were able to quite clearly distinguish between the cinematic image and perceptual reality.

disavows what he knows” (72).⁵⁸ It is this very disavowal that allows the cinema to produce such profound and dire confusion in the psychologically vulnerable spectator, who refuses to acknowledge the presence within of a credulous other, who is instead relegated to the realm of the distant past or to the fiction itself where he becomes literally separate from oneself. “[B]y a symmetrical and simultaneous movement,” explains Metz, “the incredulous person disavows the credulous one; no one will admit that he is duped by the ‘plot’. That is why, Metz argues, the instance of credulousness is often projected into the outer world and constituted as a separate person, a person completely abused by the diegesis,” citing the historical accounts of the audience at the Grand Café, and the recurring instances, in fiction and film, of the *naïf*, “the character of the ‘dreamer’ – the sleeping dreamer – who during the film believed (as we did!) that it was true, whereas it was he who saw it all in a dream and who wakes up at the end of the film (as we do again)” (72, 73).

The “Real” in Cinema

Metz’s analysis was elaborated in response to the most obvious and compelling aspect of (mainstream, narrative) cinematic representation – its unprecedented realism – which he was determined to demonstrate is no more related to reality than the abstract

⁵⁸ Metz concludes this sentence parenthetically with an explicitly psychoanalytic description of this credulous person, who is “he for whom all human beings are still endowed with a penis” (72). The moment of shock at the Grand Café, is then, by comparison, the equivalent of the primal scene, where the child is confronted by the fact of the mother’s lack of a penis. In the face of this evidence, the child nevertheless persists in the belief that “all human beings are still endowed with a penis,” a belief that is ultimately suppressed, but which still functions in the unconscious. Similarly, despite our knowing that we are only ‘at the movies,’ and that the train will not run us down, we still harbor the unconscious and irrational belief that it will – we are perpetually in the Grand Café, but are no longer able to flee. For a useful and critical account of Metz’s use of the psychoanalytic concepts of fetishism and disavowal, and his “antiocularcentrism,” see Jay (481-91).

representation of language and other culturally determined systems of representation. On the basis of such efforts, theorists were to become dedicated to the rejection and refutation of any realist tendencies within film theory. Robert Stam, *et al.*, in their lexicon of film semiotics, argue that the most dramatic and productive moment in film theory was its “break” with and rejection of the faith in a relationship between film and reality and the initiation of the rigorous methodology of semiotics. “Ever since film theory broke free,” they write, “from the impressionistic debate about auteurism and ‘realism’ which had dominated film-critical discourse through the early 1960s, film semiotics and its developments have been at the center of the analytic enterprise in film” (x).⁵⁹ Metz’s influence, and his defense of linguistics and semiology, is credited with the success of the endeavor and the triumph of a Saussurean-based approach to film theory. “The key figure,” they write, “among the filmo-linguistic pioneers was Christian Metz, whose purpose, as he himself defined it, was to ‘get to the bottom of the linguistic metaphor’ by testing it against the most advanced concepts of contemporary linguistics” (33). They detail the profound effect that a linguistically-inflected semiotics, or semiology, has had on the study of the cinema, radically shifting the emphasis from the “reality” of the filmic image to its conventionality, and effectively demarcating theoretical battle lines. “A clear trajectory,” they write, “takes us from the emphasis on realism, in the film theory of the 1950s and early 1960s, to a relativization and even attack on realism in the name of reflexivity and intertextuality in the late 1960s, 1970s and 1980s. This trajectory takes us from an ‘ontological’ interest in cinema as the phenomenal depiction of real-life

⁵⁹ Francesco Casetti is also interested to insist upon the epochal character of Metz’s work, and the deep and dramatic effect it has had on subsequent work in film theory. Casetti describes a “Metzian breach,” which he argues occurs in 1964 with the publication of “Cinéma: langue ou langage?” See Casetti (89-91).

‘existents,’ to an analysis of filmic realism as a matter of aesthetic convention and choice” (184). A brief and informative characterization of the history of film theory over the last three decades is then offered:

Film theory thus gradually transformed itself from a meditation on the film object as the reproduction of pro-filmic phenomena into a critique of the very idea of mimetic reproduction. Film came to be seen as text, utterance, speech act, not the depiction of an event but rather an event in itself, one which participated in the production of a certain kind of subject. (184)

Metz, and contemporary theory generally, were concerned, through such a critique of “the very idea of mimetic reproduction,” to dispel, once and for all, any naïve, residual notions about the cinema’s relation to the world, to reality (as well as the elaboration of a film-viewing “subject,” who is understood to be the figure whom the cinema endeavors to convince of its “reality”). In this respect, though, film semiology, and other semiologically inflected theories of cinema, continue a long-standing tradition, initiating their analyses with the question of the cinema’s adequacy when compared to reality. While they are concerned to reject such a notion, it is nevertheless *the* question with which they feel obliged to begin. The seemingly inescapable fact of the cinema, the fact that has concerned virtually all those who have considered the cinema’s effects and its capacities, is the fact of reality, and the two responses available to theorists has been to either celebrate the cinema’s relation to and *re*-presentation of reality, or to insist that such a relation is no more than imposture and illusion, a disparity that Cavell had attempted to overcome. For those within the semiological tradition, the choice had been clear, and the rejection of a “realism” became the primary task. It has been centrally important to show that the “real” is merely an effect, an impression, a feeling, and that the cinema’s effect is no different from any other art, except, that is, in its quality or degree, in the scale of its effect. Even more, though, than merely demonstrating that

cinematic realism is no more than effect, the very question of reality is raised in order to be rejected in its entirety. The history of film theory, in so far as it had even contended with such a question, is revealed to have been misguided, naïve, functioning in an “impressionistic” manner, requiring the rigor and determination provided by semiology. The triumphs described by Stam *et al.* were prefigured in the increasingly severe stance of film theory, as manifested, for instance, in the delineation by Brian Henderson between “two types” of film theory, the choice between which had, by 1971, become stark and unquestionable. In a critique of a long-standing tendency in film theory to rely on what he calls “part-whole theories” and “theories of relation to the real,” or “imitation theories,” Henderson bemoans the “backwardness of film theory that they are still the principal approaches in its field” (400, n. 1). Henderson considers what appear to be two otherwise incommensurate positions, those of Sergei Eisenstein and André Bazin, insisting that they both “seek to relate cinema to an *antecedent* reality, that is the reality out of which it develops in becoming art” (400). Henderson describes the necessarily different approaches of the two, but concludes that “[t]he real is the starting point for both Eisenstein and Bazin” (390). In one fell swoop he endeavors to reject classical film theory in its entirety, represented here by the two traditionally opposed figures who are shown to have been equally mistaken. Essential to both theories is what Henderson describes as the nexus of cinema and reality. “As we have seen,” he writes:

Eisenstein defines this nexus very narrowly, and Bazin never allows cinema to break with the real at all. It is difficult for me to find any value in this approach whatever: such theories would keep cinema in a state of infancy, dependent upon an order anterior to itself, one to which it can stand in no meaningful relation because of this dependence. We no longer relate a painting by Picasso to the objects he used as models nor even a painting by Constable to its original landscape. Why is the art of cinema different? The answer in terms of “mechanical reproduction” assumes an answer rather than argues one. Similarly from an ideological point of view, only when we begin with the work (rather than with the real as Eisenstein and Bazin do) and establish it fully in its internal

relations, that is, as a totality, can we then turn it toward (or upon) the socio-historical totality and oppose the two. (Or rather allow the work itself to oppose.) It is clear that nothing less than a totality can oppose or criticize a totality. It is also clear that something still dependent on reality, indeed still attached to it, can in no sense criticize or oppose it. (400)

I have quoted Henderson at some length, as his formulation quite concisely and forcefully captures the main hopes of a formal and political film theory that was being elaborated in such strident and dismissive terms at the time. The stakes seemed high, and it had become of paramount importance to resolve what Henderson saw as an inevitably distracting question, the dispensation of which would finally allow film theory to do its more important cultural and political work, and to establish a clear and rigorous critical posture. Yet despite such hopes, the question of the relationship between cinema and reality stubbornly persisted, and the formal politics of contemporary film theory were not enough to dispense with it, precisely because of the status of the cinema as a mode of “mechanical reproduction.” The means by which the cinema produced its images – photographically, which is to say, automatically and autonomously, by means of an impersonal mechanical process – maintained the sense that they bore *some* relation to the real objects and individuals of which they were an inscription, and therefore *some* direct relationship to reality. Despite the many efforts of theorists determined to reject such notions, the photographic character of film made it difficult to construct an argument for the cinema as an entirely formally independent totality. The photographic, “mechanical” fact remained the one inassimilable and unavoidable aspect of the cinema, yet it was the one fact that contemporary film theory undertook to expel from its analyses. In order to buttress its more strictly theoretical claims, film theory grounded them in more urgent terms, following the line initiated by Metz, whereby the *need* for a semiological analysis is offered as a response to its shortcomings. Central to the semiological project of film

theory is, as we have seen, the task of revealing the *risks* inherent in cinematic representation, and a calling to account of the cinema's realistic pretensions.

These risks were often presented in explicitly ethical terms. Jurij Lotman has rigorously pursued this logic, discovering an ethical imperative in the critique of cinematic realism. "Every art," writes Lotman, "is concerned, to some extent, that a feeling of reality be conveyed to its audience. The cinema is foremost in this respect" (10). Yet despite having this in common with the other arts, there is something, argues Lotman, which distinguishes the cinema, which places it in quite another category, disguising its very status *as* art. The cinema seems more convincing, more vital, than the traditional arts – not just more realistic, but more real. Confronted by cinematic imagery, the viewer has the impression of being in the presence of the objects and events that are represented: "no matter how fantastic an event taking place on the screen might be," insists Lotman, "the audience is a witness to it and, in a sense, a participant in it [...] it reacts emotionally as it would to a genuine event" (10). The film viewer seems, that is, susceptible to an extreme form of misapprehension, mistaking image for reality, confusing the representation for the thing represented, falling into error and confusion. This is the result, primarily, of the specific character of the film's material, of its photographic nature. The photograph, argues Lotman, replaced verbal and textual testimony in the nineteenth and twentieth centuries, becoming the most unimpeachable form of representation, becoming something, perhaps, *other* than representation. The photograph, he argues, "possessed all the credentials of being unconditionally documentary and true, and was perceived as something opposite to culture, ideology, poetry, tendentiousness of any kind – as life itself in its reality and genuineness" (11). A

border seemed to have been crossed, a limit overcome. With the addition, by means of the cinematographic apparatus, of movement, the photograph had effectively become indistinguishable from life itself. "Precision in the reproduction of life, it was thought, could go no further" (11).

Lotman's task, though, is to demonstrate that the cinema, consisting of moving photographs, and relying for its effect on the presumption of absolutely precise reproduction, is *nevertheless* as wholly conventional as any other art, and that the cinema consists, as does all art, of signs. As such, the cinema is as (if not more) capable of producing falsehoods as it is of revealing truths, and is no different from any other semiotic phenomenon in that respect. "Signs," writes Lotman, "although called upon to serve information, have often been used for purposes of disinformation" (10). Signs, he insists, have long been equated with lies, and the basic struggle at the centre of human culture has been to try to distinguish between reliable and unreliable representations, between, that is, the true and the false. A long and venerable philosophic and aesthetic tradition has concerned itself with such questions, and while the problem has certainly never been a simple one, there was at least the primary distinction between life and art that could be maintained, even if the relationship between the two was complex and often troubling. The cinema, it seems, has rendered this distinction more problematic than it has ever been, presenting audiences with such direct and immediate imagery that there is little choice but to believe what one sees, and the border between the true and the false seems almost to have disappeared. "The emotional faith of the audience," writes Lotman, "in the genuineness of the material being shown on the screen involves cinematography with one of the most important problems in the history of culture" (10). It has, moreover,

rather precipitously raised the stakes of this problem, and revealed the moral issues that arise when the line separating art and life becomes indistinct, as Lotman is careful to emphasize. Possessing an unprecedented degree of “authenticity,” the cinema walks a fine line between performing a properly artistic function and pandering to the worst voyeuristic tendencies among viewers, in presenting itself as “real”:

In the realm of ideology, “authenticity,” on the one hand, made the cinema an exceedingly informative art and guaranteed it a mass audience. But, on the other hand, it was just this feeling of the genuineness of the pictures that activated in the first cinema audience those unquestionably base emotions which are typical of the passive observer of genuine catastrophes, auto accidents, and which appeased the quasi-aesthetic and quasi-sporting emotions of audiences at Roman circuses – not unlike the reactions of present-day fans of Western automobile racing. The base emphasis on the spectacular, fed by the viewers’ knowledge that the blood which he sees is real, and that the disasters are genuine, is exploited for commercial purposes by contemporary Western television which arranges reports from the theater of military activities, and the showing of sensational, bloody real-life dramas. (12)

The aesthetic development of the cinema that Lotman goes on to describe is motivated by the potential for this sort of breakdown that always exists with the cinematic sign (and which, he argues, is explicitly capitalized upon in the case of the televisual sign). As the cinema has endeavored to become an art, it has had to contend with the apparent immediacy and directness of its basic material, which, through the elaboration of specific aesthetic techniques and strategies, it has, at its best, sought to keep at bay. At its worst (and the cinema at its worst, Lotman suggests, may be television), the cinema exploits its fundamental indeterminacy, thereby allowing the audience to succumb to its more “base emotions,” exploiting the loss of the distinction between art and life. Freed of the usual constraints, an audience may look, unseen, upon a world that has appeared, it seems, as spontaneously as the real world, but towards which they have no ethical or moral responsibility.

Aesthetics and ethics, then, are intimately connected in the case of the cinema, as they have never been, perhaps, in the history of art. The cinema's aesthetic responsibilities are indistinguishable from, or entirely bound up in, its ethical responsibilities. Roland Barthes has made this point many times, but perhaps no more clearly than in his discussion of the representation of Romans in Hollywood cinema, in its mobilization of a few specific signs of Roman-ness – the curled frontal lock of hair on an actor's forehead, to designate the Latin physiognomy; or the beads of sweat on the faces of those subordinated to Roman rule, soldiers, laborers, slaves – each of which, while appearing perfectly natural, functions, nevertheless, as a sign. A sign, asks Barthes, of what? “Of moral feeling. Everyone is sweating,” he says, “because everyone is debating something within himself; we are here supposed to be in the locus of a horribly tormented virtue, that is, in the very locus of tragedy, and it is sweat which has the function of conveying this” (*Mythologies* 27). Despite their efficiency, however, such signs are, for Barthes, deeply objectionable, they are “at the same time excessive and ineffectual: they postulate a ‘nature’ which they have not even the courage to acknowledge fully: they are not ‘fair and square’” (27).

The sort of semiotic fairness that Barthes calls for, and which will be pursued with such vigor with the subsequent elaboration of an explicit film semiology, is contrasted with the “ambiguity” of this sort of sign, its obvious stylization and conventionality which is nevertheless belied by its apparent naturalness. Such a sign, he says, “aims at making people understand (which is laudable) but at the same time suggests that it is spontaneous (which is cheating); it presents itself at once as intentional and irrepressible, artificial and natural, manufactured and discovered” (28). There are,

Barthes insists, certain semiotic standards that should be adhered to, in order to avoid such equivocation, and which, he says, “can lead us to an ethic of signs” (28). Signs should not, he argues, occupy this middle ground. They should, he says, “present themselves only in two extreme forms:

Either openly intellectual and so remote that they are reduced to an algebra, as in the Chinese theatre, where a flag on its own signifies a regiment; or deeply rooted, invented, so to speak, on each occasion, revealing an internal, a hidden facet, and indicative of a moment in time, no longer of a concept (as in the art of Stanislavsky, for instance). (28)

An ethical use of signs would necessarily proscribe the employment of what Barthes calls “intermediate signs,” which appear to be natural, and which are surreptitiously made to bear an insupportable conceptual weight, without seeming to do so. This, he appears to be saying, lowers a viewer’s defenses, and results in confusion:

[T]he intermediate sign, the fringe of Roman-ness or the sweating of thought, reveals a degraded spectacle, which is equally afraid of simple reality and of total artifice. For although it is a good thing if a spectacle is created to make the world more explicit, it is both reprehensible and deceitful to confuse the sign with what is signified. And it is a duplicity which is peculiar to bourgeois art: between the intellectual and visceral sign is hypocritically inserted a hybrid, at once elliptical and pretentious, which is pompously christened ‘*nature*’. (28)

The confusion of sign and nature, of art and life, as we can see from the examples of Lotman and Barthes, has often been posed unabashedly in moral, ethical and political terms. The failure to clearly distinguish between the realms of the real and the artificial, the natural and the conventional, has been understood to have inevitably negative consequences, as viewers are effectively deceived, as they mistake the sign for its object, and confuse the natural spontaneity of the world with the apparently motivated conventionality of the representation. More specifically, the world is represented – in photographs, and in the cinema, which are themselves only the latest and perhaps most fully realized instances in a long tradition of realism – *as though* it were spontaneously available to perception and cognition, as though the directness and immediacy of the

photographic image mirrored a naturally immediate relationship between individual and world, thereby allowing for a subtle but profound, and profoundly insidious, confusion. The sorts of suspicions that govern semiological analyses were give their most concise expression by Umberto Eco, who endeavored to give semiology, or semiotics, a general but not overly ambitious or “arrogant” definition, which earlier definitions had risked. “When a discipline defines ‘everything’ as its proper object,” he suggests, “and therefore declares itself as concerned with the entire universe (and nothing else) it’s playing a risky game” (*Theory of Semiotics* 6-7). Eco is concerned, then, to be more precise, and provides semiotics with what he thinks is both an elegant and exhaustive definition, designating the one function that all semiotic phenomena, all signs, are understood to have in common:

Semiotics is concerned with everything that can be *taken* as a sign. A sign is everything which can be taken as significantly substituting for something else. This something else does not necessarily have to exist or to actually be somewhere at the moment in which a sign stands in for it. Thus *semiotics is in principle the discipline studying everything which can be used in order to lie*. (6; emphasis in original)

Signs and Non-Signs

Such a definition, however, poses certain difficulties, when considering those signs which seem to have been produced precisely by “something else,” “natural” signs that necessarily require some other object for their generation – footsteps, for example, that may be produced only by a real foot, or fingerprints that are the result of real fingers having been pressed upon a surface. In what sense could such signs be understood to lie? How might such signs be understood to overcome their apparently essential (if rudimentary) truthfulness? Similarly, mechanically produced images – photographs and cinematic images – seem, at a certain basic level, to require something of which they are

“true” representations, some other objects from whose surface light had reflected, leaving an impression as direct and referential as a footprint or a fingerprint. Eco’s answer is to insist that once such signs are put to a particular semiotic use, once they are placed within the realm of cultural interpretation, they then assume the basic semiotic capacity for deception. Photographs, then, are of no semiotic interest except in so far as they are understood to be capable of deception. “We know,” he says, in *Semiotics and the Philosophy of Language*, “that, through staging, optical tricks, emulsion, solarization, and the like, someone could have produced the image of something that did not exist” (223).

A photograph, as a sign, need not, indeed, may not, have a real referent. In order to understand the semiotic aspect of the photograph, reference, in fact, must be expelled as a consideration. What is necessary, he insists, is the basic *separation* that is suggested in his definition between sign and referent. We make what Eco calls, in *Theory of Semiotics*, “inferences” all the time, based upon the observation of so-called natural signs. “We are able to infer from smoke the presence of fire,” he writes, “from a wet spot the fall of a raindrop, from a track on the sand the passage of a given animal, and so on” (17). Yet he is reluctant to automatically include such acts with the realm of semiosis. “It is incorrect to say that every act of inference is a ‘semiotic’ act – even though Peirce did – and it is probably too rash a statement to assert that every semiotic process implies an act of inference, but it can be maintained that *there exist acts of inference which must be recognized as semiotic acts*” (17; emphasis in original). It may be so, however, only once there has been a *convention* established relating smoke with fire, wet spots with rain, and only when the smoke is understood to represent a fire that is not visible, enacting the basic semiotic necessity of the (potential) non-existence of an object or referent.

“Smoke,” insists Eco, “is only a sign of fire to the extent that fire is not actually perceived along with the smoke; but smoke can be a sign-vehicle for a non-visible fire, provided that a social rule has necessarily and usually associated smoke with fire” (17). What cannot be entertained, as far as Eco is concerned, is the possibility that the truth of a sign can be determined by any means other than socially and culturally determined convention, which would imply that the smoke is necessarily related to fire *regardless of whatever we may think of the two phenomena*. There is, for Eco, no way of establishing such a fact with complete certainty. We can only ever know what we have decided. “There is a sign,” he argues, “every time a human group decides to use and to recognize something as the vehicle of something else” (17).

Phenomena that seem, then, to refer directly to specific objects or referents, cannot be considered within the realm of semiotics, and Eco was concerned, as we have seen, to rid semiotics of both so-called icons and indices, of both iconic and indexical representation, which were understood to belong to a different order of signification. Considering the example of verbal pointers or deictics – words such as /this/ and /that/, /here/ and /there/ – Eco notes that Peirce had included them within the larger category of indices, or, as Eco would have it, “natural” signs. Yet, he argues, they must be understood to possess a semiotic function only when they are seen to have been granted one. While they do, like footprints or a pointing finger, “have a sort of causal connection with the object to which they refer, they are not natural signs and are artificially, indeed even arbitrarily, chosen” (115). Anything that seems to function in a distinctly indexical manner, by *pointing* in some relatively direct way to the object or referent, is to be excluded from a (non-referential) theory of semiotics. “If,” following the terms of such a

theory as Eco had elaborated them, “a sign is a correlation between an expression and a content (*independently of the actual presence or existence of any referent*) how can one call a shifter like /this/, which receives its semiotic character from the presence of an actual object, a sign?” (115; emphasis added). Eco insists that such verbal indices, like smoke related to fire, function even, or especially, when they refer to something that is not there. They are “understood even if the presupposed event or thing [to which the shifter refers] does not or never has existed” (116). These are the grounds upon which so-called indices in general may be incorporated into Eco’s semiotic theory. “Neither the presence of the supposedly connected object,” he insists, “nor of the supposedly connected contextual item is necessary to the comprehension of a verbal index” (116). All that is required is that a convention be learned whereby /this/ is understood along such lines as “«I am naming through the shifter something which is not here, and which preceded the present statement»” (116).

Pursuing such an argument, according to the strict non-referential logic of his semiotic, Eco proceeds to reject all ostensibly “causal” phenomena, which are beyond the purview of his analysis. “A theory of codes,” he writes, “may well disregard the difference between motivated and arbitrary signs, since it is only concerned with the fact that a convention exists which correlates a given expression to a given content, *irrespective of the way in which the correlation is posited and accepted*” (121; emphasis added). This is not only beyond the scope and interest of a non-referential semiotic, or theory of codes. Eco makes the even stronger claim, that “there is no need to have something close to a pointing finger for that finger to acquire a meaning. The pointing finger has a seme of «closeness» and this semantic marker is grasped even if one points

into empty air. The presence of the actual thing is not necessary to understand the pointer as a sign [...]” (184-5). The causal, motivated, analogical quality of phenomena traditionally understood as “natural” signs or indices is presented by Eco as insignificant from a semiotic point of view. He insists, instead, that they acquire significance *only* once they have been associated with a specific convention, which may be an entirely arbitrary association. A pointing finger, he argues, may well be motivated “by the spatial coordinates of the object, but the choice of a pointing finger is highly arbitrary” (190), proof of which is provided in the form of anthropological evidence. Eco notes that “the Cuna Indians use an entirely different device, the ‘pointing lips gesture’” (190).⁶⁰

This example, of course, does not prove that the choice is a *merely* conventional one, as Eco would have it. Whether one uses one’s finger, or lips, or tilts one’s head in the direction of the object being referred to, the effect is the same, and the gesture functions to isolate and draw an interlocutor’s attention to that object or event because directional forcefulness of the gesture. If the choice were truly conventional, then one could tap one’s toes, blink one’s eyes, touch one’s nose, and so on. According to Eco’s logic, as long as it was agreed that any of these gestures meant /this/ or /that/, it would function well enough semiotically, referring not to a real existent, but rather relating an expression and a content. One can see, however, how a pointing finger, or even pointing lips, are far more effective indexically than tapping toes or blinking eyes, and that the effectiveness derives precisely from the motivated or analogous quality of the gesture, and derives from the desire inherent in any pointing gesture to refer to *something*, to which one is endeavoring to draw someone else’s attention. The direction of the pointing

⁶⁰ Eco cites Sherzer.

finger is necessarily determined by the position of the object or event that one is endeavoring to draw another's attention to. Moreover, the success of the gesture will be determined according to how well that other's gaze conforms to the same spatial coordinates. The choice of pointing fingers or pointing lips is not arbitrary (or merely conventional) precisely in so far as it is chosen upon just such grounds of efficiency and effectiveness, the same grounds upon which a truly arbitrary choice – of tapping toes, for instance – will be rejected. In a very real and important sense, the pointing finger is directly determined by the thing it is indicating.

Yet, for Eco, it is important that a putative arbitrariness, or a more general conventionality, be the fundamental basis upon which he may then produce a “general theory of culture out of semiotics,” and “make semiotics a substitute for cultural anthropology” (27) In order for semiotics to perform such a role, it must necessarily see expression and communication as a fundamentally, even purely, *cultural* phenomena – which for Eco means “arbitrarily” chosen according to an agreed upon convention – and which may be analyzed and made subject to critique. “If semiotics is a theory,” Eco insists, “then it should be a theory that permits a continuous critical intervention in semiotic phenomena” (29). The grounds, again, upon which semiotics is based, are significantly normative, and determine that, despite the difficulties (*because* of the difficulties), semiotics must reject the belief that signs possess any natural or causal relationship to the objects or events to which they refer. Semiotics must be concerned to describe signs as *proposals*, so to speak. Culturally determined, conventionally bound representations of reality, signs are understood to refer only to proposed states of being,

essentially fictitious in their constitution, “lies” – defined primarily according to their distinctness and separation from objects and events of the real world.

Like indices, icons must also accordingly be dismissed, or be made to conform to the terms of cultural and conventional determination. Eco is concerned to demonstrate that icons, signs that are understood to “resemble” the objects to which they refer, are, like indices, ultimately reducible to conventional and cultural terms. As he insists, “similarity does not concern the relationship between the image and its object but that between the image and a previously culturalized content” (204). Through his detailed analysis, Eco “discover[s] elements of conventionality at the heart of ‘iconic’ procedures” (213), and concludes finally by “getting rid of ‘iconic signs’,” which amounts, he insists, to getting rid of the traditional notion of the sign itself, replaced by the concept of “sign-function,” by “modes of sign production,” by an analysis, that is, of the social and cultural activity of determining conventions and generating representations according to codes or “semiotic laws.” Semiotics is replaced by the more encompassing concept, ostensibly inherited and adapted from Charles Peirce, of “semiosis,” defined by Eco as “the process by which empirical subjects communicate, communication processes being made possible by the organization of signification systems” (316). We can, according to such a point of view, only know what we ourselves produce as knowledge – the strange self-referential mechanism of meaning production that Eco describes⁶¹ – to the extent that whatever lies beyond the purview of semiotic does not, or might as well not, exist. “What

⁶¹ In order to escape the charge that, locked into such a system, it is logically impossible to discover any new information or produce any new knowledge, Eco responds with an argument for the inherently *internal* character of such generation. It is not, he insists, a question of getting out of the system, or of there being a metalinguistic possibility for talking about the things we talk about. “When one asserts that there is no metalanguage at all, one confuses the theory of codes with the theory of sign production; empirical subjects can metalinguistically *use* the codes just because *there is no* metalanguage; for everything in a self-contradictory code is metalanguage” (316; emphasis in original).

is behind, before or after, outside or *too much* inside the methodological ‘subject’ as outlined by this book,” argues Eco, “might be tremendously important. Unfortunately it seems to me – at this stage – beyond the semiotic threshold” (317).

Eco is quite explicit in his indebtedness to Peirce, whose definition of a sign, when contrasted with the more familiar Saussurean definition, seems, to Eco, “more comprehensive and semiotically more fruitful” (15). Importantly, for Eco, Peirce defines semiotic as “the doctrine of the essential nature and fundamental varieties of possible semiosis” (Peirce 5.488. Qtd. in Eco 15.). The value, here, lies in Peirce’s emphasis on semiosis as an action, as an activity, which Eco would elaborate as a sign-function. Eco approvingly quotes Peirce’s definition of semiosis, as “an action, an influence, which is, or involves, a cooperation of three *subjects*, such as a sign, its object and its interpretant, this tri-relative influence not being in any way resolvable into actions between pairs” (Peirce 5.484. Qtd. in Eco 15), and his definition of a sign as “something which stands to somebody for something in some respect or capacity” (Peirce 5.484. Qtd. in Eco 15). Thus defined, Peirce’s concept of sign seems to enlarge the limits of the Saussurean model, in so far as “[i]t does not demand [...] the qualities of being intentionally emitted and artificially produced” (15). Indeed, the “Peircian triad,” unlike the dyadic Saussurean model, “can be also applied to phenomena that do not have a human emitter, provided that they do have a human receiver [...]” (Peirce 5.484. Qtd. in Eco 15). Eco then offers an emended version of Peirce’s definition of a sign, emphasizing the central role of the “receiver” who utilizes and depends upon conventions, as “*everything* that, on the grounds of a previously established social convention, can be taken as *something standing for something else*” (Peirce 5.484. Qtd. in Eco 15).

Signs and Sign-Functions

While deeply influenced by and indebted to Peirce, from whom he has inherited the concept of “semiosis,” the basis for his account of semiotic activity, Eco nevertheless saw what he conceived to be a significant flaw at the centre of Peirce’s semiotic. Eco is concerned to reject what he describes as the “untenable trichotomy,” the basic division of signs which are, Eco notes, paraphrasing Peirce “classified as *symbols* (arbitrarily linked with their object), *icons* (similar to their objects) and *indices* (physically connected to their object)” (178). As we have seen, the only element of this trichotomy that counts as a sign for Eco is the “symbol,” which he understands as arbitrarily or conventionally constituted. Both the icon and the index must be rejected, or, what amounts to the same thing, shown to be as arbitrarily constituted as the symbol. “It is,” Eco insists, “the basic assumption of the following pages that notions such as ‘icon’ or ‘index’ are all-purpose, practical devices just as are the notions of ‘sign’ or ‘thing’” (178). By “practical devices” Eco means that they are capable of performing the basic sign-function, according to the modes of sign *production*, which he has been concerned to describe in his theory. Neither the icon nor the index can be understood, within the domain of semiotics as defined by Eco, as anything other than conventionally determined phenomena. “The trichotomy could obviously be used,” he admits, “in order to discriminate between different kinds of mentions,” by which Eco means simple statements or representations of factual states of affairs, “but it becomes more disturbing in a classification of modes of sign production which tries to focus exclusively on the shaping of the signal (i.e. the expression continuum) and the correlation of that signal (as expression) with a content” (178). Icons

and indices, that is, may not be incorporated within a more general understanding of “semiosis,” construed by Eco as the activity of sign production, which, as an activity, can only be understood as occurring within the conventional terms of culture.

There needs, then, to be a distinction made between those aspects of phenomena that are semiotically significant and those that are not. This is especially important in the case of those phenomena that seem to derive their significance, or part of their significance, from a literal or direct connection or relation to the objects they represent. We have seen how Eco has rejected accounts of a pointing finger as inherently significant, insisting instead that its value is the product of our having agreed upon it as a convention for indicating location or spatial proximity. He applies such an analysis to a variety of other such phenomena, which have traditionally been understood to be meaningful in so far as they seemed directly connected to, analogous to, or even generated or motivated by, their objects or their referents. Considering the example of pictorial representation, of, for instance, “a painting of the Virgin Mary,” he insists that “it is ‘analogous’ to a woman, but it is recognized as the Virgin Mary because of a conventional rule” (190). Against traditional accounts of symptoms, he argues that “a certain type of fever is naturally motivated by TBC but it is due to a convention that it is recognized as a reliable medical symptom” (190). While a painting may be recognized as, because iconically similar to, a woman, he seems to be suggesting, it is only once that analogous representation is conventionally related to ideas of womanly qualities that it assumes semiotic significance. The act of painting a picture of woman with reference to either a real or imagined “woman” is to merely “mention” /woman/, rather than to say, in a semiotically significant manner, /women have the qualities.../, in this case the qualities

of virginity and holy immaculateness. While a fever may be the direct, indexical result of a particular disease, semiotically speaking it is of no interest unless and until it is catalogued in a symptomological handbook, and deployed according to a specific medical convention. Only once it is read as the expression – i.e., a “shaped signal” – of a particular content – the idea of “TBC” – is it properly within the realm of semiosis, of active sign production, the realm of artifice and convention rather than spontaneous and natural generation.

The traditional distinctions that had for so long governed thinking about kinds of signs, which he traces as far back as Plato’s *Cratylus*, distinctions between conventional and natural, arbitrary and motivated, and between digital and analog, are rejected by Eco, or at least presented as in need of a rigorous rethinking. The traditional pairings, first of all, are shown not to be exclusive, nor are the opposed categories necessarily synonymous. An analogical phenomenon may not necessarily be motivated or natural, while a conventional sign is not necessarily arbitrary or digital. More importantly, though, in his dispensing with “so-called” iconic and indexical signs, Eco is concerned to show that such traditional distinctions do not help to explain how sign-functions are elaborated. He is concerned to demonstrate that the so-called iconic sign is neither similar, analogous, motivated, *nor*, importantly, is it *merely* (or only, or necessarily) arbitrary. These distinctions, in and of themselves, do not, for Eco, explain the *semiotic* character of, for instance, a picture, which would naïvely, be understood as functioning in a primarily iconic manner. He is interested in proving that, like the word /dog/, “the image of a dog also signifies a dog by means of a cultural code of correlation” (191). The formula that Eco is keen to substantiate is: “that the so-called iconic signs, whether

arbitrary or not, are analyzable into pertinent coded units and may be subject to a multiple *articulation*, as a verbal signs” (192; emphasis in original). Similarity, analogy, motivation – but also digitalness, arbitrariness and conventionality – are not the semiotically pertinent aspects of representation, of expression. The generation, and the various possible modes of articulation, according to specific semiotic laws, or *codes*, are, for Eco, the basic elements of *semiosis*, and he is led ultimately to offer, as an alternative to the Peircean trichotomy of icon, index and symbol, and to the traditional distinctions of digital/analog, arbitrary/motivated, conventional/natural, a “typology of modes of production” (217). He is concerned to catalogue “the way in which expressions are physically *produced*,” as well as the means by which such expressions are correlated to their content, the entire enterprise elaborated within cultural constraints.

Eco’s typology is meticulous and complex, and does not need to be pursued in any detail here. What is important to acknowledge, however, is the effort he expended in elaborating the means whereby phenomena traditionally understood to be primarily analogical or motivated, iconic or indexical, are firmly placed within the realm of cultural convention. Pointing fingers and medical symptoms are the least contentious of such phenomena. Paintings, drawings and other figural representations, which had troubled semioticians and conventionalists precisely because of their obvious similarities to the objects they represented, which seemed to override any conceivably semiological or linguistically-based analysis, are shown by Eco to be analyzable once one effectively disregards their analogous qualities. What is to be analyzed is not the picture in its similarity to any real (or even imagined) object, but rather the conventional modes by which they are ascribed meaning or significance. This is as true of the even more

troubling phenomena of photographic and cinematic imagery, which not only resemble what they represent, but seem directly connected to or motivated by their objects according to the photo-mechanics of the camera. The first clue to the potential semiotic analysis of the photographic image, though, is revealed once one considers the breakdown of the traditional distinctions or oppositions: “a photograph,” writes Eco, “is perhaps ‘motivated’ (the traces on the paper are produced by the disposition of the matter in the supposed referent) but it is digitally analyzable, as happens when it is printed through a raster” (190). These two factors, however, are not the most significant, when considering the photograph within the realm of semiosis. Rather, the photograph can be placed within the more general category of “imprints,” which may, according to his typology, be “recognized.”⁶² “Recognition” is a cultural activity, governed by certain sets of conventions, which “occurs when a given object or event, produced by nature or human action (intentionally or unintentionally), and existing in a world of facts as a fact among facts, *comes to be viewed by an addressee* as the expression of a given content, either through a pre-existing and coded correlation or through the positing of a possible correlation by its addressee” (221). As the object of a particular act of correlation, a recognized entity is anything, which may be transformed, once recognized, into an expression, regardless of its origins. “In the *recognition of imprints*,” explains Eco, “the expression is ready-made” (221). This, though, is not the source of significance, which derives, rather, from the criteria employed in order for recognition to occur. This all amounts to a simple point of fact for Eco, a fact that is, though, fundamental to his

⁶² The other categories that may be recognized are “symptoms” and “clues.”

theory. “All this,” he explains, “means that, first of all, one must *learn* to recognize imprints (or to fake them)” (221).

Semiology and Its Discontents

Eco’s critique of natural signs, his rejection and expulsion of icons and indices from the purview of semiotics, was powerful and influential. His theory of semiotics, explicitly presented as a corrective to and emendation of structuralism, which Eco argued ran the risk of reifying its notion of structure and thereby tended to think of the sign in rather too static terms, breathed new life into the semiological enterprise which, from its very first moments, had been confronted with its shortcomings. Structuralist semiology, which claimed a significant generality, which would allow it to be applied to all manner of meaningful phenomena, was especially confounded by the complexities of visual and pictorial representation, which seemed to exceed and defy semiological description and analysis. Eco’s more dynamic account of a sign-function, his elaboration of the modes of sign production, construed as an activity, as a deliberate rendering of signs according to specific cultural conventions, offered the possibility of incorporating such phenomena into a semiotic or semiological analysis. Eco was especially concerned that visual and pictorial phenomena be amenable to semiotic analysis, which was for him, importantly, a mode of cultural critique. A semiology would be of little use and interest if it could not legitimately expand its critical purview to include such obviously significant phenomena as pictures and paintings, and especially such profoundly popular and influential media as photography and cinema.

Eco had already risen to the challenge that Metz had set for the semiological analysis of cinema, and in 1968 he had attended to the specific problem of double articulation in the cinema, arguing that while this is what characterized natural language, it was not an exclusive requirement for semiologically analyzable phenomena. The cinema, he insisted, was actually characterized by a capacity for multiple articulations, and Eco describes the various signs and semes that combine to produce the cinematic image, reconceived as “cinemes” and “cinemorphs.”⁶³ While this was to provide the means by which the cinema could be shown to be a “‘strong’ semiological system” (Casetti 135), Eco ultimately felt that such a literal application of a linguistic analysis was the wrong approach, and proceeded, instead, to develop the more dynamic model of sign-function and sign production. As we have seen, this depended crucially upon the rejection of those signs which seemed to exist independently of any deliberate act of production, or, more precisely, to dispense with the “naïve notions” that had for too long governed thinking about so-called natural signs, about those phenomena described as icons and indices. While he had had recourse to certain concepts from the semiotic of Charles Peirce, most notably the concept of semiosis, he was concerned to reject Peirce’s inclusion of the icon and the index in the category of signs, since they could not be construed to have been “produced.”

Eco’s alterations and revisions were part of the more general shift away from a strict, scientific structuralism towards more complex post-structuralist accounts of representation and meaning, which tended to acknowledge those more subtle, even

⁶³ Eco’s account of the multiple articulations in the cinema is summarized in Casetti (135). See Umberto Eco, *La struttura assente* (Milan: Bompiani, 1968). An English version of the section is Umberto Eco, “Articulation of the Cinematic Code,” in Nichols, *Movies and Methods*, Vol. 1 (590-607).

ineffable, aspects of signification which derived from the processes of reception and interpretation. The “reading” or reception of texts quickly became the focus of a newly conceived semiological analysis, which had begun to move away from its strictly formalist accounts of “writing” or textual elaboration, from accounts of the putative “structure” or constitution of texts. As Dudley Andrew noted, writing in 1978, “[e]ven old-guard semioticians like Umberto Eco have had to steer their ‘objective science of signs’ into the murky areas of the psyche where art, novelty and interpretation reign, weakening their structural model through overtaxation” (626). Eco, of course, saw his move to a consideration of the more active processes of sign-production in acts of reception and interpretation as *strengthening* the structural model, upon which even such dynamic interpretive activities must be based. “The structural arrangement of a system” he insists, “makes a situation comprehensible and comparable to other situations, therefore preparing the way for a possible coding correlation” (*Theory of Semiotics* 40). Nevertheless, the complexity of readerly responses, the intricacy and potentially infinite possibilities of “coding correlations” led many former structuralists to elaborate ever more Byzantine accounts of interpretation as open-ended and unlimited, so that whatever structure might ultimately underpin and guide such activities became obscured to the point of practical invisibility. Structure itself, then, may have been a casualty of *post-structuralism*, which Andrew describes as “a shift of interest from the text considered as a formal structure to the dynamics of textuality taken to be a floating process of structuration and deconstruction which mainline structuralism had ruled out of bounds” (626).

Andrew's comments are offered in the context of his account of the shortcomings of structuralist film theory in particular, which is contrasted with what he describes as the "neglected tradition" of phenomenological theories of film, which he proposes as an alternative to structuralism, which even in its *post-* phase is incapable of accounting for the full extent and quality of the cinematic experience. It is only phenomenology, argues Andrew, which might fully describe the experience of the cinema. Structuralism, he insists, had too strictly limited the purview of film theory, which was unable to account for more than the most obvious aspects of filmic codes and articulations. The limits of structuralism were such that the project was almost immediately subject to reconsideration and revision, as it endeavored to grasp the more unaccountable qualities of representation and reception. Yet, as Andrew argues, even in its revisions, basic structuralist assumptions were maintained. Despite its apparently radical rejection of the concept of structure for those of "structuration and deconstruction," insists Andrew, post-structuralism nevertheless remained within proscribed limits. While certainly valuable as an account of certain aspects of the cinematic phenomenon, it was destined to remain at a specific and limited level of description and analysis. "We can speak of codes and textual systems," argues Andrew, "which are the results of signifying processes, yet we seem unable to discuss that mode of experience we call signification" (627). Andrew is concerned, more precisely, with what he describes as "the 'other-side' of signification," with that realm of experience that seems to come *before* signification, the constitution of which is irreducible to codes and rules, customs and conventions, and which exceeds and even denies structural organization, or even disorganization or deconstruction. It is one thing to describe how structures of meaning are elaborated and even how they are

contended with, or even how they are defied and dismantled, but it is quite another to describe how something may come to be experienced as structurally significant. Structuralist and semiological theory, he insists, has been “disinclined to deal with [...] those realms of preformulation where sensory data congeal into ‘something that matters’ and those realms of post-formulation where that ‘something’ is experienced as mattering” (627).

This was especially problematic in the case of the cinema, which seemed to reproduce and represent (or perhaps even directly *present*) pre-structured experience in ways that dramatically highlighted the limits of structural analysis. The difficulties faced by structuralist film theory seemed to reveal most acutely the boundaries of such an analysis, which even a radically revised post-structuralism was unable to overcome. The limits of structural or even post-structural analysis were the basic and debilitating constraints that had prevented film theory from even contending with, much less accounting for, the more excessive and exceptional aspects of the cinema, which are precisely determined to be unaccountable. The emphasis was solely on what could be accounted for with the tools of structural analysis, rather than on the means by which the cinema produced that “something,” which could then be subjected to analysis. “Structuralism,” argues Andrew, “even in its post-structuralist reach toward psychoanalysis and intertextuality, concerns itself only with that something and not with the process of its congealing nor with the event of its mattering” (627).

What is missing from film theory, that is, as far as Andrew is concerned, is any substantial account of *meaning*, or the creation of the possibility of meaning, the *source* of meaning. Those aspects of the cinematic image which seem to point to the realm that

Andrew endeavors to describe, to the realms of experience, “pre-formulation,” and immediacy, which provide the grounds upon which the cinema comes to “matter,” are just those that semiology has been so concerned to reduce to or incorporate within accounts of codes, texts, systems and structures. Yet they linger in most such accounts, hovering on the surface or at the edges, failing to succumb to the most elaborate descriptions of multiple articulation, sign-production, or intertextuality, to analyses of condensation, disavowal or fetishism, or to explanations of the cinema’s powers of interpellation, its ideological deformations, or its fundamental constructedness. In some way or other, the cinema’s simple present-ness, its apparent directness and immediacy, seem to stand in stark contrast to notions of its constructedness, a distinction that is routinely commented upon. “The cinema,” admits Bill Nichols, in *Ideology and the Image*, his account of *social* representation in the cinema, in his detailed *ideological* account of the cinematic and photographic image, “is a strongly representational art; it presents us with recognizable figures or objects whose lifelikeness is sometimes uncanny” (10). Having acknowledged the “uncanny” quality of the cinematic experience, though, its strange immediacy and directness, Nichols is concerned to demonstrate how, in the hands of a canny analyst, such an experience may be revealed to be an effect, the result of a specific and entirely textual system, to demonstrate the degree to which the cinema’s representations are no different from those of any other medium, that the film is, according to the familiar semiological equation, a text, only a “coded” representation of reality.

Nichols work is of undeniable importance, and to the degree that he places the production and reception of cinematic imagery within specifically social and ideological

contexts he reveals a great deal about the force and power of cinema, and reveals the need for a critical vigilance and awareness. Yet the accounts of Nichols and others avoid any consideration of the potential origins of such power, and they seek to dispense with even their own initial sense of the “uncanny lifelikeness” of cinematic imagery, which is resisted, and merely reduced instead to the work of structured systems of encoding and decoding, reconceived in “textual” terms. Such efforts are not without value or significance, unless they are presented as exhaustive and comprehensive accounts of the cinematic experience, which is common. What is required is a more robust account of the production of textual possibilities, a consideration of the grounds upon which the cinema may be subject to, for instance, a structural analysis. As Andrew insists, “the classification of general formal codes in the cinema, while necessary, must not retard the far more pressing tasks of describing the peculiar way meaning is experienced in cinema and the unique quality of the experience of major films. In neither of these cases,” Andrew maintains, “will general codes take us very far” (627-8).

Yet Andrew himself never proceeds beyond a rather vague account, insisting that the cinematic experience is merely “peculiar” or “unique.” Nor does he make it clear how the rational, structural analysis of the cinema, the importance of which he explicitly acknowledges, might in fact be reconciled with an account of the more ineffable qualities of the cinema.⁶⁴ Andrew looks to the French phenomenological tradition, derived from

⁶⁴ Andrew has never really fulfilled his project of a phenomenological film theory, which would consider the basic relationship between cinema and reality. In fact, he has implicitly suggested that such a project has been superannuated by the advances of digitization. Citing Bazin’s account of the photographic image, which is “like a phenomenon in nature, like a flower or snowflake whose vegetable or earthly origins’ significantly affect our relation to them,” he concludes that “today’s and certainly tomorrow’s digitally produced simulations for computer and video screen claim no earthly or vegetal origins and pose new questions that, before being sociological and aesthetic, are fundamentally ontological.” Cinema’s images, in this new context, have, significantly, lost their capacity for reference. “The modern era may be

the work of Jean-Paul Sartre, Maurice Merleau-Ponty and Mikel Dufrenne, all of whom, he notes, showed some interest in the cinema in so far as it seemed to correspond to certain aspects of their accounts of perception and experience. Andrew briefly describes the accounts of those who have pursued the study of the cinema on the basis of such a tradition, from what he says, “can only be called a phenomenological perspective” (628). He considers the work of Gilbert Cohen-Séat and Edgar Morin, who elaborated a “filmologie,” which, he says, “from the first was marked with the phenomenological brand for it sought to describe cinema as a phenomenon among other phenomena, but one exerting a very special pressure on individuals and society” (628). He notes the phenomenological emphases of later works by such figures as Jean Mitry, Albert Laffay and Jean-Pierre Meunier, as well as the Americans Stanley Cavell and David Thomson.⁶⁵ Perhaps most significant for Andrew is Amédée Ayfre, whose rather obscure *Cinéma et mystère* Andrew heralds as “strong and sound.”⁶⁶ All of these figures, insists Andrew, “aimed at the description of one or another sort of consciousness the spectator assumes in apprehending movies: a global response to the movie complex, a ‘perceptual’ stance in relation to the ‘animation and definition’ of images, and a narrative stance implicating the spectator’s consciousness through the processes of identification and individuation in relation to a sequence of images all directed toward some goal or experience” (629). All of these, he argues, “aim at what I have termed the zone of ‘pre-formulation,’ [and]

bracketed by the birth and death of [a] specific psychological structure of belief: before photography images were deciphered as products of human artistry. After cinema,” he says, “in the digitalized videosphere we have entered, images are taken as autoreflective, spun out by computer algorithms. Cinema and photography dominated an era between these extremes, an era during which the physical world was recruited to participate in its own deciphering.” See Andrew, “A Preface to Disputation” (ix).

⁶⁵ See Thompson, *Movie Man*.

⁶⁶ See Ayfre, *Cinéma et mystère*.

attempt to describe as adequately as possible the experience of signification in the cinema, comparing it to other forms of perception and imagination” (629-30). Yet there is, for Andrew, another strain of phenomenological investigation into cinema that goes deeper, “which seeks to be adequate to that experience which lies on the hither side of signification, somewhere beyond the text” (630). This he sees derived from the Geneva school of hermeneutics and “Criticism of Consciousness,” according to which “the boundaries between books dissolved as the transcendental author was seen to spew out fragments of a world which the critics learned to reconstitute” (630). Andrew places the work of André Bazin here, in so far as he endeavored to describe a “cinematic world,” beyond the text, which the critic could, through careful deliberation, enter and experience, primarily through an effort to discover the original authorial intentions, understood as the source of this other world. Through his “phenomenological criticism,” Bazin “strives to erase the distinction between works and to join himself [...] to the creative energy of each auteur” (630). The heir to such a tradition, Andrew insists, is Paul Ricoeur, in so far as he “wants to clear enough space for us to be able to experience and reexperience artworks in a way which allows us to be adequate to them, to learn from them, to change our lives in relation to the meaning they suggest, rather than to protect ourselves from them through a structural analysis which can only discuss their possibility, not their actuality” (631).

As his account of Ricoeur suggests, Andrew is concerned with the possibility of a kind of direct experience, which leads him to an explicitly anti-rational position. While he begins his article with the suggestion that a structural analysis is only part of the story, insisting that it must be buttressed by a more thorough and deeper consideration of the

grounds and possibility of such analyses, he concludes with an implicit rejection of such a “rational” analysis, noting that “phenomenologists have a longstanding distrust of pure reason, viewing rationality as a single mode of consciousness among others, a mode whose unquenchable thirst to swallow all experience must be restrained [...]” (631). The relationship between a rational, structural analysis and an intuitive and sensitive phenomenological analysis is rendered by Andrew as a contest or a struggle between two radically divergent worldviews, the stakes of which are profound. The rational tendencies of structuralism must be resisted and restrained by a more affirmative phenomenology “because life itself tells us that experience is dearer and more trustworthy than schemes by which we seek to know and change it” (631). Yet in his enthusiasm, Andrew succumbs to the illusion of a direct and unmediated experience, which is just what structuralists and semiologists, despite any other faults, properly sought to resist. Andrew opposes this presumably more vital and authentic “experience” to the “schemes” by which we come to know experience as only a second-hand phenomenon, without, however, explaining how such experience becomes available, if not by the elaboration of such schemes.

A phenomenological film theory, as imagined by Andrew, never really developed, partly, I would suggest, as a result of the strength of structuralist assumptions, which Andrew does not counter in any significant way, and partly because Andrew ultimately could not find the means to bridge the gap between structuralist accounts and phenomenological analysis. Such a bridge, though, is indeed difficult to construct. Structuralism, as Andrew acknowledges, developed largely in response to and against the phenomenological tradition he subscribes to, and he admits that “no sophisticated theorist

working today would consider a literal return to the postwar phenomenological model” (627). Yet he offers no real emendation to that model, except to refer to the work of Ricoeur who, he says, “wants to restrain the naïve romanticism and exuberance of phenomenological criticism while retaining its goal of going beyond the text by means of fructifying experience of the text” (630). Ricoeur’s work, though, as he admits, “has hardly been adapted to cinema studies” (631) – a situation that has not changed since Andrew’s writing. No significant work on film has been undertaken on the basis of Ricoeur’s hermeneutics, which, for most semiologically minded film theorists is still too closely linked to an unreconstructed phenomenology. Nor has any phenomenological-inflected approach to the study of cinema shown how such a tradition may in fact be overcome and incorporated into the critical project of film theory as it has been elaborated since the 1960s.

The shortcomings of structuralist film theory were widely acknowledged, though, and a specifically phenomenological solution was commonly offered, precisely in response to structuralism’s and even post-structuralism’s failure to account for the full nature of the cinematic experience. Writing around the same time as Andrew, Patrick Peritore made a similarly passionate plea for an alternative to the dominant semiotic or semiological models that had been developed, insisting upon the value of phenomenology as the means by which a more comprehensive and adequate account of the cinema may be elaborated, through phenomenological “description” rather than through structural analysis, a description of the cinematic experience that accorded more with actual experience. Yet Peritore, too, is led ultimately to criticize semiology according to its tendency to obscure and perhaps even prevent the recuperation of a *direct* experience or a

pure perception, which is understood to be the only proper basis upon which an adequate and authentic explanation of cinematic experience may be elaborated. The strictly traditional phenomenological alternatives offered by Andrew and Peritore, which seemed to maintain the sort of naïve hopes that a rigorous semiology sought to counter, elicited very little comment or response, and neither provided the basis upon which an explicitly phenomenological film theory could be built. Such comments as there were came in the form of a rather curt dismissal. Gorham Kindem, for instance, rejected both Andrew and Peritore in their “quest for pure perception” and their hopes for an account of a “direct” cinematic experience, insisting that such hopes will be inevitably disappointed (68). Yet Kindem is similarly concerned to discover a solution to the shortcomings and limitations of structural semiology, specifically as applied to the theoretical analysis of the cinema. “A general theory of signs,” he argues, “which is dominated by verbal language seems of limited value for the study of film” (68). Yet rather than looking to traditional phenomenology for a solution to the limits of semiology, Kindem suggests an alternative semiotic tradition, one which may in fact bridge the gap between the strict conventional and cultural analyses of semiology and the experiential interests of phenomenology. Semiology, he acknowledges, importantly stresses the semiotic irreducibility of the cinematic experience, but depends too much on an erroneous homology between pictorial and linguistic communication. Traditional phenomenology, which is interested in the more direct aspects of visual experience, and which seems capable of addressing a wider range of phenomena, nevertheless raises the naïve hope of an account of some pre-semiotic realm of immediate experience. Kindem offers instead what he calls the “semiotic phenomenalism” of Charles Peirce: “Peirce’s semiotic, it seems to me, is more

universal and more adaptable than semiotic theories derived from structural linguistics” (68), which cannot progress beyond, and is significantly constrained by, the limits of its linguistic analogies. By contrast, Peirce offers a more expansive notion of the sign, which is not reducible to the linguistic expression, but is more broadly conceived as “*something* which stands to *somebody* for *something* in some respect or capacity” (Qtd. in Kindem; 62).⁶⁷ Peirce’s idea of a sign, argues Kindem, is vastly more useful when considering something like the cinema, which clearly exceeds any linguistic analysis. But it also significantly insists upon the *necessity* of signs in any sort of experience, which contrasts it with the sort of phenomenology championed by Andrew and Peritore: “For Peirce,” writes Kindem, “there is no intuitive or purely perceptual knowledge, no direct awareness of things-in-themselves. All knowledge is the product of signs, and one sign involves other signs in an infinite regress for which there is no first sign, no initial cognition. By definition our world is a world of representations” (62).

Kindem discovers the source of Peirce’s semiotic expansiveness, and his “phenomenalism,” in his elaboration of a tripartite sign which, Kindem explains, “involves three things: the sign-in-itself, an interpretant, and an object,” and in the subsequent but fundamental distinction between symbol, icon and index, which, he notes, is the “‘respect or capacity’ in which a sign stands for its object [...]” (62). Meaning, in such an account, is not the result only of the culturally and conventionally elaborated abstract signs described by Saussurean linguistics, but is manifested in the more broadly conceived pragmatic activity of those for whom the world of experience reveals itself in the form of signs. Kindem pursues the implications of this broader semiotic conception.

⁶⁷ This is the most commonly cited definition of the sign offered by Peirce. See Peirce, *Collected Papers* 2.228.

“It is possible to isolate at least three potential sources of ‘meaning’ in Peirce’s semiotic,” he notes, “which become practically synonymous with the object, the interpretant, and the pragmatic consequences of the interpretant” (62). Here, though, Kindem strays from a strict reading of Peirce, and offers a somewhat confused account of the “sources” of meaning, which he calls “referential, ideational, and behavioral” (63), relying upon Charles Morris’ later behaviorist revisions of Peirce’s pragmatism, and upon analytic theories of meaning. Moreover, what he calls “ideational meaning,” which he describes as “the idea awakened in the mind of the interpreter,” is, he insists, “similar to Saussure’s conception of signification as ‘signifier/signified,’ where meaning is intrinsic to the sign system and shared among many minds” (63). The problem, he implies, is simply that structuralist semiology has concentrated only on this aspect of semiotic, while ignoring the others, the “referential” and “behavioral,” thereby missing the full spectrum of semiotic experience. Kindem criticizes Andrew and Peritore for failing to acknowledge Peirce (or even demonstrating any awareness at all of his semiotic “phenomenalism”), but also reproaches those film semiologists who do mention Peirce, but who seem not to grasp the full import of his semiotic which, Kindem insists, “is not limited to the study of cultural signs, since all phenomena of experience are conceived as representations” (61). Yet the sorts of confusions that Kindem finds among semiologists, including and perhaps especially Eco, are similar to those he himself displays, and are at the heart of most attempts to square structuralist semiology and a Peircean semiotic, as we shall see in more detail shortly.

As Kindem notes, and as we have seen, Peircean concepts had indeed made their way into semiological accounts, understood as offering the means by which the specific

limits and shortcomings of a structural analysis might be overcome. Kindem merely reiterates the familiar claim that Peirce may serve as a bridge between the limited analyses of semiology and phenomenological accounts of the broader aspects and significance of experience and meaning, a possibility he sees signaled by the phrase “semiotic phenomenalism,” which seems to imply the prospect of such a rapprochement. The term “phenomenalism,” though, only appears in Peirce’s writings as a synonym for a crude materialism or a *nominalism*, which is precisely what Peirce was concerned to combat, and against which he elaborated an account of sign usage, or *semiosis*, governed by a comprehensive *realism* and *pragmatism*. In his defense of pragmatism, which he sought to protect from those who called themselves pragmatists, but who had misunderstood the full significance of the concept, Peirce coined the new term “Pragmaticism” (which he thought ugly enough to dissuade potential kidnappers), and staged a mock dialogue between a “Questioner” and the “Pragmaticist,” the latter seeking to explain and justify the concept to the former: “I see,” says the Questioner, “that pragmaticism is a thorough-going phenomenalism,” to which the Pragmaticist replies: “Pragmaticism is not definable as a ‘thorough-going phenomenalism,’” for specific reasons: “The *richness* of phenomena lies in their sensuous quality. Pragmaticism does not intend to define the phenomenal equivalents of words and general ideas, but, on the contrary, eliminates their sentient element, and endeavors to define the rational purport, and this it finds in the purposive bearing of the word or proposition in question” (5.428). Elsewhere Peirce describes “those daughters of nominalism, – sensationalism, phenomenalism, individualism, and materialism” (8.38), all of which remained in the realm of simple sense perception, against which he defends the philosophical tradition of

realism, significantly understood by Peirce as the detection and definition of the “rational purport” of “words and general ideas,” the *reality* of which is manifested in the “purposive bearing” elicited by such words and ideas.

In so far as contemporary semiology derives from and is indebted to the nominalist tradition, Peirce’s semiotic is in fundamental opposition. While there is a very long nominalist tradition, dating back at least to the medieval scholasticism of William of Ockham, it has emerged most forcefully only in the twentieth-century, and has found fullest expression in structuralist semiology, as Winfried Nöth has insisted. “Semiotic nominalism,” he explains, “rejects the idea of a reality of general concepts or referents. Nominalists acknowledge only the existence of singular objects and deny the reality of universals [...]” (*Handbook* 84). Nominalism is, he notes, the guiding assumption behind semiotics, or structuralist semiology. “Modern semiotic nominalists,” writes Nöth, “are [...] the structuralists, and semioticians in the line from Saussure to Hjelmslev, Greimas, and Eco” (84). The radical quality of modern semiotic nominalism, though, distinguishes it from earlier versions, argues Nöth, noting that “this modern semiotic nominalism tends to be still more nominalist than the traditional one which acknowledged at least the referential reality of individuals” (84). According to Jacek Jadacki, whom Nöth cites, the philosophical assumptions of nominalism, in their radical modern form, have become triumphant. Writing in the mid-1980s, Jadacki argues that “recent tendencies to ‘semiotize’ all areas [...] concerned with the formal or empirical aspects of meaning and reference, can be interpreted as expressing the fact that nominalism today is, more or less, the dominant school of thinking: everything conceptual only exists in the use of its sign” (Qtd. in Nöth 84).

Even before the triumphs of structuralism and Saussurean semiology, Peirce had seen the overwhelming force of nominalism, and its various manifestations, especially in the world of nineteenth-century science, the positivist and materialistic emphases of which would come to color many endeavors in the twentieth century, including the scientific study of signs. As Peirce notes, “a man who enters into the scientific thought of the day and has not materialistic tendencies, is getting to be an impossibility” (8.38). The most basic distinction, Peirce insists, governing approaches in virtually all human endeavors, is between nominalism and realism, which is not merely a choice between two alternatives, but is in fact the most basic of distinctions, the engine that has powered most if not all inquiry, and which shows no sign of immediate resolution. Quite to the contrary, the dispute is increasingly heated and polarized, as a direct result of the lack of the means for resolution. “So long as there is a dispute,” argues Peirce, “between nominalism and realism, so long as the position we hold on the question is not determined by any proof *indisputable*, but is more or less a matter of inclination, a man as he gradually comes to feel the profound hostility of the two tendencies will, if he is not less than man, become engaged with one or the other and can no more obey both than he can serve God and Mammon” (8.38). Without the great dispute, though, Peirce insists, little may be accomplished. “If the two impulses are neutralized within him,” he suggests, “the result simply is that he is left without any great intellectual motive” (8.38). The task, then, is not mere reconciliation, but rather, despite the difficulty, to provide “proof *indisputable*,” so that one may proceed with one’s intellectual endeavors, so that one may still have a *motive*, rather than merely setting the question aside, or “neutralizing the impulse” to choose, and thereby running the risk of losing one’s intellectual motivation.

For Peirce, the stakes are high, and the battle is to be a mighty one. “The realistic philosophy of the last century,” he writes, “has now lost all its popularity, except with the most conservative minds. And science as well as philosophy is nominalistic” (8.38). The general inclination has shifted significantly if not entirely towards nominalism, which governs most inquiry. But if realism has not yet been proved, nor has any proof of nominalism yet been provided, and Peirce is confident that a realist outlook may yet prevail.⁶⁸ “There is, indeed,” he insists, “no reason to suppose the logical question is in its own nature unsusceptible of solution. But that path out of the difficulty lies through the thorniest maze of a science as dry as mathematics” (8.38). This is the science of semeiotic, the careful pursuit and elaboration of which, while perhaps as complex and as “dry” as mathematics, may not immediately seem to be as clearly significant, and the labor may not appear as worthwhile. Mathematics, admits Peirce, at least has the practical value of providing the means for the construction of bridges and the production of motors, therefore “it becomes somebody’s business to study it severely” (8.38). Semeiotic, as a branch of philosophy, on the other hand, may seem to have no clear

⁶⁸ The concept of “realism” in Peirce is troublingly complex, even idiosyncratic, and it has been shown by several commentators that what Peirce means by “realism” does not always correspond to the traditional philosophical concept. Peirce also described himself as an idealist, or even a transcendentalist, an apparent dichotomy that was the topic of one of the central early works on Peirce. See Goudge, who famously identified “two Peirces,” a naturalist and a transcendentalist. The question of the relationship between realism and idealism in Peirce’s philosophy and semeiotic is a subject of continuing speculation. See, for instance, Jacques, and Parker. Parker resolves the issue by recourse to F.W. Schelling, who, in his *Of Human Freedom*, insists: “Idealism is the soul of philosophy; realism is its body; only the two together constitute a living whole” (Qtd. in Parker 51). Whatever the controversies about the character of Peirce’s realism, its motivation is clear, as Christopher Hookway has argued. “The motivation for calling the view realist is that it permits Peirce to reject a nominalist view of universals or ‘generals’. We must free ourselves from the nominalist prejudice that the only things that are real are objects or particulars” (37). But Peirce himself has put it as clearly as one could hope, explicitly addressing any supposed inconsistencies in his philosophy: “In a long notice of Frazier’s *Berkeley*, in the *North American Review* for October, 1871, I declared for realism. I have since very carefully and thoroughly revised my philosophical opinions more than half a dozen times, and have modified them more or less on most topics; but I have never been able to think differently on that question of nominalism and realism” (1.19).

practical consequences, and to have and pursue philosophy might be thought of as no more than a luxury, and “the only use of that is to make us feel comfortable and easy. It is a study for leisure hours; and we want it supplied in an elegant, an agreeable, an interesting form” (8.38). Acknowledging the limits of his own endeavors, Peirce admits that, “the faculty of philosophizing, except in the literary way, is not called for; and therefore a difficult question cannot be expected to reach solution until it takes some practical form” (8.38). Without some clearly practical consequences, Peirce insists, philosophy will remain inconsequential, and whatever solutions may be offered will not be seen as such. “If anybody should have the good luck to find out the solution, nobody else would take the trouble to understand it” (8.38).

Yet the importance of philosophy, and the need to find the solution, to solve the question of nominalism and realism, is indisputable for Peirce, even if the proof of realism so far is not. The need for such a proof, for an account of the reality underpinning words and general ideas, the reality of signs – a reality that consists in the “purposive bearing” elicited by words, ideas and signs, in the things that we can do with them, and the knowledge of the purpose of others that such a bearing reveals – is presented by Peirce in the most fundamentally practical terms:

But though the question of realism and nominalism has its roots in the technicalities of logic, its branches reach about our life. The question whether the *genus homo* has any existence except as individuals, is the question whether there is anything of any more dignity, worth, and importance than individual happiness, individual aspirations, and individual life. Whether men really have anything in common, so that the *community* is to be considered as an end in itself, and if so, what the relative value of the two factors is, is the most fundamental practical question in regard to every public institution the constitution of which we have it in our power to influence. (8.38)

If Peirce is to be of any use to film theory – as Kindem and many others have suggested he may be, as a viable alternative to a more limited structuralism – if he is to

provide the means upon which a more thorough description of the cinematic experience may be elaborated, without descending into the irrationality and naivety that has characterized most ostensibly phenomenological challenges, then the full extent of his realism must be accounted for and accommodated. Behind or beneath his theory of signs, there are, for Peirce, pressing and urgent questions of knowledge, certainty, fallibility and confidence, which have broader social and even political importance and significance. How we come to know anything at all, and the actual status of our epistemological relationship to an external and independent reality, are questions that Peirce insists must be answered before we can fully account for and, importantly, significantly *influence* the structures and institutions through which we relate to that reality and to each other. Among the most significant “public institutions” of the twentieth century is the cinema, which Peirce must have been aware of (he died only in 1913), but which he regretfully never mentioned,⁶⁹ and it is surely one that it is in our interest to influence. Any influence, though, can only come on the basis of an understanding of the significance of the cinema, the meaning of the cinema, on the basis of a consideration of the cinema’s *importance*, which is precisely what critics of the structuralist approach insists is obscured.

The question of the cinema’s importance, though, is central to Stanley Cavell’s account, to which we will return as we pursue the question of the relationship between cinema and reality. Cavell importantly suggests how a realist perspective on the cinema

⁶⁹ Except for two references to what Peirce calls “moving pictures,” although it’s not entirely clear that he specifically meant the cinema. One though, is in a manuscript from 1905, and sounds very much like a description of the silent cinema, while the other is in he Lectures on Pragmatism, in the *Collected Papers* (5.115), which date from 1903. We will consider these quotes shortly. There are, though, many famous references by Peirce to the basic material of the cinema, the photograph, which have not passed unnoticed, as we have seen, and which suggest how he may have thought of the cinema if he had addressed it.

might reveal the function it performs for individuals concerned to discover what they may have in common, what the epistemological grounds of community may be. Cavell, I will argue, shares a similarly *realist* outlook as Peirce. For him the question between realism and nominalism (and the subsequent skepticism that nominalism tends to beget) resolves itself explicitly in terms of the community and the individual, and in the question of the grounds upon which knowledge – of ourselves, our world, and of others – can be ascertained. As Cavell notes, the cinema is centrally concerned with the themes of happiness, individuality, society and community, themes which were equally important for Peirce, themes which were the basis for his tireless championing of realism against nominalism, and which are at the very heart of his account of signs and semiosis, and his investigations into the questions of knowledge, reality and representation. The cinema has much to say on the question of reality and our relation to it, and on the question of knowledge and representation. It has even more to say, perhaps, about the stakes that are raised by such questions, about the importance that lies in the answers to such questions.

Chapter 6: The “Language” of Digital Cinema

There can be no doubt that the actual, physical universe is involved in the recording of pictures or sounds and in the production of audiovisual programmes. But, although they refer directly to the world, pictures are inserted in representations which compel us to pay more attention to some aspect of their referent. Films borrow their material from reality *and offer us a reshaped reality*, an interpretation of it. A sentence such as: ‘This film is realistic’ is meaningless – unless we explain what reality is for us, and how our understanding of reality is exemplified in the film. If you feel like telling what is real for you, just try. It is certainly difficult for me.

Pierre Sorlin (265)

Accounting for Reality

Since Dudley Andrew’s critique of structuralism, and his impassioned presentation of a phenomenological alternative, an interest in the question of the relationship between the cinema and reality, between the image and the world, has only become more acute. A variety of film scholars and theorists have broached the issue of reality, and of the cinema’s relationship to the real, in direct defiance of the structuralist and semiological imperative to expel questions of reference, and in the increasingly dogmatic position of post-structuralist and post-modern philosophy which insists upon a radical distance between our perception and conceptions, our images and representations, and a primary, determinant reality. Against such claims has been the steady insistence of cinematic representation, the powerful experience of reality in the presence of cinematic imagery. Film scholars and theorists have had recourse to a variety of alternative models and traditions, both critical and philosophical, as they have endeavored to describe the complex relationship between pictorial or visual representation and reality, to describe the overwhelmingly “realistic” impression produced by the cinema. While a direct on-to-one correspondence is not seriously entertained, there is nevertheless a “sense” of reality

that is produced by the cinema that corresponds in some meaningful and significant way to our everyday “sense” of reality.

What most recent considerations on the question of film and reality stress, and what is made explicit in the quote from Pierre Sorlin above, both the nature of reality itself and the nature of the relationship between reality and a representation are profoundly subtle and complex. Gregory Currie, for instance, is concerned to account for the strange, almost paradoxical quality of the cinematic image, which is presented in a quote he offer from Rudolf Arnheim: “Film gives simultaneously the effect of an actual happening and of a picture” (Qtd. in Currie, 19). Currie is concerned to reject accounts of the cinema that stress *illusion*, which he argues do not adequately explain this peculiar quality, and to reconsider what he insists are the more subtle and informative accounts that have been elaborated by cinematic “realists,” and to resurrect, in light of certain insights from cognitive science, an account of realism in the cinema that corresponds to the more subtle account of reality that are available.

Explicit recourse to a variety of philosophical traditions and accounts of reality is being made by many film theorists, in an effort to ground claims for the cinema’s reference to reality, which stressing at the same time that the nature of bother reference and reality are complex and multifaceted. An early instance is Ian Jarvie’s exploration of the many philosophical aspects of cinematic representation. For Jarvie, the cinema is a significant sight for reflecting upon the philosophical problem of reality. He notes that when we watch a film, “we are voluntarily incarcerated in Plato’s cave in a test of our ability to know and experience things that are not real, responding to them in ways that resemble our response to the real, yet without becoming seriously disoriented about the

boundary between the real and the unreal or the quality of the experience of one compared to the other” (91). The typical cinematic experience reflects a more general capacity we possess to posit a distinction between the real and the unreal, in order, presumably, to shed some more light upon the very phenomenon of the real. There are many other such attempts to link the experience of watching a movie, to engage in an experience of a limited conceptual and perceptual confusion, with more explicitly philosophical endeavors. Analytic philosophy has provided the most common support for such scholarship, as described in Berys Gaut’s recent overview of an analytic philosophy of film, but there are also instances of considerations of film through the tradition of continental philosophy (Wurzer).

An explicitly phenomenological film theory never really developed, although it has continued to hover at the margins of film theory. One of the main problems has been the many different and often divergent phenomenological traditions to which one may have recourse. In 1990, the *Quarterly Review of Film and Video* published a special issue on film theory and phenomenology, introduced by Frank Tomasulo, who returns to the origins of modern phenomenology in the work of Edmund Husserl, insisting upon the potential scope and value of a phenomenological approach to the study of the cinema. “Indeed,” he writes, “the cinema is a particularly apt subject for phenomenological investigation because it is so dependent on the explicitly *visual* experiences of time, space, perception, signification, and human subjectivity” (2).⁷⁰ Contributors to the issue include Allan Casebier, who has also published a book on cinema and Husserlian phenomenology, and Vivian Sobchack, who has published perhaps the most influential

⁷⁰ See also the various articles by Sonesson, who also employs Husserlian notions of the lifeworld, and phenomenological principles in general, in his consideration of digital imagery.

book on phenomenology and film theory, influenced largely by Maurice Merleau-Ponty, and the later “experimental phenomenology” of Richard Lanigan.

David Bordwell and Noël Carroll have been key figures in the reconsideration of questions of film realism, and in their recent anthology *Post-Theory*, have provided a forum for many of the new figures in film theory for whom questions of realism and illusion are pressing and current, including Currie, but also Murray Smith, Paisley Livingston, Flo Liebowitz, Alex Neill, Carl Plantinga, among others. David Bordwell makes a forceful argument for reconsidering longstanding theoretical assumptions, specifically around the issues of realism and illusionism, and around pictorial representation and conventionality, in his contribution to the anthology, “Convention, Construction, and Cinematic Vision”:

Cinema is partly pictorial representation, and we have come to expect, especially after the dissemination of Structuralist and Post-Structuralist theories, that the most enlightening accounts of pictorial representation will involve a theoretical account of conventions. Yet the humanities has not solved the problem of how to understand conventions; indeed, I am not convinced that we know precisely what a convention is. (87)

The question of conventions is perhaps one of the most significant issues that is still far from being resolved, but it is only one element of the cluster of problems that structuralist film theory has failed to resolve, and which the various alternative approaches that have been elaborated are attending to. With digitization, however, a basically structuralist outlook has been resurrected, as we have already begun to see, specifically in the insistence on the loss of referential and designative capacities of the cinema, in the claim for the loss of indexicality. The very problematic application of the model of a language of cinema, in particular, has been resurrected, understood to have suddenly become entirely appropriate, capable of explaining the new phenomenon of the

digital cinema. Lev Manovich, in one of the most widely cited and influential accounts of digital cinema and new media, make this explicit.

Lev Manovich and the “Language” of Digital Cinema

Lev Manovich’s recently published book is in fact called *The Language of New Media*, and he describes the effects of computerization, of digitization, on both the modern media and on media studies, and on the cinema. Manovich places particular emphasis on the digitization of the cinema, which he insists is the most exemplary of the old media that are being transformed by computerization. In its transformation, he argues, we may discern the basic contours of the revolution that is affecting all media. We have, he argues, entered a new era, and are being confronted by the sudden emergence of an array of new media objects, which need to be carefully described and analyzed. But he insists that the effects are also being felt by the traditional media objects, which are being transformed, altered to such an extent that they too need to be newly theorized. “The computerization of culture,” argues Manovich, “not only leads to the emergence of new cultural forms such as computer games and virtual worlds; it redefines existing ones such as photography and cinema” (9). One of his main goals in the book is to account for such “redefinition,” to describe the sorts of changes that have been wrought on such traditional media as they have been subsumed within the larger generalized context of the “new media,” as all media come under the pervasive influence of the computer. He is particularly interested in “the effects of computerization on visual culture at large. How,” he asks, “does the shift to computer-based media redefine the nature of static and moving images?” (9). Within visual culture, the cinema is particularly significant. It was, he says,

“the key cultural form of the twentieth century” (9), and any understanding of the new media must be grounded upon an understanding of that fact. Methodologically, Manovich is explicitly guided by his acknowledgement of the central importance of the cinema. “The theory and history of the cinema,” he declares, “serve as the key conceptual lens through which I look at new media” (9).

In many ways, this is the source of the strength of Manovich’s analysis of the development and elaboration of the new media. The form that such media have taken, their historical trajectory, he importantly notes, has largely been determined by the development of the cinema, by the elaboration of a cinematic culture. As a result, many of the key aspects of that culture have been maintained, providing a context within which new media are understood and evaluated. But Manovich is also concerned to demonstrate how *different* the new media are from the old, and how, despite the appearance of continuity, there are in fact fundamental changes taking place. In order to emphasize the extent of such changes, he is concerned to demonstrate how the most important of the old media, the cinema, has been almost comprehensively transformed.

Describing the early development of digital computing, Manovich recounts the first intersection between the historical trajectories of the cinema, the representative of the old media, and the computer, the harbinger of the era of the new media. In 1936, Konrad Zuse, an engineer in Berlin, built the first rudimentary digital computer, the novelty of which was that the program commands were punched on a tape that could be fed into the machine. Of even more interest to Manovich is the fact that the tape that Zuse used “was actually discarded 35mm movie film” (25). In this transformation from traditional film footage to digital code, Manovich sees the cinema’s fate foretold:

One of the surviving pieces of this film shows binary code punched over the original frames of an interior shot. A typical movie scene – two people in a room involved in some action – becomes a support for a set of computer commands. Whatever meaning and emotion was contained in this movie scene has been wiped out by its new function as data carrier. The pretense of modern media to create simulations of sensible reality is similarly canceled; media are reduced to their original condition as information carrier, nothing less, nothing more. In a technological remake of the Oedipal complex, a son murders his father. The iconic code of cinema is discarded in favor of the more efficient binary one. Cinema becomes a slave to the computer. (25)

While it is not entirely clear how the cinema can be at once killed and enslaved, Manovich has recourse to such dramatic metaphors in order to emphasize what he sees as the effective subordination of the cinema. Once a traditional medium, capable as a result of the specific nature of its representations of simulating “sensible reality,” and thereby of generating “meaning and emotion,” the cinema is now forced within the circumscribed and neutral context of the computer, within the strict confines of digital code, of abstract computer language. Whatever “pretense” to realism, whatever supposed links such a medium had once had to a “sensible reality” that it could convincingly simulate, the film strip is now made to support strictly numerical, binary information, related only abstractly and tangentially to the real world. In this particular instance, the filmstrip is put to a use contrary to its original nature and purpose. This points, though, to the more comprehensive transformation to come of the medium as a whole. “Zuse’s film,” argues Manovich, “with its strange superimposition of binary over iconic code, anticipates the convergence that will follow half a century later” (25). Manovich’s main theme is given expression in this example, in the story of a medium with its own unique properties and nature being transformed to meet the specific demands of computation. This is the story of the revolutionary transformation of all the various old media into the homogenous computerized context of the new media:

Two separate historical trajectories finally meet. Media and computer [...] merge into one. All existing media are translated into numerical data accessible for the computer. The result: graphics, moving images, sounds, shapes, spaces and texts become computable, that is, simply sets of computer data. In short, media become new media. (25)

Despite the violent metaphors of death and enslavement, Manovich insists that there is a happy ending to the story that begins with Zuse's transformation of film footage into a vehicle for digital information. Having been made "computable," the cinema – indeed all the old media – experience newly enlarged aesthetic possibilities, and Manovich peers towards a new aesthetic horizon. Such new possibilities, however, come at the cost of the old ones. Just as Zuse obliterates the original sense of the filmstrip once he has punched holes through it, digitization gives the cinema an entirely new cast. The cinema is now characterized by and consists of "binary code," which has overwritten and obliterated the original "iconic code" of traditional cinematic representation. The phrase "iconic code," however, presented originally to emphasize the basic similarity between the material of cinematic representation and the reality represented, does not appear again in Manovich's book. Instead, that aspect of traditional cinematic representation which has been destroyed by digitization, and which had ensured some sort of relatively direct relation between the cinema and reality, is called "indexicality." In his explanation of the effects of computerization, of digitization, on the cinema, Manovich is concerned to show that it has come at the expense of that specific quality that had once defined the cinema. Once the "art of the index," the cinema "is no longer an indexical media technology" (295). In his analysis of the end of indexicality, Manovich offers a detailed instance of an argument that is increasingly prevalent within film and media studies, which insists that digitization has initiated a transformation in the very nature of cinematic representation, with broader consequences for the terms of representation generally. Such consequences

are seen to derive from the specific technological changes that have taken place. But this is to confuse the specific technical *means* of representation with the more general *terms* of representation. Through a more careful consideration of precisely how Manovich and others have characterized such technological change, and how they see such consequences to have arisen, such claims may be assessed, and the actual fate of indexicality may be determined.

The Loss of the Index

The cinema, argues Manovich, echoing a widely held position, is no longer “indexical.” It has, he insists, lost that characteristic that had distinguished it from other media and other arts, that quality that had given it its specificity and its unique identity. The cinema was an art like no other. While certainly related to the other arts, and understandable within larger histories of representation, especially illusionist, realistic visual representation, it nevertheless possessed a unique capacity – “to make art out of a footprint” – that separated and distinguished it from, and perhaps even elevated it above, the other traditional arts. Now, by contrast, it has been subsumed within larger media contexts. It has, as Manovich says, become a “subgenre” of painting, by which he means that it is now no different than the sorts of arts from which it had for so long maintained a distance, those arts that produce their images and effects through direct manipulation of symbolic material, and which create wholly “synthetic” imagery through subjective processes of elaboration. The cinema, by contrast, made art through an objective, automatic process of registration. Its basic material consisted of photographic “footprints,” the marks or traces left upon the film surface as a result of mechanical and

chemical processes, which were then subjected to increasingly complex procedures of aesthetic elaboration, modulation and manipulation. Yet beneath it all, insists Manovich, beneath the many layers of artifice and stylization, one could always discern the objective presence of the original footprint. “No matter how complex its stylistic innovations,” he argues, “the cinema has found its base in these deposits of reality, these samples obtained by a methodical and prosaic process” (294).

Not merely realistic, then, the cinema had found its power and its significance precisely *in reality*. The traces upon the filmstrip, the images projected upon the screen, functioned like footprints – and here Manovich has chosen his metaphor carefully – pointing to the fact of the prior existence of some object, some individual, which had left those traces. According to such an analysis, the cinema’s primary significance, the source of its identity, lay in this unique capacity for literal *indication*. The cinema pointed to, it indicated or designated, the prior presence or existence of real objects and individuals, of which it remained as the material trace of their reality. This link to reality, however, this indexicality, is what seems to be threatened by the progressive digitization of the cinema. “But what happens,” asks Manovich, “to the cinema’s indexical identity if it is now possible to generate photorealistic scenes entirely on a computer using 3-D computer animation; modify individual frames or whole scenes with the help of a digital paint program; cut, bend, stretch, and stitch digitized film images into something with perfect photographic credibility, even though it was never actually filmed?” (295). His answer is that the cinema as we have known it has come to an end, and that a “new language of cinema” is emerging.

More precisely, the cinema has in fact now *become* a language, a code, a system of representation arbitrarily or conventionally related to the objects of its representation. It is no longer a system of representation motivated by and physically connected to those objects. This, in turn, destroys the limits that had been placed upon cinematic representation, which had been governed and constrained by a primary reality to which the cinema ultimately owed its existence and to which it directly referred. Now such limits, such constraints, and such clear lines of reference, have been effectively removed, blurring the boundaries between cinematic and other modes of representation and expression. The cinema, argues Manovich, “is now used to communicate all types of data and experiences, and its language is encoded in the interfaces and defaults of software programs and in the hardware itself” (333).

Not only is there a new language of cinema, but the cinema has become merely one instance of a larger “language of new media,” the title of Manovich’s book. The cinema, and in fact all traditional media, have, Manovich argues, become “new media.” They have all been subsumed within a general numerical language of computation. Manovich is endeavoring to describe the intersection of two historical trajectories – the development of the modern media, the various and distinct means for the storage and presentation of textual, aural, and visual information; and the development of computer technology, the means of efficiently processing and organizing specifically numerical information. Now *all* information is numerical, amenable to computation. We are, he says, “in the middle of a new media revolution – the shift of all culture to computer-mediated forms of production, distribution, and communication” (19). While comparable to the revolutionary effects of the printing press and photography, the new media

revolution is, he insists, more profound, given that “it affects all stages of communication, including acquisition, manipulation, storage, and distribution; it also affects all types of media – texts, still images, moving images, sound, and spatial constructions” (19). All now fall within a single category, which speaks with a single voice, in one language, the language of new media.

Manovich is aware of the historical and theoretical resonance of the word “language,” and is keen to distinguish his work from earlier attempts at applying a linguistic analysis to non-linguistic phenomena, and to note the limitations of such an approach. “In putting the word *language* into the title of this book, I do not want to suggest that we need to return to the structuralist phase of semiotics in understanding new media” (12). Having considered the alternatives of *aesthetics* and *poetics*, however, he settled on *language* in order “to signal the different focus of this work: the emergent conventions, recurrent design patterns, and key forms of new media” (12). Having all been brought within the global purview of the computer, it is now possible to speak of *the* language of new media. The differences and distinctions that had separated the various forms of modern media – the material differences between photographic plates, film stocks, and gramophone records, for instance, to cite the examples he offers – have been erased with “the translation of all existing media into numerical data accessible through computers” (20). All the formerly disparate elements of the old media, which had often required different media for storage and presentation –(graphics, moving images, sounds, shapes, spaces, and texts) –, have been made similar, or even equivalent. They “have become computable; that is, they comprise simply another set of computer data” (20).

This has many consequences, which Manovich is interested to enumerate and describe, but it has had one specific methodological consequence which is especially important: the new media now consist comprehensively of discrete units of data, the result of *digitization*, defined by Manovich as the conversion of *continuous* data into *discrete* units of numerical representation. He explains:

Digitization consists of two steps: sampling and quantization. First, data is *sampled*, most often at regular intervals, such as the grid of pixels used to represent a digital image. The frequency of sampling is referred to as *resolution*. Sampling turns continuous data into *discrete* data, that is, data occurring in distinct units: people, the pages of books, pixels. Second, each sample is *quantified*, that is, it is assigned a numerical value drawn from a defined range (such as 0-255 in the case of an 8-bit grayscale image). (28)

Sampling, Manovich helpfully points out, is not new, and has in fact been integral to the development of the modern media, particularly to the cinema, which effectively samples time, taking 24 discrete images per second, which, when projected, has the *effect* of continuity. Photographs printed through the half-tone process also consist of discrete units – dots organized into an orderly pattern – which again produce the *effect* of continuity. But both of these also contain authentically continuous elements. Each of the frames in the series of discretely organized units on the filmstrip is a continuous photograph. Each dot of the half-tone image is of continuous density and variation. Comprised of both discrete *and* continuous data, the modern media were not amenable to the second stage of complete digitization. As Manovich notes, “while modern media contain levels of discrete representation, the samples are never quantified. This quantification of samples is the crucial step accomplished by digitization” (28).

Once quantified, such media are no longer restricted to a specific material mode of storage or representation. All media have become computable, and all have been translated to the single language of the computer. They are all now analyzable as systems

of discrete, quantified data, analyzable precisely as a language. They are now reducible to specific, separate and identifiable elements. Digitization is what makes it possible to comprehensively describe “the language” of new media, “language” understood as a system of communication consisting of discrete units. This, Manovich acknowledges, despite his having kept such a tradition at bay, was the basic premise of structuralist semiotics, or semiology. “The key assumption of modern semiotics is that communication requires discrete units. Without discrete units, there is no language. As Roland Barthes put it, ‘Language is, as it were, that which divides reality (for instance, the continuous spectrum of colors is verbally reduced to a series of discontinuous terms)’” (28-9).⁷¹ This, Manovich argues, explains why all modern media, in order to be capable of communication, consisted, at least to some degree, of discrete representation. Otherwise, if they were wholly continuous, they would effectively be indistinguishable from reality, and incapable of communicating any meaning. Since the modern media were obviously meaningful, the argument went, they *had* to be structured like a language. Guided by such an assumption, semioticians sought to explain the communicative capacity of the modern media by comparing their structures to that of natural language, seeking homologies between the basic human tools of linguistic communication and the elements of the modern media.

In assuming that any form of communication requires a discrete representation, semioticians took human language as the prototypical example of a communication system. A human language is discrete on most scales: We speak in sentences; a sentence is made from words; a word consists of morphemes, and so on. If we follow this assumption, we may expect that media used in cultural communication will have discrete levels. Indeed, a film samples the continuous time of human existence into discrete frames; a drawing samples visible reality into discrete lines; a printed photograph samples it into discrete dots. (29)

⁷¹ See Barthes, *Elements of Semiology* (64).

While fruitful, such an analysis encountered certain obstacles. Semiotics was very efficient at discovering and describing those aspects of the media of communications that were discrete, but it was not able to produce a comprehensive account. There were always other aspects, which did not obviously consist of discrete units, yet which still seemed “meaningful.” The assumption of a completely homologous relationship between natural language and the language of media was limited. “This assumption does not universally work,” argues Manovich. “Photographs, for instance, do not have any apparent units” (29). As a result, semiotics quickly reached the limits of productive analysis:

Indeed, in the 1970s semiotics was criticized for its linguistic bias, and most semioticians came to recognize that a language-based model of distinct units of meaning cannot [sic] be applied to many kinds of cultural communication. More important, the discrete units of modern media are usually not units of meaning in the way morphemes are. Neither film frames nor halftone dots have any relation to how a film or photograph affects the viewer. (29)

Since the 1970s, though, as the historical trajectories of the modern media and computer technology moved towards a fateful intersection, such obstacles appear to have been removed. Now all media – the “new media” – consist entirely and comprehensively of discrete units. As Manovich insists, “a new media object has the same modular structure throughout. Media elements, be they images, sounds, shapes, or behaviors, are represented as collections of discrete samples (pixels, polygons, voxels, characters, scripts). These elements are assembled into larger-scale objects but continue to maintain their separate identities” (30). Like the smaller, discrete units of linguistic expression, then, new media objects can be reduced to their constituent elements, which may be identified and described, and through the combination of which meaningful statements are capable of being elaborated. All the apparent variations of expression, all the

apparently different elements that go into the elaboration of new media expression, belie a fundamental similarity at a structural level, which in fact makes it possible now to categorize all media – indeed, all art, all culture, as Manovich suggests – under a single rubric. Not only possible, Manovich insists that it is now necessary to conceive of all media within the singular terms of the “new media,” and to resist being confused by the superficial similarities between new and old media – which is to say by the apparent *differences* between new media, differences that had once obtained between the various old media, but which have been obliterated. “New media may look like [old] media,” argues Manovich, “but this is only the surface” (48).

While careful to distinguish his project from the tradition of structuralist semiotics, or semiology, Manovich nevertheless betrays a similar interest in the discovery of fundamental underlying structures, the description and analysis of which will explain the production of meaning. His description comes in the form of a list of basic categories of analysis, which he advocates on the basis of its elegance, clarity and comprehensiveness, rejecting such imprecise categories such as “interactivity” and “hypermedia.” “This list reduces all principles of new media to five – numerical representation, modularity, automation, variability, and cultural transcoding” (20). With these, one may now precisely explain the mechanisms of meaning; one may describe how the new media generate meaning. These are the constitutive terms of the “language” of new media. Manovich insists that, “New media calls for a new stage in media theory whose beginnings can be traced to the revolutionary work of Harold Innis and Marshall McLuhan in the 1960s” (48) – but without wholly explaining how such a link might be

made.⁷² What he offers is the suggestion that in order to “understand the logic of new media, we need to turn to computer science. [...] *From media studies, we move to something that can be called ‘software studies’ – from media theory to software theory*” (48; emphasis in original).

Despite the novel appellation “software studies,” however, in his insistence upon an analysis of expression and meaning in terms of the utilization of codes, and in his efforts to describe the “language” of new media, Manovich is effectively proceeding along the lines established by structuralist semiology. He is essentially resurrecting a structuralist analysis, seeking the underlying structural basis for expression and communication, which, as he insists, reiterating the structuralist assumption, must lay in the elaboration of a system of discrete units of meaning. In his analysis of the new media, in the changes that he sees computerization to have wrought on both newly elaborated new media objects, as well as upon the objects of the traditional media, Manovich foregrounds their wholesale transformation into structures consisting exclusively and comprehensively of discrete units – “pixels, polygons, voxels, characters, scripts” – all of which can be reduced to the single category of “numerical representation”: “All new media objects, whether created from scratch on computers or converted from analog media sources, are composed of digital code; they are numerical representations. [...] In short, *media becomes programmable*” (27; emphasis in original). Media, that is, has become comprehensively “writeable,” and comprehensively “readable,” like a language – reducible to the “software” that underlies it, the structure that must be analyzed in order to explain the means by which new media are capable of expression, communication and

⁷² Neither Innis nor McLuhan is mentioned again in the book.

representation. The infrangible but effectively invisible structure sought by structuralism – the structure that *had* to exist given the fact that media such as photographs and cinema were so clearly capable of generating meaning – is revealed in the new media in the form of algorithmic calculations, in digital code – in *software* – which becomes the object of a new structural analysis resurrected and re-imagined as software studies.

Yet Manovich seems to have forgotten the most important aspect of the critique of structuralism, which he himself refers to in a quote offered above. Semioticians, he acknowledges, “came to recognize that a language-based model of distinct units of meaning cannot be applied to many kinds of communication,” and that, more importantly, “the discrete units of modern media are usually not units of meanings in the way morphemes are” (29). The effectively metaphorical application of the linguistic model to the analysis of non-linguistic expression, that is, was insupportable, given the limits of the metaphor. “Neither film frames nor halftone dots,” acknowledges Manovich, “have any relation to how a film or photograph affects the viewer” (29). Following the same logic, it is difficult to see how the discrete units of digital representation, the numerical data of the new media, are more appropriate objects of analysis in the search for the source of meaning and significance. If neither film frames nor halftone dots have any affective value, than why would the even more abstract and effectively invisible elements of digital representation – pixels and polygons, voxels and characters – be any more suitable for analysis, any more likely candidates in the effort to explain the effects of images upon viewers? The fact that time is sampled – digitized – reduced to 24 discrete units per second by the cinematographic process, explains *how* the image of continuous time is then produced, but not the effect of that production upon a spectator

who perceives and experiences that image. It is that image, and the experience of *continuity*, rather than the discreteness that underlies it, that is the source of significance for the film viewer. Similarly, an image that is produced through the algorithmic calculations of a software program does not derive its affective significance from those calculations, but rather from the more qualitative continuity of the manifest expression of those calculations – which are effectively no more important than the individual frames on a filmstrip, and no more amenable to analysis, no more likely as the source of explanation of the meaning or significance of such imagery.

In a parenthetical aside immediately following his account of the limitations of semiological analysis, however, Manovich points to a more fruitful approach for the analysis of the production or generation of meaning. While noting that neither film frames nor halftone dots have any inherent affective potential, he does suggest the means by which they may in fact be invested with such potential. While normally inert, semiotically speaking, such elements can be made meaningful, as they have in the contexts, for instance, of “modern art and avant-garde film – think of paintings by Roy Lichtenstein and films of Paul Sharits – which often make the ‘material’ units of media into units of meaning” (29). The emphasis here is on the activity – on the part either of the artist or the spectator, or a combination of productive and receptive activity – which is necessary for anything to become meaningful. The question of meaning ultimately devolves to questions of use and function, to effectively pragmatic questions, to which we will return.

Manovich is obviously sensitive to such pragmatic issues, and sees the degree to which a traditional semiological analysis runs the risk of reification, of finding the source

of meaning and significance in the constitution of objects, in the immanent value of objects, rather than in the uses to which such objects are put. This is precisely the insuperable obstacle structuralist semiology is generally seen to have come up against, bringing the project to a relatively swift conclusion, and initiating the era of a critical *post*-structuralism, which sought to resist the literalism and scientism of structuralist analysis, and to resist the consequent essentialism. Against the semiological tendency towards an immanent and essentialist analysis, but towards which his own analysis leans, Manovich periodically demurs to the more pragmatic questions of function and use. “I feel that it is important,” he says, for instance, “to pay attention not only to the new properties of a computer image that can be logically deduced from its new ‘material’ status, but also to how images are actually used in computer culture” (289). Nevertheless, Manovich’s primary emphasis is precisely upon the material properties of new media objects, on their structural constitution, presented as the most significant aspect in any analysis of their significance. “The computer-based image,” he insists, “is discrete because it is broken into pixels. This makes it more like a human language.” In order, presumably, to avoid the risks of reification, he immediately adds, parenthetically: “(but not in the semiotic sense of having distinct units of meaning)” (289). What, then, one is tempted to ask, is the point of emphasizing the discreteness of the constituent material of the computer image? In what sense is the computer image “like a human language” if not in its consisting of discrete units? If not, how then *is* it like human language? If pixels, as discrete units, are not “units of meaning,” why is this material fact of the computer image foregrounded as the primary fact in an analysis of the meaning of computer imagery? Despite his efforts to avoid the risks of structural analysis, Manovich is inevitably drawn

towards such an analysis as a result of his privileging the “material” constitution of new media objects, on the basis of which he proceeds with his deductions. Beginning with the fact of the constitution of the computer image – consisting of discrete pixels – Manovich proceeds with his analysis: “The computer-based image is modular, because it typically consists of a number of layers whose contents often correspond to meaningful parts of the image” (289). Pursuing such logic, Manovich proceeds with what appears to be an exemplary structuralist analysis, grounded upon the basic structuralist assumption about language:

The computer-based image consists of two levels, a surface appearance and the underlying code (which may be the pixel values, a mathematical function, or HTML code). In terms of its “surface,” an image participates in dialog with other cultural objects. In terms of its code, an image exists on the same conceptual plane as other computer objects. (Surface-code can be related to other pairs: signifier-signified, base-superstructure, unconscious-conscious. *So, just as a signifier exists in a structure with other signifiers of a language, the “surface” of an image, that is, its “contents,” enters into dialog with all other images in a culture.*) (289; emphasis added)

Not ten lines earlier, Manovich had explicitly resisted the linguistic metaphor, as utilized by a structuralist semiology, only to suddenly resurrect it, only to find in his analysis of the surface-code structure of computer-based imagery the traditional binary structure of all “languages,” as proposed by semiology. Despite his explicitly articulated desire to avoid what he sees as the limits of a semiological analysis, Manovich is deeply influenced by certain semiological and structuralist assumptions, which are repeatedly manifested in his analysis. The most significant assumption, one that is widely shared in the realm of film and media studies, in the realm of cultural analysis generally, is the “coded” nature of any expression, through which one may explain, for instance, the “dialog” between images, the “expression” of “content,” the mechanics of which must be explicable in terms of a logical structure of surface appearance and underlying code. In

Manovich's description of the computer-based image, there are the unmistakable echoes of earlier semiotic (semiological) analyses. There are echoes, too, of the attendant skepticism of such analyses, which had endeavored to account for and reject claims for a pictorial realism, insisting that despite any apparent "similarities" or relations to their objects, images were merely conventional phenomena. They were no more reliable as representations of the real world than any other. This was especially important to prove in the face of the rather insistent claims for the privileged status of photographic and cinematographic representation. From the point of view of semiology, no particular form of representation should be exempt from the global explanations it offered, and it struggled valiantly to describe the pictorial language that underlay photography and cinema. Yet it could never really overcome the sense that there was something unique, something peculiar, about the photograph and the cinematic image, something that seemed to resist the effectively linguistic analysis of semiology. In contemporary accounts of digitization, that special something is now acknowledged to have existed all along, but it is precisely what has finally succumbed to the homogenizing force of the computer.

Central to Manovich's argument is his insistence that the cinema had for most of its history been a peculiar sort of "exception," a medium that had convincingly established links to the objects it represented. "Cinema recordings," he insists, were "documents of reality" (307). As such, though, the cinema was "an isolated accident in the history of visual representation," impossible to situate within standard accounts of the nature of visual representation (308). In so far as pictures – drawings, paintings – had always been, to some degree or other, "manual constructions," they betrayed their

subjective and conventional origins, and were amenable to an analysis that showed that they were *not* what they purported to be, despite whatever similarities might obtain between image and object. The cinema, however, was troublingly convincing in its representation of reality, and seemed to defy the skeptic, who wanted to insist that, nevertheless, the cinema was *not* reality. Whatever may have been conventional about the cinema seemed subordinated to what appeared to be its powerful links to reality, its consisting of what Manovich describes as “deposits of reality.” This was a fact that seemed difficult if not impossible to overcome. Now, though, “the mutability of digital data impairs the value of cinema recordings as documents of reality,” and the cinema, this “isolated accident,” this peculiar exception, may be brought comfortably within the realm of the conventional, within the realm of the explicable. The digitization of the cinema is offered as the means for accomplishing what skeptics and conventionalists had for so long been unable to achieve – to reject the spurious “iconicity” or “indexicality” of cinematic representation, indeed of all supposedly “analogical” representation. What Manovich variously refers to as the “iconic code of the cinema,” or its “indexicality,” are those aspects that comprised its status as an *analogical* medium, which, like the other “modern media,” was the basis for its “pretense [...] to create simulations of sensible reality” (25). It is just such an analogical “pretense,” however, that has been destroyed by the progressive computerization of the modern media, and especially of the cinema, which have all become comprehensively “digital.”

Yet the analogical link to reality was always seen as somehow more than mere pretense. As Manovich says, “behind even the most stylized cinematic images” there were always the mysterious “deposits of reality,” which seemed to exceed analysis and

explanation – they were just there. It was what drove André Bazin to discover the ontological identity of the cinema in the mysterious character of the photographic image, which he presents in terms of perfect equivalence between image and object, in terms of a shared identity, so that “the photographic image is the object itself,” insisting that “the photograph as such and the object in itself share a common being, after the fashion of a fingerprint” (*What Is Cinema?* Vol. 1; 14, 15). It is essentially the same description offered by Manovich, who merely replaces fingerprint with footprint, as he endeavors to describe the strange power of the traditional cinema, which has since been destroyed by digitization. It is what prompted the theorists of Italian Neo-realism, like Cesare Zavattini, to imagine putting “things as they really are” up on the screen, and to insist that “the space between life and spectacle must disappear,” imagining that only through the analogical force of the cinema could this be accomplished. (Qtd. in Casetti 25).⁷³ It is what compelled Roland Barthes, later in his life, to abandon the structuralist approach, which seemed incapable of describing something so ineffable, so mysterious, so tragic, as the photograph. In the language of religious conversion, Barthes describes the fateful moment when he realized the full power of the photograph, a moment of *seeing-through* the photograph to the thing behind or beyond it. “One day,” he begins, “quite some time ago, I happened on a photograph of Napoleon’s youngest brother, Jerome, taken in 1852. And I realized then, with an amazement I have not been able to lessen since: ‘I am looking at eyes that looked at the Emperor’” (*Camera Lucida* 3). Initially drawn away from further consideration of his amazement, Barthes first endeavored to explain such phenomena from the point of view of semiology – his interest in photography took, he

⁷³ See Cesare Zavattini, *Neorealismo ecc.* (Milan, Bompiani, 1979): 103.

says, a “more cultural turn” (3). Finding cultural explanations inevitably unsatisfying, he is forced later to accept just what cultural explanations had sought to reject: “A specific photograph, in effect, is never distinguished from its referent [...] photographs are signs which don’t take, which turn [...]. Whatever it grants to vision and whatever its manner, a photograph is always invisible: it is not it that we see. In short, the referent adheres” (5-6).

Barthes’ late excursus on the mysteries of the photograph was effectively a return to earlier, ontological explanations of photographic identity, which found in the various photographic phenomena, including the cinema,⁷⁴ an overwhelming (if not absolute) analogical character, in its direct, motivated relationship between image and object, between representation and referent. It is precisely such a relationship that semiology sought to reject, insisting that the relationship between representation and referent was beyond the purview of the sort of “cultural analysis” that it sought to establish. Any consideration of “reference,” it was thought, would ultimately descend into just the sort of vague and personal speculations offered by Barthes – verging too close to some sort of pathetic fallacy. In the face of the photograph’s irrational power, what he calls its *punctum*, Barthes is forced to reject a rational approach: “no analysis would be of any use to me” (42). Instead, he’s forced to acknowledge the almost magical powers of the photographic image, as a “bizarre *medium*, a new form of hallucination [...] a mad image chafed by reality” (115).

⁷⁴ Although Barthes is careful to distinguish between the photographic and cinematic effect, a distinction that Metz later reiterates, the sort of ontological analysis of the photograph that Barthes offers is effectively that offered by such theorists of cinematic realism as André Bazin, Siegfried Kracauer, Béla Balázs, and Rudolf Arnheim, all of whom begin their analyses of the cinema with a preliminary consideration of the photographic material that underlies cinematic representation.

Today, though, Barthes' analysis seems trumped by recent technological advances, as it becomes comprehensively accepted that the photograph has been replaced by the digital image, which, according to prevailing definitions such as Manovich's, is severed from any particular referent. We can no longer be sure if the eyes we see in a photograph of Jerome were in fact those that had once gazed upon the Emperor. The sort of singular phenomenon described and cherished by Bazin, by Zavattini, by Barthes, is understood to have simply disappeared, and with it the attendant problems of analogy and reference. Announcements of the end of the photographic era are ubiquitous, and usually asserted in plain and unproblematic terms. Fred Ritchin, for example, has declared "the end of photography as we know it." Summing up the first five years or so of speculation on digital imaging, in 1995, Martin Lister describes a "tidal wave of journalistic and critical attention," noting that "[c]ultural theorists have become (often disingenuously) preoccupied with the 'loss of the real'," announcing the end of the "Mechanical era" and the advent of the "Electronic, the Cybernetic, the Digital, the Post-Photographic Age, Era, or Culture. Epochal change is sensed" (1).

The character of that change is typically presented in epistemological terms, as a change in the relationship between image and object, representation and referent, a relationship that is seen to have come to an end. The new digital image is shown to have forced us to acknowledge the contingent nature of all representation, a contingency that the apparent realism of photography had for too long obscured. "For a century and a half," writes William Mitchell, "photographic evidence seemed unassailably probative" (225). Photographs had been "regarded as causally generated truthful reports about things in the real world [...]" (225). This, though, is no longer sustainable:

But the emergence of digital imaging has irrevocably subverted these certainties, forcing us to adopt a far more wary and vigilant interpretive stance – much as recent philosophy and literary theory have shaken our faith in the ultimate grounding of written texts on external reference, alerting us to the endless self-referentiality of symbolic constructions, and confronted us with the inherent instabilities and indeterminacies of verbal meaning.

An interlude of false innocence has passed. Today, as we enter the post-photographic era, we must face once again the ineradicable fragility of our ontological distinctions between the imaginary and the real, and the tragic elusiveness of the Cartesian dream. (225)

The comprehensively self-referential and symbolic character of digital imagery that Mitchell describes is what Manovich sees for all of the “new media,” where such phenomena as the hyperlink “externalize,” he says, “Peirce’s idea of infinite semiosis and Derrida’s concept of indefinite deferral” (*Language* 290). We are now assumed to be wholly within a self-contained system of representation, defined by internal interdependence, and by the exclusion of all reference to any secure, ontologically determinable exterior.

Reality Re-Presented

To be placed at such a distance from reality, though, to become trapped in a world of only representation and simulation, seems to simplify the relationship between reality and our experience of it, which cannot be so easily separated. In earlier accounts of cinematic realism, the question has often been how the experience of film viewing may in fact shed light upon the complex structures of knowledge, vision and reality. In the work of Stanley Cavell the cinema is presented as uniquely suited to such considerations, a site for the “re-presentation” of reality, which is, to a large extent, the source of the cinema’s pleasure for us. Beginning with the issue of pleasure, Cavell seems, like Metz, to initiate a critical interrogation of the cinema. “The question remains,” he insists, “how has film been able to provide this pleasure?” (15). Yet his answer is in stark contrast to Metz’s.

For Cavell, the source of cinematic pleasure lies precisely in the film's capacity to *re-present* the world, in its compellingly realistic representation of the world. It is "the world viewed" that is offered by the cinema, a renewed vision of the world that is always present to us, the present-ness of which is re-created by the cinematic process. Cavell puts his question even more concisely, revealing its ostensibly ontological assumptions: "What is film?" he asks. "The beginning of an answer," he writes, "is given by the two continually intelligent, interesting, and to me useful theorists I have read on the subject. Erwin Panofsky puts it this way: 'The medium of the movies is physical reality as such.' André Bazin emphasizes essentially this idea many times and many ways: at one point he says, 'Cinema is committed to communicate only by way of what is real'; and then, 'The cinema [is] of its essence a dramaturgy of Nature'" (16). Panofsky's and Bazin's positions are derived from what they see as the fundamental fact that the cinema's medium is photographic, and, as Cavell explains, "that the photograph is *of* reality or nature" (16; emphasis in original). Cavell places this fact within the other basic facts of the cinema, elaborating the central question that will govern all of his subsequent investigations into the cinema. "If to this we add that the medium is one in which the photographic image is projected and gathered on a screen, our question becomes: What happens to reality when it is projected and screened?" (16).

While typically condemned as a naïve realist, Cavell in fact begins by disputing both Bazin and Panofsky. Both were attuned to the complexities of cinematic realism, which Bazin, as we have seen, considered in specifically psychological terms, as the result partly of hope and desire. But neither Bazin nor Panofsky, Cavell suggests, had pursued the issue of reality and its representation far enough, and Cavell is concerned to

provide a more solid philosophical basis for their speculations. Both Bazin and Panofsky (and many other early film theorists) had begun with the question of the photograph, and Cavell is indeed interested in the peculiar quality of the photograph, which they both endeavor to describe, but he wants to ask *why* we find the photograph so peculiar. “A photograph,” writes Cavell, considering Bazin’s formulation, “does not present us with ‘likenesses’ of things; it presents us, we want to say, with the things themselves. But wanting to say that may well make us ontologically restless” (17). It is just such restlessness, he implies, that motivates the strict anti-realist or conventionalist critics, who cannot abide the apparently obvious falsity of the statements of a photographic realist such as Bazin. The Bazinian phrase, “‘Photographs present us with things themselves,’” insists Cavell, acknowledging the basic reasonableness of the conventionalists’ suspicions, “sounds, or ought to sound, false or paradoxical. Obviously a photograph of an earthquake, or of Garbo, is not an earthquake happening (fortunately), or Garbo in the flesh (unfortunately). But this is not very informative.” From the recognition that a photograph is *obviously* not the thing it represents, the conventionalist argument fails to do little more than insist upon this fact. The critique of the anti-realist or conventionalist seems capable of offering little more than such relatively obvious and uninformative observations. It is, Cavell insists, no more helpful than the strict realist’s position, who suggests that the photograph is the object itself, arguing that, “it is no less paradoxical or false to hold up a photograph of Garbo and say, ‘This is not Garbo,’ if all you mean is that the object you are holding is not a human creature. Such troubles in notating so obvious a fact suggest that we do not know what a photograph is; we do not know how to place it ontologically” (17-18). It is this uncertainty that Cavell is interested

in exploring, our difficulties in categorizing such imagery, especially once it is animated in the cinema. “We might say,” he suggests, “that we don’t know how to think of the *connection* between a photograph and what it is a photograph of” (18; emphasis in original) a question he begins to pursue rather vigorously.

Cavell is concerned to address the central paradox of photographic representation, which at once encourages us to say that the photograph *is* the object, when we know perfectly well that it is *not*. Neither position, though, seems to account for the actual nature of the *connection* between a photograph and its object, yet these seem to have been the only positions available, each requiring the rejection of the other. Yet in both cases, for Cavell, the operative idea of “reality” is an impoverished one – either as something that could possibly be wholly recreated and reconstituted by means of a rather crude mechanical recording device – “the camera,” he says, essentially reiterating Bazin’s point, “is no better off epistemologically or scientifically than the naked eye” (192); *or* as something wholly unrelated and unconnected to the images and representations that we are capable of creating – “the idea that photographs [...] never really project or represent reality (when [...] they obviously do)” (188).

In the postscript to a later edition of his book, Cavell describes his impatience with those who had accused him of naïvely confusing the cinema with reality. “My complaint,” he writes, “against the complaint against me to the effect that I am naïve about reality is that it is naïve about reality” (195). To acknowledge that the cinema, in some way or other, has as its subject, as its material, “reality,” or our experience of reality, is to acknowledge the one thing that is so obvious about the cinema. To contest this seems, to Cavell, to be a stubborn refusal in the face of such obviousness. For Cavell,

it is neither the total presence nor the total absence of reality that characterizes photographic and cinematic representation. Each of these is absurd in a different but related respect. Reality is not something that can be wholly and integrally reconstituted, nor can it be replaced by an illusory reconstruction; it is, rather, that which is available to us through the various means we have elaborated to reflect and reproduce our perceptual and cognitive experiences, but also that which we always, inevitably, feel exceeds those means. Indeed, the only appropriate attitude towards reality, Cavell insists, is one of skepticism; but to be skeptical about the extent of our access to and knowledge of reality does not imply that reality is beyond either experience or representation. Rather, and perhaps paradoxically, skepticism, for Cavell, *is* our experience of reality, and it is this experience that is reproduced and reenacted by the cinema.⁷⁵ “Film,” he insists, “is a moving image of skepticism” (188). It is, though, a skepticism understood in the more positive sense that Cavell has elaborated. It is a skepticism that at once characterizes and animates our common experience in the world (common in both senses of the word – what is both everyday and what is shared by all), whereby we feel a certainty that we have access to a reality, while we seem simultaneously incapable of substantiating that certainty, of only ever recording and reproducing our experience of the *limits* of our knowledge. It is this peculiar phenomenological experience that colors our existence, and which is (potentially) reenacted by the cinema.⁷⁶ Cavell continues: “not only is there a

⁷⁵ Cavell’s fully elaborated, positive account of skepticism is offered in his *The Claim of Reason*.

⁷⁶ Not *only* by the cinema, of course. As Cavell has argued elsewhere, the skeptical conundrum is at the heart of artistic endeavors generally, as well as philosophical and religious investigation. He has written as much if not more on Shakespearean tragedy and poetry, music and opera, Wittgenstein and Emerson, guided in all his investigations by the curious quality of the skeptical attitude, the expression of which he finds in these and many other sources. Still, the cinema seems, for Cavell, to be a perhaps unique phenomenon – perhaps the key mode in the twentieth century for the representation and consideration of skepticism.

reasonable possibility, it is a fact that here [at the cinema] our normal senses are satisfied of reality while reality does not exist – even, alarmingly, *because* it does not exist, because viewing it is all it takes” (188-9).

In a certain respect, Cavell’s account corresponds to Metz’s, describing the *adequacy* of cinematic representation when compared to our perceptual or sensory experience of the real world. While Metz, and later theorists, respond by endeavoring to reveal such adequacy as the basis upon which the cinema will seek to delude the viewer, urging that whatever pleasure thus offered be resisted in order to forestall any confusion and insisting that this is merely the impression of reality, Cavell argues, to the contrary, that the cinema provides pleasure in so far as it really does “project reality,” which is to say offers a projection of our common experience of reality, which is made available again for our consideration and contemplation, such a provision understood as the source of our pleasure and satisfaction.

The cinema, of course, is not the only means available, nor is “realistic” representation the only significant mode. “Our vision is doubtless otherwise satisfiable,” he admits, “than by the viewing of reality. But to deny, on skeptical grounds, just *this* satisfaction – to deny that it is ever reality which film projects and screens – is a farce of skepticism” (189). Here Cavell marshals his positive reconstruction of the skeptical tradition, into which he incorporates the history of cinematic representation, finding in the anti-realist response to cinematic pleasure only half of the skeptical equation. “It seems to remember,” he explains, “that skepticism concludes against our conviction in the existence of the external world, but it seems to forget that skepticism begins in an effort to justify that conviction. The basis of film’s drama,” he continues, “or the latent

anxiety in viewing its drama, lies in its persistent demonstration that we do not know what our conviction in reality turns upon” (189). *This*, for Cavell, is the nature of reality, of our experience of reality – its presence and undeniability, coupled with and always accompanied by our inability to prove or substantiate such presence; a conviction in the existence of the external world, threatened (but never really undermined) by the absence of any means of ultimately grounding such a conviction. This is what is presented again and reenacted by the cinema, and it is what must be acknowledged and addressed by any account of the significance of cinema. To fail to do so, to despair and reject the cinema’s offering, to “yield here to the familiar wish to speak of film as providing in general an ‘illusion of reality’ would serve to disguise this latent anxiety – as does the conclusion of philosophical skepticism itself” (189).

Yet this “latent anxiety,” which generally characterizes human existence and experience, is just what art is concerned to pose for consideration, and is what the cinema poses in perhaps the starkest and most significant terms. To dismiss it as “illusion” is to fail to contend with the cinema’s posture, which is merely rejected as merely an *imposture*. “The idea of the illusion of reality,” argues Cavell, “dims the differences in the role of reality posed in painting, in theatre, and in film, and it closes out the wish of art to address reality in order to combat, or suspend, our illusions of it” (189). If the dynamic of existence is derived from our contending with our anxieties about what can know, about our access to and abilities to substantiate our own experiences of reality, art – as well as philosophy and religion – is one of the prime sites for the staging of that dynamic, and the cinema is among the most significant of such sites. “The ‘sense of reality’ played upon in comedy and by religion,” writes Cavell, “or searched by

philosophy and in tragedy, is neither enforced nor escaped in film; one might say that it is there entertained” (189). The cinema provides an insight into the positive aspects of skepticism, or, more precisely, into the means by which we may contend with and accommodate our skepticism, insight into the generative and literally *compelling* force of skepticism:

The moral of film’s image of skepticism is not that reality is a dream and not that reality confines our dreams. In screening reality, film screens its givenness from us; it holds reality from us, it holds reality before us, i.e., withholds reality before us. We are tantalized at once by our subjection to it and by its subjection to our views of it. But while reality is the bearer of our intentions it is possible [...] to refuse to allow it to dictate what shall be said about it. Flanked by its claims to speak for us, it is still open to us in moments to withhold it before ourselves, so that we may see for ourselves and may gladly grant that we are somewhat spoken for. To know how far reality is open to our dreams would be to know how far reality is confined by our dreams of it. (189)

The cinema, as Bazin had said, is indeed a significant site for the realization of our dreams, and, importantly, the site where our dreams about reality are both elaborated and constrained. This is amplified and clarified by Cavell, in his description of the strange and even paradoxical experience of the cinema’s “withholding reality before us,” the strange play of absence and presence that characterizes both cinematic representation and our common experience of the world and our existence. In so far as the questions of knowledge, reality and experience are the central themes of art, philosophy and religion, our pursuit of answers is an ongoing and progressive one. The accomplishments and insights of philosophical skepticism, the degree to which it represents our desire to pursue such question even in the face of the knowledge that they may perhaps ultimately escape us, is testimony to the indomitable spirit of human inquiry. The skeptical attitude has importantly revealed the complexities of such inquiry, and has found a fitting and valuable companion in such revelations in the cinema. The significance of the cinema will be revealed only once its companionability in such an enterprise is acknowledged.

“Film’s easy power over the world,” insists Cavell, “*will* be accounted for, one way or another, consciously or not” (226), and Cavell offers his reflections as part of such an endeavor, by pointing to the cinema’s participation in the elaboration of a positive skeptical attitude, in its acknowledgement of the inevitable distance between ourselves and our reality. “By my account,” he writes, “film’s presenting of the world by absenting us from it appears as confirmation of something already true of our stage of existence. Its displacement of the world confirms, even explains, our prior estrangement from it. The ‘sense of reality’ provided on film is the sense of *that* reality, one from which we already sense a distance. Otherwise the thing it provides a sense of would not, for us, count as reality” (226).

Cinema and Skepticism

The sense of distance, estrangement, the “latent anxiety” that skepticism at once reveals and accommodates, and which the cinema reproduces and reenacts, provided the basis upon which film theorists, following Metz, condemned its impostures. Rather than pursue the significance of the pleasure of recognition that the cinema provides (as troubling as such a recognition may potentially be), which for Cavell derives from the recognition of (in the reenactment of) the inherently limited condition of human knowledge, contemporary film theory endeavored to undermine the cinema’s claims of recognizability. Insisting instead that it is mere illusion, the cinema’s instantiation of the limits of knowledge is overlooked, while the plenitude of cinematic representation – which Cavell sees as the grounds upon which our limitations are in fact reenacted – is condemned as false. The apparent sensory completeness of the cinematic experience is

painstakingly shown to be an illusion, revealed as nothing more than an effect. Such a demonstration is as obvious as the insistence that a photograph of Greta Garbo is not Garbo in the flesh. One knows, of course, when at the cinema, that the world on the screen is not the world. Yet, as Cavell convincingly demonstrates, there is nevertheless and undeniably a sense of recognition, an authentic reproduction of the “sense of reality.” This is precisely what the conventionalist and anti-realist are responding to. From this, one may imagine the spectatorial experience in the positive, constructive terms that Cavell describes, as an opportunity to reflect upon and contend with the distance between ourselves and the world, as an opportunity for the skeptical subject who “remembers” that skepticism derives from a desire to substantiate our conviction that, despite such a distance, that world exists nevertheless. In contrast, one may describe a spectatorial experience characterized by confusion and by a propensity to believe in the false imagery on display. This, though, stands in contrast to the common experience at the cinema, which, while it consists of a *recognition* as described by Cavell, does not (typically) result in any real confusion. Yet the task for contemporary film theory, which “forgets” the original motivation behind the skeptical attitude, is to demonstrate the cinema’s lack of substance, its actual physical paucity, its literally insubstantial nature, its very real limits described, for instance by Bazin, and to imagine the possibility of a subject for whom these may be overlooked, a subject who might confuse the shadows cast upon the screen before them with real objects and events. Such an imaginary subject embodies and manifests the potential dangers that await anyone who approaches the cinema with anything other than a determination to resist its “sense of reality.”

Chapter 7: The Weight of the Real

Early in its history the cinema discovered the possibility of *calling* attention to persons and parts of persons and objects; but it is equally a possibility of the medium not to call attention to them but, rather, to let the world happen, to let its parts draw attention to themselves according to their natural weight.

Stanley Cavell
(*The World Viewed* 25)

Against Reality

Recent accounts of digitization are, if nothing else, determined efforts to resist a “sense of reality.” If, though, as I have been suggesting, the “reality” of the cinema derives from something other than its physical characteristics, from its mechanical and photo-chemical capacities for the simple recording of an empirical, pro-filmic reality, then the “losses” of digitization are less significant than often suggested. While the digital cinema appears to conform more to a strictly semiological analysis, and to have become more amenable generally to a theoretical analysis, many commentators seem at the same time to be troubled by consequences of digitization, by the apparent loss of what is understood to have been among the last, if not *the* last modes of accessing or representing reality. Among those considering the impact of digitization, there is a deep sense of regret and concern, as the cinema seems to have lost those aspects that had made it important and meaningful. We are now faced, it seems, by a medium that has become incapable of informing us about our relationship to an external world, and to the others with whom we share that world. As Sean Cubitt, has insisted, the cinema seems locked into an uninformative, solipsistic loop, denying us any of the sorts of insights it may have been able to offer in the past. The general consensus is that the cinema’s images, having lost

the capacity for reference, have also lost their greater significance, unable any longer to perform any meaningful function.

Yet such claims are based upon what amounts to little more than technical changes to the cinema's mechanical apparatus. As I have been insisting, the cinema itself, the basic contours of a cinematic experience, have remained the same despite such changes, and the possibility remains for the cinema to shed light and offer insight into the realms of knowledge and experience that it is typically concerned to represent. While it is one thing, though, to say that the cinema has remained intact, despite the advent of digitization, the *question* of the cinema remains, as does the need for an answer to that question. Compelling and provocative accounts of the cinematic experience have been provided in the past which have seriously and patiently considered the question of cinema and reality, and as part of the effort to discern what remains of the cinema, what capacities the cinema continues to possess, how even a digital cinema may have retained its relationship to the real, these are worth reconsidering. I would like to turn, then, in this final chapter, to one of the most significant and informative of such accounts, that of Stanley Cavell, considering in some more detail his description of the subtle and complex nature of the cinema's representation of reality, and placing his account in the context of one of the most significant philosophical account of reality, revealing the realist assumptions the underlay Cavell's account, which coincides in many ways with the philosophical realism of Charles Peirce.

Stanley Cavell: Cinema, Knowledge and Community

Knowledge, reality, the individual and society – these, for Cavell, are among the central questions of cinema, and the cinema has, he is concerned to demonstrate, significantly offered some hope in its account of our relationship to the world, to reality, in so far as it points to crucial aspects of that relationship. “The myth of film,” writes Cavell, in *The World Viewed*, “is that nature survives our treatment of it and its loss of enchantment for us, and that community remains possible even when the authority of society is denied us” (214). Cavell is fundamentally interested to explain the source of the cinema’s significance, to explain why the cinema *matters*, and he looks to an earlier consideration on the importance of art. At the beginning of his book on film, Cavell confesses to having been puzzled by Leo Tolstoy’s provocative question, “What is art?,” and puzzled further by his even more provocative answer, which was, Cavell notes, “to dismiss most of the great art of the past” (3).⁷⁷ In order to make sense of Tolstoy’s investigations, and of his “radical criticism,” Cavell concluded that “Tolstoy is not asking himself about the nature of art, but about the nature of the importance of art” (3-4). Yet even this distinction did not seem to assuage Cavell, who pushed the issue further. “It was,” he explains, “when I came to see that these are not separate questions – that the answer to the question ‘What is the importance of Art?’ is grammatically related to, or is a way of answering, the question ‘What is art?’ – that I came to an understanding of what Tolstoy was talking about, and came to comprehend further ranges in my caring about art” (4).

⁷⁷ See Tolstoy, *What is Art?*

For Tolstoy, the answer to the question “What is art?” had to derive from the unflinching recognition that, for most people, art was effectively unimportant, which led to his radical critique and to his rejection of traditional aesthetic canons. “I assume,” writes Cavell, “that Tolstoy saw what was there to be seen, and that it is more evident now than when he wrote, if less apparent” (4). The traditional arts, Cavell insists, “[m]usic, painting, sculpture, poetry [...] are not *generally* important, except pretty much for the men and women devoted to creating them” (4). The extent of this general disregard for such arts may well be questioned, and the conditions of the reception of these arts may well, in the thirty years since Cavell wrote this, have been altered to such a degree that the question of their importance may need to be raised again.⁷⁸ But the corollary, if we may call it so, to such disregard, is the fact of the intense and general interest in the cinema, in movies, which has persisted, and perhaps only increased. It is with a version of Tolstoy’s question, then, that Cavell begins, asking, “Why are movies important?” – and he immediately justifies his question by noting that, “I take it for granted that in various obvious senses they are” (4). Contrasting the situation of the traditional arts, Cavell describes a generally high regard for and interest in, even passion for, the cinema: “But rich or poor, those who care about no (other) art and those who live on the promise of art, those whose pride is education and those whose pride is power or practicality – all care about movies, await them, respond to them, remember them, talk about them, hate some of them, are grateful for some of them” (4-5).

⁷⁸ The cinema may well have played a significant role in the transformation of the conditions for the reception of art, in the era of massively attended, “blockbuster” art shows at major museums and galleries around the world, which have turned to the cinema for inspiration in both the marketing of their events – the widely employed term “blockbuster” is not an innocent one – and in their dramatic, often “cinematic,” presentations.

Cavell's subsequent efforts are undertaken to suggest the source of such interest, the origins of such regard, and the reasons for the obvious and undeniable *importance* of the cinema, of film, which amounts to the question, "What is film?" His answer consists in part, and is derived, as we have seen, from the ostensibly "realist" theories of Erwin Panofsky and André Bazin, whose remarks on the cinematic material, which they conceived as "physical reality as such," or Nature, or the World, lead Cavell to pursue such notions. He has immediately to concede, however, that, "'physical reality as such,' taken literally, is not correct. What Panofsky and Bazin have in mind," he suggests, "is that the basis of the medium of movies is photography, and that a photograph is *of* reality or nature" (16). On the basis his specific philosophical interests, which extend from Heidegger and Wittgenstein to Emerson, Whitman, Thoreau and Austin, Cavell pursues the question of how and in what sense a photograph can be *of* reality, significantly rejecting simplistic mechanical or photo-chemical explanations, endeavoring instead to relate the cinema's *account* or representation of reality with significant philosophical and aesthetic accounts, discovering affinities, as we have seen, between the enduring tradition of skepticism and the cinematic attitude. Cavell renders such an affinity in a variety of ways, and from various points of view, insisting, for example, that "common sense is, and ought to be, threatened and questioned by the experience of film" (212), and that, "we are at the mercy of what the medium captures of us, and of what it chooses, or refuses, to hold for us" (126).

Cavell, in short, is concerned to describe the *peculiarity* of the cinema, its simultaneous avowals and disavowals, its presence and absence, its apparent directness and immediacy, which resolves, nevertheless, in a distance, an aloofness, and a sense of

deficiency. These, though, are what contribute to its uncanny familiarity, and its significance for us. What the cinema reveals is something about the very condition of the real and of our experience of reality. "Film," he insists, "takes our very distance and powerlessness over the world as the condition of the world's natural appearance" (118). The cinema enacts, or re-enacts, and reproduces, the partial nature of perception, of cognition, of awareness and knowledge. "Am I saying," asks Cavell, "that everything revealed by film is true?" Well, yes, but only true to the complex and confounding nature of truth, and to the confounding and even paradoxical qualities of our modern technologies for the reproduction of "reality." What, he asks, is the potential motivation, for example, for the great modernist photographer Edward Steichen's obsessive repetitions, why does he "take a thousand various pictures of the same cup and saucer? Perhaps he will not assume that we know beforehand how few or how many revelations the truth will take, or how any may be made. Call truth infinite: certainly there is no reason to suppose the number of facts to be limited, and all are compatible (compossible)" (120).

A further peculiarity of the cinema is its (natural) correspondence with the concerns of art as they revealed themselves within the contexts of modernism, as art became concerned with instantiating the problems and limits of representation, and specifically the adequacy of aesthetic representation in relation to the limits of human knowledge and understanding. Cavell confronts the claims that the cinema was the first wholly and specifically constituted *modern* art, derived from and consisting in the techniques and technologies of modernity, and uniquely suited thereby to represent the modern condition, inherently suited, that is, to the project of modernism. Yet it is, for

Cavell, perhaps less straightforward than often suggested, suggesting that the cinema bore a different relationship to the problems of modernism. “Movies from their beginning,” he argues, “avoided (I do not say answered) modernism’s perplexities of consciousness, its absolute condemnation to seriousness” (118). This was the result of the cinema’s (apparently) unique autonomy from the traditional techniques and conditions of aesthetic production. “Media,” he explains, “based upon successions of automatic world projections do not, for example, have to establish presentness to and of the world: the world is there. They do not have to deny or confront their audiences: they are screened. And they do not have to declare the artist’s presence: the object was always out of his hands” (118).⁷⁹

Still, as he notes, an urge developed within the cinema for something like modernist self-reference, for a modernist self-avowal, a questioning, an interrogation of modes and techniques, in an attempt, presumably, to be more candid about its status as an art, as something other than what it represents, a tendency that had become obvious and widespread by the time Cavell was writing at the beginning of the 1970s. Yet the hopes of such avowals, Cavell suggests, have to be tempered by an acknowledgement of what the cinema has already revealed, and by the limits of modernist, formal gestures, insisting that, “it is plain enough that self-reference is no more an assurance of candor in movies than in any other human undertaking. It is merely a stronger and more dangerous claim, a further opportunity for exhibiting the self” (124). Moreover, the cinema, given its peculiar status, is effectively immune to the usual modernist strategies of self-reference,

⁷⁹ “Automatic world projections” is the phrase Cavell coins to describe the image in the cinema, in order to trouble the common-sense notion that the photographic quality of cinematic imagery provides a direct representation of the world. Instead, it is a *projection* of the world that is produced, but one that is, as a result of the photographic technique of the cinema, produced automatically.

having already devised and developed its own, as a result of the cinema's natural inclination towards avowal. "The specific emptiness of the notion here," he argues, of "modernist" cinematic practices of referentiality, "is its forgetfulness of the film's early capacities for self-reference, both by alluding to other movies and by calling attention to the camera at hand." Groucho Marx's jokes about *Citizen Kane* – "I thought they burned that," he remarks in an aside, seeing a sled with "Rosebud" inscribed upon it – or Katherine Hepburn's sly references to her earlier triumphs, and to the very constructedness and theatricality of her own endeavors – reciting a line from *Stage Door* as she enters the scene in *The Philadelphia Story* – or in *His Girl Friday*, when Cary Grant's character Walter Burns says to Ralph Bellamy's character Bruce Baldwin, "Haven't we met some place before?" – "they had," notes Cavell, "in the same juxtaposition of roles, a couple of years earlier in *The Awful Truth*" (124)⁸⁰ – are all offered by Cavell as instances of the cinema's easy confidence and self-awareness. These are not, moreover, mere comic asides; they refer to the more robust quality of the cinema to sustain and accommodate the recognition of its own status as an autonomous, aesthetic realm (but without, importantly, necessarily becoming "serious" about it, nor necessarily producing an alienating effect), and, Cavell argues, "they confirm for the insiders [a status made possible, moreover, to any dedicated and fastidious moviegoer] a strong sophistication in moviegoing, a proof that their increasing consciousness of movie-making routines will not jeopardize the film's strength for us" (124). Such gestures, more significantly, reveal even further the cinema's general capacity for instantiating the

⁸⁰ Bruce Baldwin, who is variously spurned, pursued, spirited away and abused, but is constantly an object of inquiry in the film, is described by those searching for him or explaining to others who he is, as looking just like Ralph Bellamy.

suppressed hopes of skepticism, its reproduction of the basic condition within which we find ourselves, which is at once one of limit and of possibility, that condition which allows us knowledge at all, but seems to keep *full* knowledge at one remove, the result of our isolation and uncertainty as separate individuals, the condition from which we desire to escape. “The comedy of self-reference satirizes the effort to escape the self by viewing it, the thought that there is a position from which to rest assured once and for all of the truth of your views” (126).

The film, of course, especially in its moments of comic self-awareness, rejects such a possibility, instead offering for our consideration, and even for our pleasure and entertainment, the inherently limited extent of the world it presents for us, which reveals and acknowledges the limits to our knowledge, as individuals, of the full scope of the real world. Cavell effectively distinguishes between two possible responses to the cinema’s assuredness: a modish, refusal to admit to its relation to “reality,” in the form of abnegating gestures of irrelevance, typical of a “modernist,” self-conscious cinema, or a more steadfast acknowledgement and pursuit of what the cinema has all along revealed. If this more constructive and more satisfying latter project is to be undertaken, Cavell insists that “the camera must now, in candor, acknowledge its being present in the world but its being outside its world.” The challenge facing the cinema, in 1971 (the challenge is perhaps even more acute now), is to fully account for the function it has always performed – with some ease and with some grace, but also with an occasional smugness and certainty – and to attend to the real challenges, of knowledge and representation, that it has functioned to reveal. Cavell describes “film’s growing doubt of its ability to allow

the world to exhibit itself, and instead its taking over the task of exhibition, against its nature” (132).

The development of a cinematic modernism is perhaps inevitable, but there is a choice. It may either maintain the cinema’s “naturally” modern qualities, or it may force it into a depressing spiral of abnegation. Cavell, though, is hopeful: “But the same techniques which serve to betray it can also be used, and seen, to keep faith with its nature” (132). The question of whether the cinema has “kept its faith” is central to accounts of digitization, and it is the question to which we shall return in the concluding chapter, but the more general question of the quality, scope and intentions of a cinematic modernism is one that could also be pursued within the terms suggested by Cavell, which may go some way towards solving the conundrum of cinema’s simultaneous modernity and modernism. For the purposes of my argument, though, it is important to note that contemporary film theory, as elaborated since the late 1960s, has assumed an effectively modernist task in relation to the cinema, without fully considering the modern tendencies that Cavell describes, which characterized the cinema from its first moments. The theoretical charge to the cinema has been that it must perform greater and more significant acts of self-acknowledgement, or that it must be shown to have failed to do so – such charges becoming increasingly acute in the digital age. Yet the character of such charges correspond to those which Cavell ascribes to a “forgetful” cinematic modernism, which has not fully recognized the depth and complexity of the cinema’s original self-awareness, its necessary steadfastness: “From the narcissistic honesty of self-reference there is opened the harder acknowledgments of the camera’s outsideness to its world and my absence from it” (133).

This is, again, as Cavell has said, the “myth” of cinema, but it is an important and sustaining myth. It is the myth, as Cavell has said, that “nature survives our treatment of it, and its loss of enchantment for us,” survives our “absence” from the world, which is reenacted by the camera’s inevitable “outsideness to *its* world,” which persists despite such outsideness, and despite our absence. This is combined with the myth that “community remains possible for us even when the authority of society is denied us” (214). These two notions can now be pursued in some more detail, as well as what connects them. Movies, it has been said many times, typically in the form of a critique, offer the promise of happiness, but the nature of that promise, and the nature of the kind of happiness, is rarely reflected upon, except to be dismissed. The significant promise of the movies is not the promise of “glamour, magical resolution, and the association of stars,” insists Cavell, although he is quick to add that, “I do not deny that such wishes are often excited and pandered to, not alone by movies” (213). There is, though, more on offer, and there is an offer of more significance, instantiated by both the content and the form of cinematic re-presentation. “But movies also promise us happiness,” he argues, “exactly not because we are rich or beautiful or perfectly expressive, but because we can tolerate individuality, separateness, and inexpressiveness. In particular, because we can maintain a connection with reality despite our condemnation to viewing it in private” (213), despite the solitude of cinematic spectatorship, which is a corollary to our more existential solitude as individuals, which has, perhaps, only grown more acute. The cinema’s peculiarity, which may appear as a conundrum, lies in its mobilization of the techniques and technologies of the very modernity that has fostered this acuteness. The cinema, that is, offers some sort of respite in (and from) a disenchanting age, in an era,

Cavell suggests, that found expression in certain trends of German philosophy in the nineteenth century, and, at the end of that century, in the aphorisms and speculations of a “crazy German philologist,” who Cavell insists, was not “speaking merely for himself (even if mostly to himself) when he announced the Death of God – by which he meant to record an altered relation in which we have placed ourselves to the world as a whole, to nature and to society and to ourselves” (213-14).

But with the passing of one myth, comes a new one, and the means for expressing these new conditions, this new situation (which we created for ourselves?), are elaborated shortly after Nietzsche makes his pronouncement (or announcement). The cinema takes as its main subject that world which has lost its enchantment for us, that world that has been severed from its traditional anchors and guarantees, and seeks to reveal the means by which it may be reenchanted. The cinema, through its camera eye, reveals a world from which we have become estranged (and reveals us, and itself, to be estranged from it), and tells stories that suggest how we all have at least this in common, such recognition itself offering at least the hope for the possibility of reenchancement and reaffiliation, specifically as it reveals a world in which individuals seek the companionship of others, seek a kind of *proof* in the companionship of others, which comes to serve as a ground in a world that seems increasingly groundless:

[The movies’] unappeasable appetite for stories of love is for stories in which love, to be found, must find its own community, apart from, but with luck still within, society at large; an enclave within it; stories in which society as a whole, and its laws, can no longer provide or deny love. The myth of movies tells not of the founding of society but of a human gathering without natural or divine backing; of society before its securing (as in the Western) or after its collapse (as in the musical or the thirties’ comedy, in which the principals of romance are left on their own to supply the legitimacy of their love). It shares with any myth the wish for origins and comprehension which lies behind the grasp for human history and arbitration. In myth the past is called before us, reenacted, and in its presence we are rededicated. On film, the past which is present is pastness or presentness itself, time itself, visually preserved in endless repetition, an eternal return,

but thereby removed from the power to preserve us; in particular, powerless to bring us together. (214)

The fact of such powerlessness, however, finds an antidote (an answer, a consolation?) in the cinema's insistent acknowledgement that the only hope for a coming together lies in the realization of what it means to be apart, echoing Peirce's hope that we are more than a mere collection of isolated individuals, pursuing happiness in only an attenuated, individual sense, the only possibility of which must come from the knowledge of (the reality of) a world from which we are always at a distance, but from which we are *all* distanced, a distant world which at the same time provides the grounds for or basis of community, and a world that, while distant, is nevertheless present, visible, available. "Film's promise," writes Cavell, "of the world's exhibition is the background against which it registers absolute isolation: its rooms and cells and pinions hold out the world itself." But we must boldly acknowledge that this is the state of the relation between self and world. "To satisfy the wish for the world's exhibition we must be willing to let the world as such appear" (159), Cavell maintains. We must, he implies, allow ourselves to recognize the world, as it is, which is as it may appear in the cinema, despite the effort and dangers this reveals. But Cavell finds philosophical precedence; he finds a philosophical attitude that is consonant with the cinematic attitude he is endeavoring to describe. "According to Heidegger, this means that we must be willing for anxiety, to which alone the world as world, into which we are thrown, can manifest itself; and it is through that willingness that the possibility of one's own existence begins or ends" (159).

The cinema's revelation of a world capable of manifesting itself, though, a world and a reality wholly independent of anything I may think about it, with a coherence which is not mine to grant, but which belongs, instead, to the world in itself, bears with it

the risk of insignificance, and the even more radical risk of impotence or even non-existence. The world does not require me in order for it to come into existence, the meaning and the significance of the world is such that it persists (exists) without me. “This,” Cavell says, “is an importance of film – and a danger. It takes my life as my haunting of the world [...]” (160). Given this danger it is not surprising that the independent existence of the world, or reality, is denied, and it is not surprising that the cinema, in so far as it presents a vision of the world, “the world viewed,” as a world independent from us, distant from us but coherent nonetheless, present nonetheless, is forced, by a modernist, skeptical practice and theory, to reveal a world that *lacks* coherence, a vision of the world that depends upon *us* for its coherence. This is the impetus of a forgetful cinematic modernism, and of an equally forgetful modernist critique of the cinema. “So there is a reason,” acknowledges Cavell, “for me to want the camera to deny the coherence of the world, its coherence as past: to deny that the world is complete without me” (160). This is the position of the nominalist. “But there is,” he insists, “equal reason to want it affirmed that the world is coherent without me” (160). This is the realist.

The Real and the Nominal

A fuller account of the quality and character of cinematic representation, significantly and compellingly described by Cavell, for whom, though, the contest between nominalism and realism remain implicit, may be pursued on the basis of Peirce’s detailed and expansive theory of signs, his semeiotic, which is elaborated upon an explicitly realist basis, which is offered as a substantial and crucial alternative to an

anxious nominalism. The stance of nominalism is the voice of determined *reason*, which insists that the only sense, the only meaning and significance that the world can have is that which I grant it. The world, if it has any coherence, receives it from me – if the world is complete it is me who completes it. Against this hope, Peirce insists upon the quality of the world, of reality, that will inevitably exceed our reasoned accounts of it. In a response to Hegel (who, Peirce insists, is a nominalist, although one with “realistic yearnings” (1.19)), Peirce writes:

Let the Universe be an evolution of Pure Reason if you will. Yet if, while you are walking in the street reflecting upon how everything is a pure distillate of Reason, a man carrying a heavy pole suddenly pokes you in the small of the back, you may think there is something in the Universe that Pure Reason fails to account for; and when you look at the color *red* and ask yourself how Pure Reason could make *red* to have that utterly inexpressible and irrational positive quality it has, you will perhaps be disposed to think that Quality and Reaction have their independent standing in the world. (5.92)

Peirce is well aware of the appeal of nominalism, of perhaps even the necessity of the nominalist attitude if one is to have a sense of having a grip or a hold on the world, as a realm of mere sensation to which we may apply our own sense, in order that it *have* sense. It is an attractive and appealingly intuitive position, such that after the later middle ages, and into the modern era, there was, Peirce says, “a tidal wave of nominalism,” insisting that, “in one word, all modern philosophy of every sect has been nominalistic” (1.19). Perhaps an exaggeration (although he does suggest F.W. Schelling as an exception), but the point that Peirce is concerned to make is that there is one basic distinction, one crucial dispute, at the heart of philosophy. “The heart of the dispute,” he explains, “lies in this. The modern philosophers [...] recognize but one mode of being, the being of an individual thing or fact, the being which consists in the object’s crowding out a place for itself in the universe, so to speak, by reacting by brute force of fact, against all other things” (1.21). Against this view, which recognizes only a brute,

monadic reality, available to the senses and subject (subordinate) to reason for its significance, Peirce offers a richer account of reality, one which, moreover, is available to thought, but independent of what that thought may be. “My view,” he writes, “is that there are three modes of being. I hold that we can directly observe them in elements of whatever is at any time before the mind in any way. They are the being of positive qualitative possibility, the being of actual fact, and the being of law that will govern facts in the future” (1.23). These three modes find more specific expression in Peirce’s phenomenological categories of Firstness, Secondness and Thirdness, which are the source of subsequent distinctions and trichotomies, such as his basic triadic sign model, consisting of a Representamen, an Object and an Interpretant. From these there are further triadic distinctions, describing the various kinds of relationships that may pertain between each of the sign’s three elements, one of the most important and famous being the relationship between Object and Representamen,⁸¹ in the form of the *Icon*, “a

⁸¹ It is important to remember that these are elements of the larger sign structure that Peirce describes, so that the “Object,” or more precisely, the “Immediate Object,” is a semiotic phenomenon, not the actual existent or physical object, but the object as it is represented in relation to a Representamen and an Interpretant. Nevertheless, as Peirce insists, there are “usually two objects” (suggesting the possibility of more) the Immediate and the Dynamical, this latter being “the Reality by which some means contrives to determine the Sign to its Representation” (4.536). (There is also the Immediate, Dynamical and *Final* Interpretant.) More interestingly, and more subtly, Peirce later, in 1909, describes the Dynamical Object as that “which, from the nature of things, the Sign *cannot* express, which it can only *indicate* and leave the interpreter to find out by *collateral experience* (8.314). Here Peirce stresses the necessarily *indicative* aspect of every instance of signification, which suggests the need and presence of some object, and the need for attention to be drawn, by means of an index, to that object in order for semiosis to occur. “For instance,” he explains, “I point my finger to what I mean, but I can’t make my companion know what I mean, if he can’t see it, or if seeing it, does not, to his mind, separate itself from the surrounding objects in the field of vision” (8.314). Peirce pursues this further, and endeavors to reproduce the complexity of even the simplest instance of semiosis, grounded in an indicativeness, or indexicality, and, at the same time, provides a clear account of the various divisions and functions of the elements of the sign. In response to a query (itself a sign subject to analysis) from his wife about the weather, Peirce answers: “‘It is a stormy day.’ Here,” he reflects, considering this statement, “is another sign. Its *Immediate Object* is the notion of the present weather so far as this is common to her mind and mine – not the *character* of it, but the *identity* of it. The *Dynamical Object* is the *identity* of the actual or Real meteorological conditions at the moment. The *Immediate Interpretant* is the *schema* in her imagination, i.e. the vague Image or what there is in common to the different Images of a stormy day. The *Dynamical Interpretant* is the disappointment or

representamen which fulfills the function of a representamen by virtue of a character which it possesses in itself, and would possess just the same though its object did not exist”; the *Index*, “a representamen which fulfills the function of a representamen by virtue of a character which it could not have if the object did not exist, but which it will continue to have just the same whether it be interpreted as a representamen or not”; and the *Symbol*, “a representamen which fulfills its function regardless of any similarity or analogy with its object and equally regardless of any *factual* connection therewith, but solely and simply because it will be interpreted to be a representamen” (5.73).

This is the trichotomy that has become most well known, but it is important to stress the integrity of Peirce’s system, the need to understand the specific functions such trichotomies perform. It is perhaps even more important, though, to understand the basic and unswerving *realism* in the service of which Peirce has elaborated his semeiotic. Peirce insists that, “in order that anything should be a Sign, it must ‘represent,’ as we say, something else, called its *Object* [...],” and that “[i]f a Sign is other than its Object,⁸² there must exist, either in thought or in expression, some explanation or argument or other context, showing how – upon what system or for what reason the Sign represents the Object or set of Objects that it does” (2.230). Peirce describes the actions and the

whatever actual effect it at once has upon her. The *Final Interpretant* is the sum of the *Lessons* of the reply, Moral, Scientific, etc. Now it easy to see that my attempt to draw this three-way, ‘trivialis’ distinction, relates to a real and important three-way distinction, and yet that it is quite hazy and needs a vast deal of study before it is rendered perfect” (8-314).

⁸² Significantly, though, Peirce can easily imagine a Sign that is not “other” than its object, which also *is* its Object, in the case, for instance, of a theatrical prop that is also the actual, historical object to which the prop, within the realm of the fiction, refers. Or rather more subtly: “On a map of an island laid down upon the soil of that island there must, under all ordinary circumstances, be some position, some point, marked or not, that represents *qua* place on the map, the very same point *qua* place on the island” (2.230). Peirce also notes that a sign may have more than one object: “Thus, the sentence ‘Cain killed Abel,’ which is a sign, refers at least as much to Abel as to Cain, even if it be not regarded as it should, as having ‘a *killing*’ as a third Object” (2.230). Such distinctions and possibilities are, importantly, determined according to use and function.

relations established between the different aspects of the sign – the representamen, object and interpretant – which are determined according to such contexts and arguments, but all of which resolves (ultimately) in a real identity between sign and object: “According to this every Sign has, actually or virtually, what we may call a *Precept* of explanation according to which it is to be understood as a sort of emanation, so to speak, of its Object” (2.230). Peirce is at some pains to insist upon this point, and to counter notions of the sign, or notions of the relation between sign and object, that discount the possibility or the *necessity* of that *something* for which the sign stands for someone, in some respect or capacity, as attenuated as it may be:

The Sign can only represent the Object and tell about it. It cannot furnish acquaintance with or recognition of that Object; for that is what is meant in this volume by the Object of a Sign; namely, *that with which it presupposes an acquaintance in order to convey some further information concerning it*. No doubt there will be readers who will say they cannot comprehend this. They think a Sign need not relate to anything otherwise known, and can make neither head nor tail of the statement that every Sign must relate to such an Object. But if there be anything that conveys information and yet has absolutely no relation nor reference to anything with which the person to whom it conveys the information has, when he comprehends that information, the slightest acquaintance, direct or indirect – and a very strange sort of information that would be – the vehicle of that sort of information is not, in this volume, called a Sign. (2.231; emphasis added)

That about which a sign may “convey some further information,” and to which it must bear some “relation” or make some “reference,” the realm, that is, of the (dynamical) object, is *reality*, the complexity and obscurity of which Peirce is more than willing to acknowledge, but the nature of which must be considered and accounted for if his semiotics to have any value. Reality is, he insists, the proper subject of logic; it is “a conception that particularly concerns it,” and one that must be clarified. There is a functional enough, common-sense understanding of reality, he admits, which is clear if, he says, one means “clearness in the sense of familiarity [...]” (5.405). Understood as that with which we are all familiar, to which we have constant, everyday recourse, “no

idea could be clearer [...]. Every child uses it, never dreaming that he does not understand it” (5.405). Upon consideration, however, the concept becomes less clear, and less familiar. “As for clearness in its second grade, however” writes Peirce, “it would probably puzzle most men, even among those of a reflective turn of mind, to give an abstract definition of the real” (5.405). Such a definition, however, is crucial in order to be able to discuss and describe the modes by which we may have access to reality, which is that to which all signs must ultimately refer. Peirce’s approach, though, given the complexity of the issue, is somewhat oblique, so that he comes at the question of reality through a consideration of its putative opposite – which is how, he suggests, the very notion likely emerged. “And what do we mean by the real?” he asks. “It is a conception which we must first have had when we discovered there was an unreal, an illusion; that is, when we first corrected ourselves” (5.311). Elsewhere, though, Peirce considers the nature of such an opposition, between the real and the unreal, which is an opposition that may in fact provide the means of distinguishing the two concepts, as well as the inevitable relation between them.

Having emerged as a concept, then, out of an initial puzzlement, reality proved even more puzzling once we began to reflect upon it, once we sought to define it. “Yet such a definition may perhaps be reached by considering the points of difference between reality and its opposite, fiction” (5.405). Upon consideration, however, this traditional opposition is not as clear and distinct as it may at first appear, and leads ultimately to a specific and defining aspect of reality, rendered as an expansive concept, including all manner of phenomena, physical and otherwise:

A figment is a product of somebody’s imagination; it has such characters as his thought impresses upon it. That these characters are independent of how you or I think is an external reality. There are, however, phenomena within our own minds, dependent upon

our thought, which are at the same time real in the sense that we really think them. But though their characters depend on how we think, they do not depend on what we think those characters to be. Thus, a dream has a real existence as a mental phenomenon, if somebody has really dreamt it; that he dreamt so and so, does not depend on what anybody thinks was dreamt, but is completely independent of all opinion on the subject. On the other hand, considering, not the fact of dreaming, but the thing dreamt, it retains its peculiarities by virtue of no other fact than that it was dreamt to possess them. Thus we may define the real as that whose characters are independent of what anybody may think them to be. (5.405)

The significance of this definition, based as it is upon fundamentally *realist* assumptions, is that reality possesses an independent character, the independence of which determines that it may, ultimately, be known (even if only partially). Signs function, then, as the means by which such character is made knowable; semiosis is the means by which we achieve an acquaintance with the real, with truth, with an independent reality, the existence of which determines the very capacity for sign usage, which in turn potentially reveals certain aspects of that reality. Peirce is careful, though, to acknowledge that our knowledge, our knowledge of reality, is inevitably partial. Each sign has only a specific degree of pertinence, and reveals only certain aspects of the character of reality. Even partial knowledge, however, is knowledge, and Peirce's semiotics fundamentally progressive and, as Christopher Hookway and others have argued, essentially *social*. Knowledge is elaborated over time and collectively. Reality is the basis against which we can make distinctions in the course of such elaboration. "We employ the notion [of reality]," argues Hookway, "to create the possibility of a discrepancy between what we think and what is actually the case; it is needed to make sense of ignorance and error" (35). For Peirce, the initial distinction between the real and the unreal led importantly to a further distinction between the individual and the community, the larger context of which is the only guarantee of the development of (and potentially the ultimate absolute achievement of full) knowledge. "Now the distinction

for which alone this fact logically called,” he argues, “was between an *ens* relative to private inward idiosyncrasy, and an *ens* such as would stand in the long run” (5.311).

Reality – the real – has an essentially social and communal character:

The real, then, is that which, sooner or later, information and reasoning would ultimately result in, and which is therefore independent of the vagaries of me and you. Thus the very origin of the conception of reality shows that this conception involves the notion of an unlimited COMMUNITY, without definite limits and capable of a definite increase of knowledge. (5.311)

A world independent of “the vagaries of me and you” – this is the world troublingly revealed, as Cavell insists, in the cinema, in the experience of our witnessing a world, the reality and events of which emerge and unfold regardless of our presence, regardless of our own thoughts about that world or the events that occur in it. It is also, he concedes, what may make us want “the camera to deny the coherence of the world,” to resist the revelations that the cinema offers us, insisting instead that the world is coherent only in so far as we make it so, which is the underlying desire of nominalism. Yet it is only a more steadfast realism that acknowledges our position outside the world, a world coherent and complete, independent of the vagary of my existence. Such vagary, though, is ultimately redeemed, as Cavell endeavors to express: “A world complete without me which is present to me is the world of my immortality” (*World Viewed* 160). This is what may be revealed by the cinema, if we allow it to affirm the world’s independence, if we accept its vision and its insistence “that the world is coherent without me. This is essential,” argues Cavell, “to what I want of immortality: nature’s survival of me. It will mean that the present judgment upon me is not yet the last” (160).

As Cavell has said, “[t]he ‘sense of reality’ provided on film is the sense of *that* reality, one from which we already sense a distance” (226). It is, however, and importantly, a reality at once distant *and* present, a world “complete without me but

present to me,” the very world Peirce is endeavoring to describe, the very bond between ourselves, as limited individuals, and the world of reality, which transcends any particular individual but which is available to the individual in certain particularities. As Hookway notes, Peirce, in his discussion of reality, “is anxious to account for reality in a way that does not divorce it from what is knowable” (35). As Peirce insists, “the absolutely incognizable is absolutely inconceivable,” and “whatever is meant by any terms as ‘the real’ is cognizable in some degree, and so is the nature of a cognition, in the objective sense of that term” (5.310). Peirce’s discussion of the real, then, is inevitably tied to his account of the individual, and the condition of being in relation to a world at once distant yet present to us. In his account of reality, as Hookway notes, “[h]e takes his cue from his discussion of the emergence of the concept of the self” (35).

For Peirce, a concept of the self, of the individual who is endeavoring to discover the world and reality which seems inevitably distant, and who is seeking community with other similarly constituted individuals, is central to his theory. Peirce is led to the conclusion that the human being is of the nature of a sign, that as we live in a universe of signs, so we ourselves are signs. If knowledge or reality is available through the means of the sign, then our knowledge of ourselves is also and invariably in the form of signs. “Such being the nature of reality in general,” he asks, “in what does the reality of the mind consist? We have seen that the content of consciousness,” he concludes, “the entire phenomenal manifestation of mind, is a sign resulting from inference” (5.313). Yet this does not lead to the potential nihilist despair of comparable post-modern pronouncements, which offer an apparently similar account of subjectivity as a merely illusory semiotic phenomenon. From the point of view of his realism, signs for Peirce are

not what limit our knowledge of reality, but are rather the means by which such knowledge is possible, including the knowledge of self. As Peirce notes, “scholastic realism is usually set down as a belief in metaphysical fiction” (5.312). Yet he endeavors to resist and reject such a critique, which typically takes the form of a charge of idealism. “But a realist,” he insists, “is simply one who knows no more recondite reality than that which is represented in a true representation. Since, therefore, the word ‘man’ is true of something, that which ‘man’ means is real. The nominalist,” he argues, “must admit that man is truly applicable to something; but he believes that there is beneath this a thing in itself, an incognizable reality. His is the metaphysical figment” (5.312).

Our status as ourselves (not merely!) signs, is the very ground upon which we may have an experience of a cognizable reality. It is the means by which a world complete without us may, nevertheless, be present to us. As Peirce famously argued, “it is sufficient to say that there is no element of man’s consciousness which has not something corresponding to it in the word; and the reason is obvious.

It is that the word or sign which man uses *is* the man himself. For, as the fact that every thought is a sign, taken in conjunction with the fact that life is a train of thought, proves that man is a sign; so, that every thought is an *external* sign, proves that man is an external sign. That is to say, the man and the external sign are identical, in the same sense in which the words *homo* and *man* are identical. Thus my language is the sum total of myself; for the man is the thought. (5.314)⁸³

Yet this is, at the same time, the basis upon which an individual may also become part of a community, the means by which our own, individual existence, and our own, partial state of knowledge, may produce the very possibility of knowledge. In a famous and widely cited passage, Peirce offers a simple, developmental model of the development of

⁸³ For a full consideration of the question of the self and subjectivity in Peirce, related to other contemporary, specifically Freudian, accounts of the self, see Colapietro, *Peirce’s Approach to the Self: A Semiotic Perspective on Human Subjectivity*.

a self *not* through any process of internal intuition, but rather through the recognition of the possibility of a *discrepancy* between experience and testimony:

A child hears it said that the stove is hot. But it is not, he says; and indeed, that central body is not touching it, and only what that touches is hot or cold. But he touches it, and finds the testimony confirmed in a striking way. Thus, he becomes aware of ignorance, and it is necessary to suppose a *self* in which this ignorance can inhere. So testimony gives the first dawning of self-consciousness. (5.233)

The self that develops is that which can be mistaken about the external world. Reality is necessarily constituted as the source of facts, as a sensuous realm of direct experience, about which, though, our knowledge is always potentially fallible (but upon which we usually tend to rely, rather than, for instance, constantly subjecting ourselves to instructive but painful sensations). As Hookway has remarked with respect to this passage, the self is a notion elaborated externally, as the site at which judgments may occur through a process of deliberation and inference, the engine of which is the possibility of failure and error. “The child,” writes Hookway, “can think about the world and act in it, but it is only when it has to deal with testimony that it requires a concept of the self, in order to contrast what it thinks from what is actually the case” (25). In the process of the development of self, Peirce describes a world which is the source of facts, about which one may, nevertheless, be mistaken. By associating testimony with the realm of facts, explains Peirce, the child “adds to the conception of appearance as the actualization of fact, the conception of it as something *private* and valid only for one body. In short, *error* appears, and it can be explained only by supposing a *self* which is fallible” (5.234).

Yet these are the very grounds – the only grounds that Peirce can imagine – upon which we can ever know anything at all. Error suggests the possibility of something about which someone (some “self”) may be mistaken. Peirce had even conceived of his

philosophical doctrine as based fundamentally upon the principles of mistake, error and limit, which are nevertheless the goads that provoke the search for knowledge in the first place. “I used for myself,” he wrote in 1897, “to collect my ideas under the designation *fallibilism*; and indeed the first step toward *finding out* is to acknowledge that you do not satisfactorily know already [...]” (1.13). It is with such a modest gesture that Peirce presents his philosophical labors, but it is a modesty – a limit or *moderation* – that characterizes all our lives, which, once recognized, must be seen as the source for the development of any knowledge, as it is the source for Peirce’s own pursuits and speculations. “Indeed,” writes Peirce, “out of a contrite fallibilism, combined with a high faith in the reality of knowledge, and an intense desire to find things out, all my philosophy has always seemed to me to grow...” (1.14).

Fallibility and Certainty

In a significant sense, then, Peirce’s own method is exemplary, developed as a manifestation of the basic method which we all inevitably employ as we endeavor to “find things out,” as we undertake to come to know things and to understand the world and reality. In his account of subjectivity, of knowledge, of interpretation, Peirce is concerned to insist upon the limits of our own capacities, but at the same time to avoid the conclusion that such limits mean that we cannot in fact come to know things. Indeed, one of the central essays by Peirce, often cited as describing the core of his thought, is the significantly titled “Some Consequences of Four Incapacities,” one of three essays published in 1868 in the *Journal of Speculative Philosophy*. The four incapacities, with which we are now familiar, are helpfully summarized here by Peirce: “1. We have no

power of introspection, but all knowledge of the internal world is derived by hypothetical reasoning from our knowledge of external facts. 2. We have no power of intuition, but every cognition is determined logically by previous cognitions. 3. We have no power of thinking without signs. 4. We have no conception of the absolutely incognizable” (5.265).⁸⁴ Peirce’s entire project, it may be said, is dedicated to explaining how, given such incapacities, we may come to know something at all of the world that is always inevitably external to us.

Crucial to such an endeavor, however, is an explanation of the specific means by which the world of reality, despite such limits, despite its distance from us, may in fact be present to us, may in fact be cognizable, may be known. Among the most succinct account of such means offered by Peirce is an unpublished review of Josiah Royce’s *The Religious Aspect of Philosophy*,⁸⁵ in which he is forced to defend his position on reality, which had come under attack by Royce. Peirce had insisted that reality consists in

the fact that there is such a thing as a true answer to a question [...] that human inquiries, – human reasoning and observation, – tend toward the settlement of disputes and ultimate agreement in definite conclusions which are independent of the particular stand-points from which the different inquirers may have set out; so that the real is that which any man would believe in, and be ready to act upon, if his investigations were to be pushed sufficiently far. (8.41)

“Upon [...] this opinion,” notes Peirce, “Dr. Royce is extremely severe” (8.41). Royce’s argument against such a position is, as Peirce explains, “drawn from the existence of

⁸⁴ For the entire essay see 5.264ff.

⁸⁵ See Royce, *The Religious Aspect of Philosophy*. As the editors of the *Collected Papers* note, the text of the review is from a manuscript in the Houghton Library, and it is missing the first three pages, and that “there is no explicit statement in the remainder that this is a review of [*The Religious Aspect of Philosophy*], but all of the quotations from the work under review have been located there” (*Collected Papers*, 8.39, Fn. 1, Para. 1/2, p. 39). The fate of the review is also considered by the editors, noting that Peirce wrote to William James, on October 28, 1885, saying that he had written a review of Royce’s book, but that it had been refused by “Youmans.” L. Youmans and W.J. Youmans were, it is noted, the editors of *Popular Scientific Monthly*, where Peirce would have presumably submitted the review. On the basis of the letter and the date of publication of Royce’s book, the editors of the *Collected Papers* date the review as c. 1885 (*Collected Papers*, 8.39, Fn. 1, Para. 2/2, p. 39).

error. Namely, the subject of an erroneous proposition could not be identified with the subject of the corresponding true proposition, except by being completely known, and in that knowledge no error would be possible. The truth must, therefore, be present to the actual consciousness of a living being” (8.41). Against such an intuitionist account of truth and knowledge, Peirce is concerned, as we have seen, to offer a social and communal account of the development of truth, achieved through the determined pursuit of a community of individual inquirers, so that truth is not understood as what may be available to any particular consciousness, but is rather what may ultimately be determined to be the case through observation. This is, though, an effectively ideal future point, which may or may not be achieved.⁸⁶ The more significant issue here, though, is the status of reality as *external* and independent of us, as available, thereby, to observation, cognition, to perception, and capable of being transformed into knowledge.

The source of Royce’s misunderstandings, insists Peirce, is his inheritance of certain specifically Hegelian assumptions.⁸⁷ Hegel, as Peirce suggests, is a nominalist

⁸⁶ There is considerable debate about the status of this “future point,” the point at which the truth of all matters will be finally determined, which need not be considered in any detail here. I will insist, though, for the sake of my argument, that it is a basically *hypothetical* moment for Peirce, which he presumes we will never *actually* reach, but which functions to explain how we can have come to know the things we are sure of, and to suggest the many actual points in the future when we will come to know even further things. Peirce notes that, “upon innumerable questions, we have already reached the final opinion. How do we know that? Do we fancy ourselves infallible? Not at all; but throwing off as probably erroneous a thousandth or even a hundredth of all beliefs established beyond present doubt, there must remain a vast multitude in which the final opinion has been reached. Every directory, guide book, dictionary, history, and work of science is crammed with such facts” (8.43). Such provisional determinations of specific truths are elaborated all the time, every day, and many more are found not to be true, in a steady working out of the difference between truth and falsehood. While an ongoing process, though, it is likely infinite in its duration. “The problem, Peirce explains, “whether a given question will ever get answered or not is not so simple; the number of questions asked is constantly increasing, and the capacity for answering them is also on the increase. If the rate of the latter increase is greater than that of the [former] the probability is unity that any given question will be answered; otherwise the probability is *zero*. Considerations too long to be explained here lead me to think that the former state of things is the actual one. In that case, there is but an infinitesimal proportion of questions which do not get answered, although the multitude of unanswered questions is forever on the increase” (8.43).

⁸⁷ “Dr. Royce has,” Peirce begins, “produced a work which will form a good introduction to Hegel” (8.39).

who nevertheless tended toward a realist position. His incipient realism can be discerned in a quote that Peirce offers. “We must,” Hegel acknowledges, endeavoring to explain the relation between an expression and its content, or between a thought and its substance, “be *in contact* with our subject-matter.” (8.41, fn. 9; emphasis added)⁸⁸ For Peirce, the question of *contact* with the subject-matter of our thoughts, conceptions, representations and expressions, is of vital importance, and it is the central purpose of his investigations and speculations to determine the nature of and to describe that contact. Having pointed to the same crucial issue, Hegel nevertheless fails to acknowledge the importance or primacy of *direct*, sensory contact, distinguishing it instead from a presumably more significant form of contact. Peirce notes the distinction, paraphrasing Hegel, for whom contact is established either “by means of our external senses, *or, what is better*, by our profounder mind and our innermost consciousness” (8.41, fn. 9; emphasis in original). The ostensible hierarchy between sensory experience and a purer, more profound, interior *mental* experience, is, for Peirce, a fundamental mistake, a failure to recognize what is most basic about experience, which is that it has a necessarily *external* source – a fact which does not reduce its importance, but is, on the contrary, the only basis upon which we can possibly come to know at all. “The capital error of Hegel,” he insists, “which permeates his whole system in every part is that he almost altogether ignores the Outward Clash” (8.41, fn. 9).⁸⁹

⁸⁸ No source provided for Hegel.

⁸⁹ Christopher Hookway, in his *Peirce*, offers the same quote from Hegel, but fails to indicate that only the first phrase – “We must be in contact with our subject-matter” – is in quotation marks, while the remainder is only a paraphrase. Nevertheless, Hookway’s Chapter V, “Perception and the Outward Clash,” is a thorough and important account of the centrality of perception and indexicality for Peirce.

The “Outward Clash” is the very basis of Peirce’s philosophy, of his logic and his semeiotic, a centrality that quite radically distinguishes him from Hegel, as Hookway has noted. “While Peirce and Hegel agree that the ‘outward clash’ of the external senses *can* put us in contact with our subject matter, or enable our cognition to ‘mean something real’, Hegel views this as a second-rate sort of contact with reality and aspires to something better. Peirce, on the other hand, holds that this form of secondness is our only means of access to reality. The real world which is the object of our inquiries is, we might say, only *encountered* through perception” (151). Peirce’s category of Secondness – that which “meets us in such facts as another, relation, compulsion, effect, dependence, independence, negation, occurrence, reality, result” (1.358) – is the name of the realm of perceptual experience which is the very *source* of our cognitions – “it is something which is there, and which I cannot think away, but am forced to acknowledge as an object or second besides myself, the subject or number one, *and which forms material for the exercise of my will*” (1.358; emphasis added).⁹⁰ It is, as he suggests here, a question of “will,” the capacity for which is “triggered,” so to speak, by the experience of Secondness, by the “outward Clash.” It is in our willful responses to facts of Secondness that the source of cognition and thought is to be found, despite the common attitude whereby thought and “feeling” are distinguished. As Peirce insists, “the Hegelian school does not sufficiently take into account the volitional element of cognition,” noting,

⁹⁰ It must always be borne in mind, however, that Peirce’s categories are inherently connected. His triadicity is, as he is on many occasions at some pains to insist, irreducible. So: “First and second, agent and patient, yes and no, are categories which enable us roughly to describe the facts of experience, and they satisfy the mind for a very long time. But at last they are found inadequate, and the third is the conception which is then called for. The third is that which bridges over the chasm between the absolute first and last, and brings them into relationship” (1.359).

though, that this is not entirely surprising. “The element of feeling is so prominent in sensations, that we do not observe that something like Will enters into them, too” (8.41).

For Peirce it is vitally important to avoid distinguishing between perception and cognition, which may, even in the case of Hegel, who is willing enough to acknowledge the “outward clash,” but who desires, ultimately, to valorize cognition as an internal phenomenon, lead to an unwarranted elevation of cognition over perception, the latter reduced to the realm of the potentially or even inevitably erroneous. As Hookway has insisted, and as Peirce himself announced, he is a fallibilist, he is sensitive to our capacity to be mistaken, yet is keen neither to subordinate nor to dispense with the centrality of (fallible) perception in the elaboration of judgments and cognitions. At the same time, though, he is interested in demonstrating that we also produce conceptual judgments, theories of the world, which may override perception. As Hookway explains, this is the central difficulty for Peirce’s theory: “Unless we have a principled explanation of when and how theory can be allowed to override experience [...] we are likely to lose track both of a special role for perception in enabling our cognitions to ‘mean something real’ and of the idea of an objective reality whose character is not determined by our psychological constitution” (152). This is precisely what Peirce endeavored to do. His central emphasis on the “outward clash,” which, Hookway notes, increases after about 1900, is “an attempt to forge a link between perception and cognition that can be used as a premise for the argument for pragmatism: it is *because* we encounter reality through perception,” explains Hookway, “that the application of the principle [of pragmatism] will clarify the whole meaning of the term” (153).

Peirce had provided, in what he described as the “pragmatic maxim,” the general principle of signification and meaning: “Consider what effects, that might conceivably have practical bearings, we conceive the object of our conception to have. Then, our conception of these effects is the whole of our conception of the object” (5.402). As Hookway insists, “the pragmatist principle itself indicates that meaning and perceptual experience are related: we clarify the meaning of a general term by describing the *experiential* consequences of acting upon something to which that term applies” (153). This Hookway presents as part of Peirce’s larger project of establishing a fundamental relationship between perception and cognition, the upshot of which is, as Hookway, insists, that “Peirce’s doctrine can be viewed as a thesis about reference” (153). There are, of course, many problems and difficulties to be overcome before the relation between perception and cognition can be fully established, including the risk of circularity, whereby what we perceive is true because we know it to be true by our perceiving it; and, how to account for the means by which we may revise and correct our knowledge on the basis of the selfsame perceptions. As Hookway insists, there is a basic element in Peirce’s account by means of which he is able to contend with and answer such problems: “Central to Peirce’s response to these difficulties is the claim that the fundamental form of reference to existing objects involves the use of demonstrative expressions, *indices*, in perceptual judgments. [...] For Peirce, the theory of perception has at its core a theory of reference” (154). What Peirce required was the means of describing the specific nature of our contact with, or our connection to, an external reality, a connection that is at once perceptive and cognitive. Hookway states the problem that Peirce faced in admirably clear terms:

Through perception we acquire information about our environment, and the judgments we form are occasioned by a sensory contact with their objects. A theory of perception has to explain the connection between these two elements – the sensory confrontation and the conceptual interpretation of what is seen – in a way that is phenomenologically plausible and yet provides suitable foundations for an explanation of how knowledge is possible. (155)

Hookway argues convincingly that the solution for Peirce lay in resisting a simplistically dichotomous account of perception, whereby we produce cognitions in order to make sense of the things we perceive. He offers instead a rich description of the irreducible triadicity of our perceptual experience of reality, according to his categories of Firstness, Secondness and Thirdness. Distinguishing what he is endeavoring to describe from the traditional notion of a simple sense impression, which is often posited as an impression of an object which is irretrievably distant from us, Peirce offers instead the notion of the “percept.” Rejecting such notions as that “each of us is like the operator at a central telephone office, shut out from the external world, of which he is informed only by sense-impressions,” Peirce says: “Not at all! [...] It is,” he insists, “the external world that we directly observe. What passes within we only know as it is mirrored in external objects. In a certain sense,” he admits, “there is such a thing as introspection; but it consists in an interpretation of phenomena presenting themselves as external percepts” (8.114). The percept, what Peirce defines as “a purely psychical product,” is no less real and external in being so, “like everything of which I can take any sort of cognizance” (8.114). Interpretation is, as he insists, that introspective consideration of external realities as presented to our consciousness as “external percepts.” These are the basic material of our thinking, our cognition, and our communications. “Our logically initial data,” explains Peirce, “are percepts” (8.114). Derived from sensory experience, though, they take the form in which they are available to us for interpretation, for cognition, and

in this respect they can only be conceived in triadic terms, according to an irreducible triadicity, premised upon Peirce's fundamental phenomenological categories. "Those percepts," he explains, "are undoubtedly purely psychological, altogether of the nature of thought. They involve three kinds of psychological elements, their qualities of feeling, their reaction against my will, and their generalizing or associating element. But," he adds significantly, "all that we find out afterward" (8.114). The process of perception and cognition is an ongoing and dynamic one, consisting of the elaboration of percepts, which function together to produce a constantly developing picture of an inevitably multifaceted reality, which can seem distant and resistant, but which comes to be known as something both perceived and conceived. In order to make this clear, he offers an example, which is worth quoting at length:

I see an inkstand on the table: that is a percept. Moving my head, I get a different percept of the inkstand. It coalesces with the other. What I call the inkstand is a generalized percept, a quasi-inference from percepts, perhaps I might say a composite-photograph of percepts. In this psychological product is involved an element of resistance to me, which I am obscurely conscious of from the first. Subsequently, when I accept the hypothesis of an inward subject for my thoughts, I yield to that consciousness of resistance and admit the inkstand to the standing of an external object. Still later, I may call this in question. But as soon as I do that, I find that the inkstand appears there in spite of me. If I turn away my eyes, other witnesses will tell me that it still remains. If we all leave the room and dismiss the matter from our thoughts, still a photographic camera would show the inkstand still there, with the same roundness, polish and transparency, and with the same opaque liquid within. Thus, or otherwise, I confirm myself in the opinion that its characters are what they are, and persist at every opportunity in revealing themselves, regardless of what you, or I, or any man, or generation of men, may think that they are. That conclusion to which I find myself driven, struggle against it as I may, I briefly express by saying that the inkstand is a real thing. Of course, in being real and external, it does not in the least cease to be a purely psychological product, a generalized percept, like everything of which I can take any sort of cognizance. (8.114)

Our engagement with the world, with external reality, is an ongoing one, consisting of multiple perceptions, or, more precisely, in the development of multiple percepts, each of which provides the "logically initial data," upon which we may produce our conceptions of the world. We are though, not entirely free to produce whatever

conceptions we wish, but are constrained by the “outward clash,” by the resistant and persistent nature of reality, which is both external to us and independent of us. Nor may we be entirely sure of what we perceive, or of its entire extent. We are constrained by our limits as individuals, and we inevitably sense an estrangement from reality, which seems always to present a new facet of itself, undermining the reliability of prior perceptions of other facets. Yet there is a persistence that characterizes the objects of an external reality, and it is this persistence, which accommodates all our subsequent investigations and inquiries, and allows for the production of ever more percepts, which are the basis of our ideas and conceptions of reality, and which we finally accept, for lack of any better way of putting it, as “reality.” Reality, then, is not that which is immediately available to us, nor is it “absolutely incognizable,” but is rather a middle thing, a concept we have elaborated in order to account for the stubborn persistence of the objects from our perception of which we generate series of percepts, which function as the mediate material for our thoughts and cognitions.

Reality is at once the only possible source of our thoughts and conceptions, while at the same time it is what is beyond and outside of us, the full extent of which is (likely) unknowable, except in the hypothetically absolute long-run of human inquiry. Yet many facets of reality may be collected, producing knowledge that is coherent and complete enough for one to make some practical use of it, so that, according to the pragmatist principle, our conception of an object is determined according to our practical bearing towards it. Never complete, never ultimate, knowledge is, still, obtainable and usable. The conditions of our use of knowledge, however, are constantly changing, and we are in an effectively constant state of confirming and reestablishing, through a variety of means

and to various extents, our understanding and conceptions of reality, about which we may as well be wrong as right. As Peirce describes in the example of the inkstand, whatever doubts we may entertain about its existence may be assuaged by means of various investigations, by the collection of testimony, corroborative evidence, by the taking of photographs, and so on – none of which, in themselves, is ultimate proof, but each of which, alone or, better, in some combination, provide a potentially adequate and usable proof of the “reality” of the inkstand. Such “reality,” though, consists in a dawning awareness of the inkstand’s independence, that the various qualities of the inkstand that one may be able to discern are part of the potentially infinite qualities that it *really* possesses. In its *really* possessing them, however, *what* we think of the inkstand – our percepts of the inkstand – depends ultimately upon the fact that the inkstand is so regardless of what we may think of it, “that its characters are what they are, and persist at every opportunity in revealing themselves, regardless of what you, or I, or any man, or generation of men, may think that they are.”

We may, at first, think that the inkpot is merely a figment, an hallucination (always remembering that figments and hallucinations, too, are “real,” that they are really imagined or really hallucinated), but its being really an inkstand may be ascertained through further consideration and inquiry, the very possibility of which is the result of its external independence. That we may be mistaken about something, and that we may then correct our mistake, means that there *is* something to which our percepts, and our subsequent conceptions and representations, *refer*. Confronted by two statements, such as “A is B,” and “A is not B,” as Hookway explains, we are faced with two possibilities. “Either,” he explains, “the second assertion *corrects* the first, or the general description is

true of more than one thing, and the things of which it is true include both things which are B and things which are not B” (169). In order not to have to accept the relativity of the second possibility, and in order to establish some pragmatically effective *certainty*, we must be able to ascertain whether the second statement is indeed a correction of the first or not. “Peirce’s claim,” argues Hookway, “seems to be that unless reference has an indexical component, we could never be justified in endorsing the first of these alternatives and recognizing that an error was made” (169).

We may see, now, both the indispensability and the utter necessity of the index in any instance of signification. Indexicality, indeed, is that component of any sign that is the result of reality’s independence and externality. An index, we may recall, is, according to one definition, “a representamen which fulfills the function of a representamen by virtue of a character which it could not have if the object did not exist, but which it will continue to have just the same whether it be interpreted as a representamen or not” (5.73). Here we have an expression of both externality and independence, which are the hallmarks not only of such objects that have traditionally been understood as “indexical” – footprints, fingerprints, photographs, and so on – but of reality itself, with which we must have some contact, some connection, in order to be able to have any thoughts at all. Peirce, on many occasions, insists upon the indispensability of the index in any instance of signification or semiosis. “No matter of fact,” he argues, “can be stated without the use of some sign serving as an index” (2.305). Peirce makes this even more explicit. Describing the symbol, which structuralist semiologists typically equate with the abstract, conventional, *arbitrary* sign as described by Saussure, Peirce insists that it must also incorporate both indexical and iconic aspects.

“A symbol,” explains Peirce, “is a law, or regularity of the indefinite future” (2.293). A symbol, that is, is a generalization, upon which we may rely when we encounter further instance of something in the future. On the basis, though, of his realism, Peirce elaborates upon the usual notion of a symbol, or general. “But a law,” he insists, “necessarily governs, or ‘is embodied in’ individuals, and prescribes some of their qualities. Consequently, a constituent of a Symbol may be an Index, and a constituent may be an Icon” (2.293). Peirce elaborates further with an example:

A man walking with a child points his arm up into the air and says, “There is a balloon.” The pointing arm is an essential part of the symbol without which the latter would convey no information. But if the child asks, “What is a balloon,” and the man replies, “It is something like a great big soap bubble,” he makes the image a part of the symbol. Thus, while the complete object of a symbol, that is to say, its meaning, is of the nature of a law, it must denote an individual, and must *signify* a character. (2.293)

An index, though, it is important to stress, is not any particular thing such as a pointing arm or a footprint in the sand. It is, rather, an indispensable semiotic function, without which we may not produce any conceptions whatsoever. Indexicality is, with the icon and the symbol, one element, as we have already seen, of the irreducibly triadic sign. All signs, even the simplest, necessarily partake of each of the elements. “It is impossible,” insists Peirce, “to find a proposition [that is, a sign] so simple as not to have reference to two [other] signs. Take, for instance, ‘it rains.’ Here the icon is the mental composite photograph of all the rainy days the thinker has experienced. The index, is all whereby he distinguishes that day, as it is placed in his experience. The symbol is the mental act whereby [he] stamps *that* day as rainy...” (2.438). Each of these elements is, of course, amenable to description, and can, through analysis be isolated. So, Peirce may say that “[i]ndices may be distinguished from other signs, or representations, by three characteristic marks: first, that they have no significant resemblance to their objects;

second, that they refer to individuals, single units, single collections of units, or single continua; third, that they direct the attention to their objects by blind compulsion” (2.306). What Peirce is effectively describing is the nature of our relation to reality in so far as we endeavor to elaborate a conception of it – the compulsion and persistence of reality, its singularity, and our perception of it. Indexicality is that component in the production of percepts that derives from the specific character of reality and our association with it. “Psychologically,” he says, “the action of indices depends upon association by contiguity, and not upon association by resemblance or upon intellectual operations” (2.306), these latter describing the actions of icons and symbols. All, though, function together. None of these can be imagined as operating separately, as Peirce insists, noting that “it would be difficult, if not impossible, to instance an absolutely pure index, or to find any sign absolutely devoid of the indexical quality” (2.306). Indeed, any examples of either an icon, an index or a symbol, that Peirce offers, can also be shown to possess each of the other qualities, so that we may conclude that we might perhaps be able to imagine such a possibility, it is likely more than merely difficult. From everything that Peirce says it would seem, in fact, to be an impossibility.

What is important to stress here is the indispensability of each of these in the semiotic processes that we have been considering, especially those that have been the target of semiological critique, those that have, as Eco has insisted, been denied the status of sign, those two elements of the trichotomy that Eco insisted was untenable, precisely because they “postulate the presence of the referent as a discriminate parameter” (*Theory of Semiotics* 178). As we have seen, though, semiosis is impossible to imagine *without* some means of reference. Eco’s mistake is to think of reference in simplistically dyadic

or dichotomous terms, as the “natural” sort of reference he sees in the resemblance between a picture and what it represents, between a foot and the footprint it leaves in the sand. Yet for Peirce reference is a considerably more subtle and complex phenomenon, and is the mode of connection by means of which we establish a relation between our representations and reality. Peirce had already explicitly countered objections such as Eco’s, in his expansive notion of reference, which is derived from his determined realism. The index, in particular, needs to be shown as that part of any sign that instantiates the inevitable fact of reference, no matter the specific nature of the referent. Peirce offers a common instance of “indexicality,” which Eco also considers, yet he comes to strikingly different conclusions. “If A says to B, ‘There is a fire,’ B will ask, ‘Where?’ Thereupon A is forced to resort to an index, even if he only means somewhere in the real universe, past and future. Otherwise,” Peirce explains, “he has only said that there is such an idea as fire, which would give no information, since unless it were known already, the word fire would be unintelligible” (2.305). Peirce then offers a series of examples of the myriad indices that are at A’s disposal, only a very few of which he considers:

If A points his finger to the fire, his finger is dynamically connected with the fire, as much as if a self-acting fire-alarm had directly turned it in that direction; while it also forces the eyes of B to turn that way, his attention to be riveted upon it, and his understanding to recognize that his question is answered. If A's reply is, "Within a thousand yards of here," the word "here" is an index; for it has precisely the same force as if he had pointed energetically to the ground between him and B. Moreover, the word "yard," though it stands for an object of a general class, is indirectly indexical, since the yard-sticks themselves are signs of the Parliamentary Standard, and that, not because they have similar qualities, for all the pertinent properties of a small bar are, as far as we can perceive, the same as those of a large one, but because each of them has been, actually or virtually, carried to the prototype and subjected to certain dynamical operations, while the associational compulsion calls up in our minds, when we see one of them, various experiences, and brings us to regard them as related to something fixed in length, though we may not have reflected that that standard is a material bar. (2.305)

What is important to note here is that even in the first statement, although this is obscured somewhat by Peirce’s need to explain the *informative* function of the index, there is an

inevitably indexical function, even in as simple a proposition as, “There is a fire,” and even if there is no real fire. As Peirce insists, immediately following his examples: “The above considerations might lead the reader to suppose that indices have exclusive reference to objects of experience, and that there would be no use for them in,” for instance, “pure mathematics, dealing, as it does, with ideal creations, without regard to whether they are anywhere realized or not” (2.305). This, of course, is not the case, as

Peirce explains:

But the imaginary constructions of the mathematician, and even dreams, so far approximate to reality as to have a certain degree of fixity, in consequence of which they can be recognized and identified as individuals. In short, there is a degenerate form of observation which is directed to the creations of our own minds--using the word observation in its full sense as implying some degree of fixity and quasi-reality in the object to which it endeavors to conform. Accordingly, we find that indices are absolutely indispensable in mathematics; and until this truth was comprehended, all efforts to reduce to rule the logic of triadic and higher relations failed; while as soon as it was once grasped the problem was solved. (2.305)⁹¹

Peirce then considers specific examples, insisting that the “ordinary letters of algebra that present no peculiarities are indices,” and that “the letters A, B, C, etc., attached to a geometrical figure” (2.305), are also indices. Such examples could be multiplied indefinitely, to include all realms of human endeavor: “Lawyers and others who have to state a complicated affair with precision have recourse to letters to distinguish individuals. Letters so used are merely improved relative pronouns” (2.305). This leads to further examples, describing the expansive and indispensable quality of indexicality. “Thus,” he continues, “while demonstrative and personal pronouns are, as ordinarily used, ‘genuine indices,’ relative pronouns are ‘degenerate indices’; for though they may, accidentally and indirectly, refer to existing things, they directly refer, and

⁹¹ His use of the term “degenerate,” of course, is not meant in the usual disparaging sense, but rather in the logical sense.

need only refer, to the images in the mind which previous words have created” (2.305).

Such expansiveness is given expression earlier by Peirce, when he describes the index as:

A sign, or representation, which refers to its object not so much because of any similarity or analogy with it, nor because it is associated with general characters which that object happens to possess, as because it is in dynamical (including spatial) connection both with the individual object, on the one hand, and with the senses or memory of the person for whom it serves as a sign, on the other hand. (2.305)

We may now return to Peirce’s definition of the index, which we have already considered at various points in this thesis, and which may now be considered in its full significance, in relation, that is, to his account of reality, with which we must have some sort of contact or connection. “An *index*,” for Peirce, as we have seen, “represents an object by virtue of its connection with it” (8.368, n.23). This is followed, though by the proviso, the full significance of which we may now acknowledge: “It makes no difference whether the connection is natural, or artificial, or merely mental” (8.368, n.23). Connection, then, represented in the form of the index, is the representation of the fundamental contact with which all thought begins, and which continues in all subsequent trains of thought, when the connection is that between new signs and already elaborated signs – senses, memories, etc. – which had themselves been effected by previous contacts.

In his exhaustive and far-reaching deliberations on the nature of thought, of knowledge and representation, of truth and falsehood, reality and illusion, Peirce is describing the ongoing, potentially infinite perceptual exploration of external reality, which produces transitory percepts, which develop into a chain of percepts, the dynamic aspect of which he is concerned to capture. On at least two occasions he chooses a compelling metaphor to describe the process of thought – the ongoing, serial process, that is, of producing *percepts*, the basic data of thought, those psychical or mental

representations which, nevertheless, find their origins in the “outward clash,” in our perceptual experiences. As Hookway notes, Peirce offers a definition of the percept in 1903 as “an image or moving picture or other exhibition” (5.115; Qtd. in Hookway 156). Two years later he refines this definition, arguing that “a percept is much like a moving picture accompanied with sounds and other sensations.”⁹² On this suggestive note, and following a somewhat lengthy but necessary excursus on the nature of signs, meaning and reality, we may now return to the question of the cinema, to the crisis understood to be facing the cinema, and to the value of Peirce’s semeiotic, and particularly his notion of indexicality, through which the issues of reference in the cinema, both digital and non-digital, may be reconsidered.

⁹² Peirce, unpublished manuscript, R939, 1905. Qtd. in Hookway 156. Hookway notes that these manuscripts are currently being incorporated into the more comprehensive, multi-volume *Writings of Charles S. Peirce: A Chronological Edition*, edited by Fisch et al. Hookway, though, uses the standard citation style to refer to the manuscripts, following Robin, *Annotated Catalogue of the Papers of Charles S. Peirce*.

Conclusion

This much, however, is indisputable: if there are really any such necessary characteristics of mathematical hypotheses as I have just declared in advance that we shall find that there [are], this necessity must spring from some truth so broad as to hold not only for the universe we know but for every world that poet could create. And this truth like every truth must come to us by the way of experience. No apriorist ever denied that. The first matters which it is pertinent to examine are the most universal categories of elements of all experience, natural or poetical.

Charles Peirce (1.417)

The “Death” of the Cinema

Why has digitization produced such a passionate and voluminous response? Why has the latest technological developments in the cinema produced such concern, such alarm and anxiety? I have suggested that, in the first instance, the changes to the cinema have seemed to make it conform to already existing theoretical models, informed by a structuralist semiology, and that this has been noted with a certain satisfaction and even relief. The cinema seems, that is, to have finally become explicable. At the same time, however, as the cinema has been shown to have been reduced to an apparently comprehensive conventionality, to be nothing more, now, than a technique for producing wholly illusory simulations, the cinema’s powerful *inexplicability* seems to have been lost, its mystery and its power, which had been understood to reside in and derive from its “photographic” constitution. With digitization, its constitution seems to have been altered, and it has become nothing more than the purveyor of cheap effects and tricks. The cinema, though, has always relied on tricks, illusions, and effects, it has always seemed to overcome and exceed its “photographic” origins. The “truth value” of the cinema has always been in question. There is, though, as we have seen, a sense that new

technologies are impairing or even destroying what had distinguished the cinema, and that it has, as Susan Sontag has suggested, moved into a period of decline and decadence.

For Sontag, the cinema, the most recent of the arts, seemed also to be a kind of historical culmination, a compendium and transcendence of all those arts that had come before it. It was a catalogue of aesthetic qualities, some antithetical: “quintessentially modern; distinctively accessible; poetic and mysterious and erotic and moral – all at the same time” (12). In its exhaustiveness, in its bringing together elements that had been kept separate and distinct in the traditional arts, the cinema was capable of producing a new experience, one that derived from its unique kind of plenitude, the plenitude of life itself, of reality, and which in turn provoked such feelings of intense love. “For cinephiles,” she writes, “the movies encapsulated everything” (12). The experience of the cinema was like the very experience of life itself. In its total encapsulation the cinema straddled that line that had always existed between the real and the artificial, between life and art, between truth and fiction. Cinema seemed at once an artful rendering of life, and more lifelike than any art. “Cinema was both the book of art and the book of life,” Sontag writes (12). The cinema brought together those two realms that had been for so long kept apart, those that had been thought to be fundamentally distinct. And the moment of this conjoining, what might have been only a mythical moment in the history of any other art, whose origins are lost in time, is well documented, historically visible, having occurred, relatively speaking, such a short time ago:

In roughly the year 1895, two kinds of film were made, two modes of what cinema could be seemed to emerge: cinema as the transcription of real unstaged life (the Lumière brothers) and cinema as invention, artifice, illusion, fantasy (Méliès). But this is not a true opposition. The whole point is that, for those first audiences, the very transcription of the most banal reality – the Lumière brothers filming “The Arrival of a Train at La Ciotat Station” – was a fantastic experience. Cinema began in wonder, the wonder that reality

can be transcribed with such immediacy All of cinema is an attempt to perpetuate and to reinvent that sense of wonder. (13).

In its melding of so many otherwise incommensurate aesthetic qualities, and in its melding of the *most* incommensurate qualities of the real and the fantastic, the cinema, in Sontag's analysis, provided an unparalleled experience for audiences. But it was one that was specific to the unique context of the movie theatre, and which derived from the projection of *filmic* images, which allowed for the full cinematic experience, for the sort of absorption that only the projected, animated, photographic image, in the great dark hall, could provide – the reproduction of the dynamic of reality itself. It is the experience that was realized spontaneously and immediately, which sprung fully formed at the very moment of the cinema's emergence, and which the cinema undertook, over the course of its life, to recreate again and again. "Everything in cinema begins," argues Sontag, "with that moment, 100 years ago, when the train pulled into the station. People took movies into themselves, just as the public cried out with excitement, actually ducked, as the train seemed to move towards them" (12). The cinema, for Sontag, then, is a lived experience, a bodily and sensual experience, one powerfully linked, thereby, to the primary sensory experience of the real world. The cinema is the art that had come the closest to reproducing, with an astonishing degree of fidelity, the real world. This is the source of its wonder.

But the cinema seems, to Sontag, to have been unable to maintain this original sense of wonder, as it has succumbed to various other demands – economic, industrial, ideological – and as it has been diluted by the specific *technological* transformations and encrustations that have accompanied these demands. The cinematic experience, the experience of transgressing the boundary between the real and the fantastic, of being

“overwhelmed by the physical presence of the image,” the “experience of surrender to, of being transported by, what was on the screen,” the desire to be “kidnapped by the movie” (13), is precisely what the technological transformations, especially those of recent years, have radically and perhaps fatally erased. In the place of the cinema’s original, organic unity, there is now an artificial, empty dispersal of imagery.

The reduction of cinema to assaultive images, and the unprincipled manipulation of images (faster and faster cutting) to make them more attention-grabbing, has produced a disincarnated, lightweight cinema that doesn’t demand anyone’s full attention. Images now appear in any size and on a variety of surfaces: on a screen in a theater, on disco walls and on megascreens hanging above sports arenas. The sheer ubiquity of moving images has steadily undermined the standards people once had both for cinema as art and for cinema as popular entertainment. (13).

Sontag’s elegy for the cinema could simply be dismissed, perhaps, as peculiarly romantic and rather naïve. Certainly it seems out of step with the main currents of film theory, as it has been elaborated over the last thirty years or so, and which has undertaken to demolish any simplistic equations between cinema and reality, which is precisely what Sontag’s argument seems to depend upon. Yet, in the recent academic, theoretical discourse on film, as we have seen, one cannot avoid similar plaintive cries, similar mournful announcements of the death of cinema, which see as the fatal blow the severing of the link between the film image and the real world, a blow delivered by recent technological advances. The “death of cinema” has become a ubiquitous phrase within film studies, as theorists have endeavored to describe and explain the consequences of what feels like profound technological change. What is implied in Sontag’s argument, what is only ever really hinted at in her analysis, namely the transformation of the very nature of the cinematic image, its photographic, indexical quality, by recent technologies, has become the central issue in film theory. In her complaints about the “unprincipled manipulation” and the “sheer ubiquity” of images, and in her analysis of the

impoverishment of the image as it moves from the movie screen to the more attenuated space of the television, and to other non-cinematic screen spaces, Sontag is describing the transition that many argue is underway, a transition from a regime of mechanical, analogical, *reproduction* or transcription, to what is generally understood, and even more generally decried, as electronic, or digital, *simulation* or invention. The cinema is no longer, as Sontag says, a “transcription of reality.” Beginning with the introduction of television, and then the video cassette recorder, cable and satellite television, and so on, and concluding with the computerization of images, with the complete digitization of the image, we seem to have come to the end of an era. We are, it appears, at the moment when one kind of image, which possessed some fundamental relation with the real world, the sort of image that had imbued the cinema with the kind of power that Sontag mourns the loss of, is being replaced by another kind of image, which seems radically severed and distant from the world, and whose reality is only a “virtual” reality.

In a more elaborate analysis of the sort of experience that Sontag describes, Vivian Sobchack insists that “the intelligibility and meaning of the film originates in the embodied experience of perception, in the empirically concrete (as well as transcendent) ‘address of the eye’” (*Address* 300). By the “address of the eye” Sobchack means the phenomenological experience of film viewing, the act of vision “that occurs from somewhere in particular; its requisites are,” she says, “both a *body* and a *world*.”

Thus, *address*, as noun and verb, both denotes a location where one resides and the activity of transcending the body’s location, originating from it to exceed beyond it as a projection bent on spanning the worldly space between one body-subject and another.
(25)

Sobchack’s is a complex and detailed phenomenological account of the cinematic experience, which posits a basic homology between viewing the world and viewing the

cinema, both of which depend upon the sort of *intentionality* that Sobchack describes, on, that is, the necessity of both a perceiving consciousness and something (or some other) that such a perceiver can be conscious of. The “address of the eye” in the film experience, explains Sobchack, “names a *transitive relationship* between two or more objective body-subjects, each materially embodied and distinctly situated, yet each mutually enworlded” (25). Sobchack is concerned, that is, to describe the cinematic experience, “as located in the lived-body” (300), as profoundly related to, and indebted to our primary, phenomenological experience of the world.

There is a basic similarity between Sontag’s intuitive analysis of the cinematic experience, which insists upon the concrete, empirical context of film viewing, and Sobchack’s analysis, which carefully describes such context in full phenomenological detail. There is, in addition to this similarity, a comparable sense of melancholy in Sobchack, who sees, like Sontag, the potential loss of precisely those aspects of the cinematic experience that had been more or less guaranteed by the particular nature of the film image, and which are put in jeopardy by the incursions of electronic and digital technologies. As Sobchack argues, “at this historical moment in our particular society and culture (most often called postmodern, but more empirically described as electronic), the lived-body is in crisis” (300). This crisis, she continues, “has emerged coincidentally with our present culture’s pervasive entailment of electronic mediation and simulation, and correlatively with what has been called a ‘crisis of the real’” (300).

Sobchack makes an explicit link between the increasingly prevalent electronic media, which, against a cinematic experience that effectively recapitulated and thereby buttressed our phenomenological “lived body,” instead puts all phenomenological

certainties in jeopardy, and initiates a general epistemological and ontological crisis. What had once been guaranteed, or at least secured, by the specific (photographic) technology of the cinema, namely a sense of being situated in some way that recalled the primary phenomenological character of our lived experience, seems to have evaporated with the advent of new electronic and digital technologies. “Postcinematic, incorporating cinema into its own techno-logic,” explains Sobchack, “our electronic culture has disenfranchised the human body and constructed a new sense of existential ‘presence’” (300). What has occurred, according to Sobchack, is a sort of de-coupling, as the image has become split from the world it purports to represent, thereby separating the viewer from the world, and even from the world-as-representation, which is what had been offered by the photograph, substituting instead a wholly discrete and discontinuous simulation of the world, which has no anchors to the real and can therefore provide no guarantees. Sobchack explicitly makes the link between technological change and epistemological and ontological disruption, charting the process as we move from a photographic era to an electronic one:

Thus, electronic “presence” as it is experienced by the spectator/user is at one further remove from previous referential connections made between the body’s signification and the world’s concrete forms. Electronic “presence” neither asserts an objective possession of the world and the self (as does the photographic) nor a centered and subjective spatiotemporal engagement with the world and others accumulated and projected as conscious and embodied experience (like the cinematic). Digital and schematic, abstracted from *reproducing* the empirical objectivity of “nature” that informs the photographic and from *presenting a representation* of individual embodied subjectivity that informs the cinematic, the electronic constructs and refers to a “virtual reality” – a meta-world in which ethical investment and value are located neither in concrete things nor in human lived bodies but in *representation-in-itself*. (301)

Despite the complexity of Sobchack’s language, and the phenomenological and philosophical assumptions that underlie it, her point is a relatively straightforward one. The photograph, which is the basic material of the cinema, possessed a direct, referential

link with the real world, with “nature” (even if in scare-quotes), and its representations, as a result, differs radically from the constructed nature of electronic imagery. Rendered thus, her argument seems to correspond with a common-sense understanding of the photograph, which sees it as having been generated according to a relatively objective and automatic procedure, which, in somewhat less phenomenological language, seemed to confer on it some degree of fidelity and faithfulness – as Sobchack says, a more or less direct referentiality. A photograph was *of* something, it referred *to* something. It was a source of some sort of truth about things, a truth derived from its natural, motivated, that is to say, its *analogical* relation to the things it represented. This is precisely what Sobchack now sees to be in jeopardy, as the analogical phenomenon of the photograph confronts its putative opposite: “Digital electronic technologies atomize and *abstractly schematize* the analogic quality of the photographic and cinematic into discrete pixels and bits of information that are transmitted serially, each bit discontinuous, discontiguous, and absolute – each bit ‘being in itself’ even as it is part of a system” (301). The fear is that the cinema’s images are no longer images *of* anything, and that the last vestiges of any contact that we may have had with reality, made available by the curious exception of the cinema, have been scrapped. With the supposed “death” of the cinema we are witnessing the passing of any direct contact with the real, and the “lived body,” the individual, seems to have been denied the means of relating to anything other than unmoored and disconnected images. We seem, suddenly, to be alone, cut off from a larger realm of knowledge and experience with which we had once had contact.

The Cinema and World

“The question,” wrote Peirce, “whether the *genus homo* has any existence except as individuals, is the question whether there is anything of any more dignity, worth, and importance than individual happiness, individual aspirations, and individual life” (8.38). Behind Peirce’s various philosophical and semiotic endeavors is the fundamental question of community, the basis of which may be established only upon the possibility of an external, independent reality, to which each of us may refer and represent as we are engaged in the larger social, communal enterprise of the accumulation of knowledge, of “finding out.” This is the very basis of his definition of the real, which is, he insists, “that which, sooner or later, information and reasoning would finally result in” (5.311), as a community of inquirers undertakes its efforts. “Thus,” he concludes, “the very origin of the conception of reality shows that this conception involves the notion of an unlimited COMMUNITY, without definite limits and capable of a definite increase of knowledge” (5.311). Elsewhere, Peirce considers the most significant conundrum to face the human being, namely the finite nature of our existence, our mortality, which seems to be the most basic limit placed upon us as we endeavor to find anything out, especially by means of the traditional techniques of logic, reasoning, inference and probability, which seem to require a certain perhaps infinite period of time over which our inferences and hypotheses may be tested and confirmed, a period that obviously exceeds our own lifetimes. As Peirce writes, “death makes the number of our risks, of our inferences, finite, and so makes their mean result uncertain. The very idea of probability and of reasoning,” he admits, “rests on the assumption that this number is indefinitely great” (2.654). This produces a significant difficulty, “and I can,” he says, “see but one solution of it.

It seems to me that we are driven to this, that logicity inexorably requires that our interests shall *not* be limited. They must not stop at our own fate but must embrace the whole community. This community, again, must not be limited, but must extend to all races of beings with whom we can come into immediate or mediate intellectual relation. It must reach, however vaguely, beyond this geological epoch, beyond all bounds. He who would not sacrifice his own soul to save the whole world, is, as it seems to me, illogical in all his inferences, collectively. Logic is rooted in the social principle. (2.654)

Such a position requires that there be something about which we may, in the long run, as a community, in fact be able to come to know, that there is something independent of us, the reality of which is slowly being revealed, and which we can intuit, even as finite individuals. We feel the press of reality upon us, a sense of reality that originates in our perceptions of the world, in the realm of feeling and experience. “The reality of things,” Peirce explains,

consists in their persistent forcing themselves upon our recognition. If a thing has no persistence, it is a mere dream. Reality, then, is persistence, is regularity. In the original chaos, where there was no regularity, there was no existence. It was all a confused dream. This we may suppose was in the infinitely distant past. But as things are getting more regular, more persistent, they are getting less dreamy and more real. (1.175)

The sense among film and media theorists is just the opposite, that things are becoming considerably less real, and disturbingly more dreamy, and that any anchors that we may have had are being pulled away, as the very constitution of those images that had seemed to provide some proof of reality, of its independence and its existence, appears to have been radically altered. Yet their fears are grounded, first of all, in a mistaken belief that a merely technological change, such as the addition of digital technologies to the cinematic apparatus, can have a direct and deforming effect on basic epistemological and ontological categories, and can in turn undermine our experiences of truth and reality. This may be so only if the concepts of the true and the real are confused with physical existents, rather than understood in the contingent and subtle terms offered by Peirce, and if indexicality is construed as something that can in fact be destroyed, which goes against

everything that Peirce had argued. “An index,” he said, quite simply, “represents an object by virtue of its connection with it” (8.36, n.23). Yet in that simple word, “connection,” he meant so much, and dedicated his life to discovering what it meant for our thoughts, our signs, our representations, to be “connected” to something, to be the vehicles to something beyond ourselves, beyond our individual existences, the means for escaping the solipsistic prison to which Cubitt imagines we have finally been condemned.

Yet the grounds for such a radical conclusion need to be much more carefully considered, and the claims for the loss of indexicality, or reference, of the means for connection, need to be seriously redressed. Peirce offered a more specific account of the index, suggesting a distinction between what he called “designations” and “reagents,” a distinction he seems not to have employed again, but which may shed some light on the problem of digitization, and the altered constitution of the photographic and cinematographic image. Reagents, he says, are the simple effects of a force or influence, as when “water placed in a vessel with shaving of camphor thrown upon it will show whether the vessel is clean or not” (8.36, n.23). We may include the example of light leaving an impression upon the emulsified surface of a filmstrip, which provides us with some insight into the nature of light and the chemical emulsion. By designations Peirce means, for example, “personal, demonstrative, and relative pronouns, proper names, the letters attached to a geometrical figure, and the ordinary letters of algebra” (8.36, n.23) – all of which, though, refer us to some significant aspect of reality. “Designations,” the very capacity to refer, to indicate, “are absolutely indispensable both to communication and to thought” (8.36, n.23).

Communication and thought remain as possibilities in the digital age, obviously, but what is required are the means for explaining the *basis* of thought, the *basis* of communication, which Peirce convincingly shows lies in our capacity for reference, or designation, in our use of signs that place us in contact with an external, independent reality, and on the basis of which we may participate in the larger social drama of the search for knowledge. The anxiety evinced in almost all accounts of the digital cinema betrays the fact that most theorists who had ever found anything important in the cinema understood that that importance derived largely from the cinema's peculiar capacity to reenact that drama, and the sense among theorists is that that drama has come to an end. This news is greeted, for the most part, with sadness and regret, tinged only with an ironically triumphant acknowledgement that, at least, the cinema finally accords with the account that had been so doggedly offered.

What now for film studies, for film theory? Lauren Rabinovitz, introducing a special issue of the film journal *iris*, dedicated to the question of "Film Theory and the Digital Image," offers a concise account of what she calls "the digital realm": "In recent popular manifestations like e-mail systems, multimedia CD-ROM texts, the World Wide Web, and virtual reality, the domain of the digital seems to promise a newly outfitted world of memory, one whose referent is an increasingly synthetic and virtual world. The result is new relationships among consciousness, body and memory" (4). Rabinovitz suggests the potentially epochal character of the new media, which she argues may well be ushering in a new era in the history of human thought and consciousness. "Cyber culture," she speculates, "may well be the last stage in liberal humanism, already wounded by postmodernism" (4).

Rabinovitz is concerned to show that “film theory and cinema studies hold a privileged place and special point of view for analyzing and understanding the digital image and digital culture” (3). Yet she immediately raises a number of difficult and troubling questions that put such assurance in doubt. “But what exactly is the role of film theory,” she asks, “for addressing the digital image and digital culture?”(3). Film theory seems, at first glance, to be unprepared and ill-equipped for the sorts of fundamental issues that are being raised by digital technologies, focused as it has been on the social, the cultural, that is to say, the *conventional*, aspects of the cinema. Rabinovitz suggests the specific inadequacies of contemporary film theory in her subsequent questions. “Can film theory’s power of explanation for audio-visual language and texts, aesthetics and art objects, and the social politics of communication and culture adroitly address this phenomenon? Is film theory up to the challenge of this unique radical transformation? Is it adaptable? Does it provide a paradigm of intellectual expansiveness or rather one of containment for thinking about things digital?” (3-4).

Rabinovitz’s answers are, of course, in the affirmative, and as she stresses in the quote above, she believes that film theory is in fact in a privileged position to study the newly emerging culture of digital imagery. Yet her enthusiasm is somewhat qualified, as she, like so many, is plagued by the sense that the phenomenon that now confronts film theory is quite radically new. Rabinovitz justly sees promise in the continuities between the culture of cinema and the emerging digital culture, which can be appreciated best by attending to the issues of audience and spectatorship, to the social, cultural and political aspects of cinematic culture, many of which are being maintained in the transformation to digital culture. There are still the basic questions, for instance, of the relationships

between technology, power, accessibility, and representation. To the degree to which film theory has already elaborated the means for analyzing such phenomena, it is indeed capable of addressing the new cultural context of digital media. “The authors in this special volume,” she insists, “bring their concerns over these political issues to new ways of imagining how film theory helps us to define and understand the novelties invested in digitally-informed culture as well as the culture’s mapping onto old symbolic orders, representational systems, and cultural institutions” (4). Yet despite these continuities there is something fundamental that seems to have changed, and which requires the sort of description and explanation that film theory may not be capable of providing. It is here that film theory seems unprepared, having for so long neglected certain basic questions about the nature and specificity of cinematic imagery. Confronted by what appears to be a transformation at the most basic level of the image, film theory is, by necessity, being forced to ask questions that have for so many years been excluded from the theoretical discourse on the cinema, forced to confront assumptions that have remained unexamined. “Cinema,” observes Rabinovitz, wistfully, “is no longer (if it ever was) definable as the ‘pure’ cinematographic medium we once thought it to be” (4). While the context within which images are produced, distributed and viewed, the context, that is, within which they acquire social, cultural and political value, may have remained effectively the same, the images *themselves* seem different. “What constitutes the audio-visual component of film,” she argues, “and even *the nature of the image itself* have been challenged by the diffusion of digital technologies in filmmaking” (4; emphasis added).

Stuart Minnis, in the same issue of *iris*, offers a concise description of the present situation in film theory. New digital technologies for the creation and manipulation of

images, he argues, “renew old photography debates that have centered on questions of ontology: how is a photograph related to the physical world it putatively represents?” (50). One’s position in these debates, he insists, is determined by whether or not one is a realist or a conventionalist, and he elaborates a familiar theoretical distinction. The realist, he argues, understands the photograph as a “purely denotative reproduction of the pro-filmic reality,” and therefore sees digitalization as “a threat to the traditional conception of photograph-as-trace” (50). The conventionalist, on the other hand, will “insist that the photograph is (and always has been) an entirely cultural, codified commodity with no ontologically accurate relationship to the phenomenal world” (50). For the conventionalist, “digitalization simply represents a technological advance of their premise” (50). Despite the apparent distance between these two positions, though, Minnis finds that they both embark in fact from the same starting point. “But advocates across the entire range of positions,” he notes, “ask the same question no matter what their respective answers: is photography a medium that is by nature ‘truthful?’” (50). The answers are either that the photograph was never truthful, and that the digital image therefore manifests the inherent unreliability of *all* images, or that the photograph could at one time tell the truth, or at least a certain kind of truth, and that the digital image finally and completely destroys that possibility. In either case, the focus is on the truth or falsity of the photograph, understood to derive from the nature of its relationship with the world, with reality. The conventionalist position depends upon an understanding of the photograph as irretrievably distant from the world, as no different from a painting or a drawing; indeed, as no different from any mode of symbolic representation, including language. The realist, on the other hand, posits an intimate and immediate relation

between the photograph and the world, understanding any symbolic or intentional aspects to necessarily come after the originally automatic and autonomous process of registration and inscription.

These two positions have functioned historically as the basic theoretical options in the analysis of the cinema, and for the last three decades or so the conventionalist position has without question been the most dominant. The question of the relation of the film image to the world seemed, for so long, to have been decided in the conventionalists' favor, and little work has been done in the realm of ontology. If film theory is to be capable, though, of adequately addressing the new culture of the digital, then it seems that it must contend again with this most fundamental question, the question that had for so many years been put aside by film theorists, either understood to have been solved, or understood to be not worth solving. But the new modes for the production, manipulation, distribution and exhibition of images that have been developed and deployed in the last fifteen years or so have given rise to often quite radical speculation on the nature of truth and the reliability of visual imagery, on subjectivity and consciousness, on the meaning, value and significance of representation and the creation of likenesses, and theorists find themselves having to once again consider ontological and epistemological issues as they try to assess consequences of digitization. "In the days when the cinema was a new and astonishing thing," wrote Christian Metz, "and its very existence seemed problematical, the literature of cinematography tended to be theoretical and fundamental" (*Film Language 3*). The cinema is new again, astonishing again, and demands a return to fundamental, theoretical questions.

Bibliography

- Acland, Charles. "Cinema-going and the Rise of the Mega-Plex." *Television and New Media* 1.4 (2000): 375-402.
- Albersmeier, Franz-Josef, ed. *Texte zur Theorie des Films*. Stuttgart: Reclam, 1998.
- Amelunxen, Hubertus von, Stefan Iglhaut, Florian Rötzer, et al., eds. *Photography after Photography: Memory and Representation in the Digital Age*. München: G+B Arts, 1996.
- Andrew, Dudley. *The Major Film Theories: An Introduction*. New York: Oxford, 1976.
- _____. "The Neglected Tradition of Phenomenology in Film Theory." Nichols, *Movies and Methods*, Vol. 2 625-32. Originally published in *Wide Angle*, 2.2 (1978).
- _____. "A Preface to Disputation." *The Image in Dispute: Art and Cinema in the Age of Photography*. Austin: University of Texas, 1997.
- Ansen, David and Ray Sawhill. "The New Jump Cut." *Newsweek* 2 Sept. (1996): 66.
- Apple Computer Inc. *QuickTime Concepts: Developer Documentation for QuickTime 3* 1997, n.p.
- Ayfre, Amédée. *Cinéma et mystère*. Paris: Editions du Cerf, 1969.
- Balio, Tino, ed. *Hollywood in the Age of Television*. Boston: Unwin Hyman, 1990.
- Barthes, Roland. *Elements of Semiology*. Trans. Annette Lavers and Colin Smith. New York: Hill and Wang, 1968.
- _____. *Mythologies*. Trans. Annette Lavers New York: Hill and Wang, 1972.
- _____. "The Roman in Films." *Mythologies*. Trans. Annette Lavers. New York: Hill and Wang, 1972.
- _____. *Camera Lucida: Reflections on Photography*. Trans. Richard Howard. New York: Hill and Wang, 1981.
- Baudelaire, Charles "The Salon of 1859," in *Art in Paris, 1845-1862: Salons and Other Exhibitions*. Trans. and ed., Jonathan Mayne. Oxford: Phaidon Press, 1965.
- Baudry, Jean-Louis. "Ideological Effects of the Basic Cinematographic Apparatus." Nichols, *Movies and Methods*, Vol. 2. 531-42.

- Baudry, Jean-Louis. "The Apparatus." Cha 41-57.
- Bazin, André. *What Is Cinema?* Vol. 1-2. Trans. Hugh Gray. Berkeley: University of California Press, 1971.
- Belton, John. *Widescreen Cinema*. Cambridge, MA: Harvard University Press, 1992.
- _____. "Digital Cinema: A False Revolution." *October* 100 (2002): 98-114.
- Bentele, Günter, ed. *Semiotik und Massenmedian*. München: Ölschläger, 1981.
- Bettetini, Gianfranco. *The Language and Technique of the Film*. The Hague: Mouton, 1968 [1973].
- Binkley, Timothy. "Camera Fantasia: Computed Visions of Virtual Reality." *Millennium Film Journal* 20/21 (1988-89): 7-43.
- Bordwell, David. *Narration in the Fiction Film*. Madison: University of Wisconsin Press, 1985.
- _____. "Convention, Construction, and Cinematic Vision." Bordwell and Carroll, 87-107.
- _____. "Intensified Continuity: Visual Style in Contemporary American Film." *Film Quarterly* 55.3 (2002): 16-28.
- Bordwell, David and Noël Carroll. *Post-Theory: Reconstructing Film Studies*. Madison: University of Wisconsin Press, 1996.
- Bottomore, Stephen. "The Panicking Audience?: early cinema and the 'train effect'." *Historical Journal of Film, Radio and Television*. 19.2 (1999): 177-216.
- Brian Henderson, "Two Types of Film Theory." Nichols, *Movies and Methods*, Vol. 1 388-400. Originally published in *Film Quarterly* 24.3 (1971).
- Brosnan, John. *Movie Magic: The Story of Special Effects in the Cinema*. New York: Plume, 1976.
- Buckland, Warren. "Between Science Fact and Science Fiction: Spielberg's Digital Dinosaurs, Possible Worlds, and the New Aesthetic Realism." *Screen* 40.2 (1999): 177-92.
- Carroll, Noël. *Philosophical Problems of Classical Film Theory*. Princeton: Princeton University Press, 1988.
- _____. *Mystifying Movies: Fads and Fallacies in Contemporary Film Theory*. New York: Columbia University Press, 1988.

- _____. "Towards an Ontology of the Moving Image." Freeland and Wartenberg 68-85.
- _____. *Theorizing the Moving Image*. Cambridge: Cambridge University Press, 1996.
- _____. "Medium Specificity Arguments and the Self-Consciously Invented Arts." *Millennium Film Journal* 14/15 (1984-5): 127-53. Rpt. in Carroll, *Theorizing* 3-24.
- _____. "Prospects for Film Theory: A Personal Assessment." Bordwell and Carroll 37-70.
- Casetti, Francesco. *Theories of Cinema, 1945-1995*. Trans. Francesca Chiostrri and Elizabeth Gard Bartolini-Salimbeni, with Thomas Kelso. Austin: University of Texas Press, 1999.
- Cavell, Stanley. *The Claim of Reason: Wittgenstein, Skepticism, Morality and Tragedy*. New York: Oxford University Press, 1979.
- _____. *The World Viewed: Reflections on the Ontology of Film*. Enlarged edition. Cambridge: Harvard University Press, 1979 [1971].
- _____. "The Thought of Movies." Freeland and Wartenberg 13-32.
- Cha, Theresa Hak Kyung, ed. *Apparatus, cinematographic apparatus: selected writings*. New York: Tanam Press, 1981.
- Chisolm, Brad. "Red, Blue and Lots of Green: The Impact of Color Television on Feature Film Production." *Balio* 213-234.
- Colapietro, Vincent. *Peirce's Approach to the Self: A Semiotic Perspective on Human Subjectivity*. Albany: State University of New York Press, 1989.
- Combs, Richard and Raymond Durnat. "Rules of the Game." *Film Comment* 36.5 (2000): 28-33.
- Comolli, Jean-Louis. "Technique and Ideology: Camera, Perspective, Depth of Field." Nichols, *Movies and Methods*, Vol. 2, 40-57.
- Cook, David A. *A History of Narrative Film*. 3rd Ed. New York: Norton, 1996.
- Crawford, Donald. "The Uniqueness of the Medium." *The Personalist* 51 (1970): 460-73.
- Cubitt, Sean. *Digital Aesthetics*. London: Sage, 1998.

- _____. "Introduction. Le réel, c'est l'impossible: the sublime time of special effects." *Screen* 40.2 (1999): 123-30.
- Currie, Gregory. *Image and Mind: Film, Philosophy and Cognitive Science*. Cambridge: Cambridge University Press, 1995.
- Davis, Douglas. "The Work of Art in the Age of Digital Reproduction (An Evolving Thesis: 1991-1995)." *Leonardo* 28.5 (1995): 381-86.
- Deleuze, Gilles. *Cinema 1: The Movement-Image*. Trans. Hugh Tomlinson and Barbara Haberjam. Minneapolis: University of Minnesota Press, 1986.
- _____. *Cinema 2: The Time-Image*. Trans. Hugh Tomlinson and Robert Galeta. Minneapolis: University of Minnesota Press, 1989.
- Dinsmore-Tuli, Uma. "The pleasures of 'home cinema', or watching movies on telly: an audience study of cinephiliac VCR use." *Screen* 41.3 (2000): 315-27.
- Dixon, Wheeler Winston. "The Digital Domain: Some Preliminary Notes on Image Mesh and Manipulation in Hyperreal Cinema/Video." *Film Criticism* XX.1-2 (1996): 55-66.
- _____. *The Transparency of Spectacle: Meditations on the Moving Image*. Albany: SUNY Press, 1998.
- _____. *Disaster and Memory: Celebrity Culture and the Crisis of Hollywood Cinema*. New York: Columbia University Press, 1999.
- _____. *The Second Century of Cinema: The Past and Future of the Moving Image*. Albany: SUNY Press, 2000.
- _____. "Twenty-five Reasons Why It's All Over." *Lewis* 325-49.
- Dosse, François. *History of Structuralism*. 2 Vols. Trans. Deborah Glassman. Minneapolis: University of Minnesota Press, 1997.
- Eco, Umberto. *La struttrua assente*. Milan: Bompiani, 1968.
- _____. *A Theory of Semiotics*. Bloomington: Indiana University Press, 1976.
- _____. *Semiotics and the Philosophy of Language*. Bloomington: Indiana University Press, 1984.
- Elkins, James. "There are No Philosophic Problems Raised by Virtual Reality." *Computer Graphics* Vol. 28 (4), November 1994: 250-54.

- _____. *Why Are Our Pictures Puzzles? On the Modern Origins of Pictorial Complexity*. New York and London: Routledge, 1999.
- Ellis, Jack C. and Virginia Wright Wexman. *A History of Film*. 5th ed. Boston: Allyn and Bacon, 2002.
- Elsaesser, Thomas. "Early Cinema: From Linear History to Mass Media Archeology." *Early Cinema: Space, Frame, Narrative* (London: BFI, 1990): 1-8.
- Fang, Irving. *A History of Mass Communication: Six Information Revolutions*. Boston: Focal Press, 1997.
- Fisch, M. et al., eds. *Writings of Charles S. Peirce: A Chronological Edition*. Bloomington, Indiana University Press.
- Fisher, Bob. "The Dawning of the Digital Age." *American Cinematographer* 73.4 (1992): 70-74, 76, 78, 80-86.
- _____. "“Digital Cinematography:’ A Phrase of the Future?” *American Cinematographer* 74.5 (1993): 31-2.
- _____. "Escaping From Chains." *American Cinematographer* 81.10 (2000): 36-42, 46-49.
- Freedberg, David. *The Power of Images: Studies in the History and Theory of Response*. Chicago: University of Chicago Press, 1989.
- Freeland, Cynthia A. and Thomas E. Wartenberg, eds. *Philosophy and Film*. New York and London: Routledge, 1995.
- Friedberg, Anne. "The End of Cinema: Multimedia and Technological Change." *Gledhill and Williams* 438-52.
- Gabler, Neal. *Life the Movie: How Entertainment Conquered Reality*. New York: Alfred A. Knopf, 1999.
- Gaut, Berys. "Analytic Philosophy of Film: History, Issues, Prospects." *Philosophical Books* 38.3 (1997): 145-156.
- Geuens, Jean-Pierre. "The Digital World Picture." *Film Quarterly* 55.4 (2002): 16-27.
- Gillette, Frank. *Video Process and Meta-Process*. Syracuse, NY: Everson Museum of Art, 1973.
- Gledhill, Christine and Linda Williams. *Reinventing Film Studies*. London: Arnold, 2000.

- Goudge, Thomas. *The Thought of C.S. Peirce*. Toronto: University of Toronto Press, 1950.
- Greimas, A.J. and Joseph Courtés. *Sémiotique: Dictionnaire raisonné de la théorie du langage*. Paris: Hachette, 1979.
- Gross, Kenneth. *The Dream of the Moving Statue*. Ithaca: Cornell University Press, 1992.
- Handling, Piers. "Fast-food Movies for a Fast-food World." *Globe and Mail* [Toronto] 6 Sept. 2001: R1+.
- Hanson, Karen. "Provocations and Justifications of Film." *Freeland and Wartenberg* 33-48.
- Heath, Stephen. *Questions of Cinema*. New York: Macmillan, 1981.
- Hill, John and Pamela Church Gibson, eds. *The Oxford Guide to Film Studies*. Oxford: Oxford University Press, 1998.
- Hjelmslev, Louis. *Prologomena to a Theory of Language*. Madison: University of Wisconsin Press, 1961 [1943].
- Hoensch, J. "Fragen an die Filmsemiologie" *Semiosis* 3 (1976): 28-47.
- Hookway, Christopher. *Peirce*. London: Routledge, 1992 [1985].
- Irwin, William. *The Matrix and Philosophy: Welcome to the Desert of the Real*. London: Open Court, 2002.
- Jacek Jadacki, "Nominalism," "Realism." *Encyclopedic Dictionary of Semiotics*. Tome 2. 1986.
- Jacques, Robert A. "On the Reality of Seconds." *Transactions of the Charles S. Peirce Society* 28.4 (1992): 757-66.
- James, Nick. "Digital Deluge." *Sight and Sound* 11.10 (Oct. 2001): 20-24.
- Jarvie, Ian. *Philosophy of the Film: Epistemology, Ontology, Aesthetics*. New York and London: Routledge and Kegan Paul, 1987.
- Jay, Martin. *Downcast Eyes: The Denigration of Vision in Twentieth-Century French Thought*. Berkeley: University of California Press, 1993.
- Jenkins, Henry. "The Work of Theory in the Age of Digital Transformation." *Miller and Stam* 234-61.

- Johansen, Jørgen Dines. *Dialogic Semiosis: An Essay on Signs and Meaning*. Bloomington: Indiana University Press, 1993.
- Keane, Marian. "Who's Silencing Whom?" *Film and Philosophy* Vol. II (1995): 111-18.
- Kilbourne, Russell. "Re-Writing 'Reality': Reading *The Matrix*." *Canadian Journal of Film Studies* 9.2 (2000): 43-54.
- Kindem, Gorham A. "Peirce's Semiotic Phenomenalism and Film." *Quarterly Review of Film Studies* 4.1 (1979): 61-69.
- Kipnis, Laura. "Film and Changing Technologies." Hill and Church Gibson 595-604.
- Kolker, Robert P. "The Film Text and Film Form." Hill and Church Gibson 11-23.
- Koszarski, Richard. *An Evening's Entertainment: The Age of the Silent Picture, 1915-1928*. Berkeley: University of California Press, 1990. Vol. 3 of *History of the American Cinema*. 10 Vols. 1990-2000.
- Lawrence, Edward. "Smoke and Mirrors." *Sight and Sound* 8.7 (1998): 30.
- Lefebvre, Martin and Marc Furstenau. "Digital Editing and Montage: The Vanishing Celluloid and Beyond" *Cinémas: revue d'études cinématographiques* 13.1-2 (2002): 69-107.
- Lewis, Jon. *The End of Cinema As We Know It: American Film in the Nineties*. New York: NYU Press, 2002.
- Lister, Martin, ed. *The Photographic Image in Digital Culture*. London and New York: Routledge, 1995.
- Lotman, Jurij. *Semiotics of Cinema*. Trans. Mark E. Suino. Ann Arbor: University of Michigan, 1976.
- Lowry, Edward. *The Filmology Movement and Film Study in France*. Ann Arbor: UMI Research Press, 1985.
- Lunenfeld, Peter. "Art Post-History: Digital Photography and Electronic Semiotics." *Amelunxen* 92-98.
- Maltby, Richard. *Hollywood Cinema: An Introduction*. Oxford: Blackwell, 1995.
- Manovich, Lev. "Cinema and Digital Media." Shaw and Schwarz n.p.
- _____. *The Language of New Media*. Cambridge: MIT Press, 2001.

- Mast, Gerald and Bruce F. Kawin. *A Short History of the Movies*. 8th ed. New York: Longman, 2003.
- Mayne, Jonathan, ed. And trans. *Art in Paris, 1845-1862: Salons and Other Exhibitions* Oxford: Phaidon Press, 1965.
- McDonald, William. "Dazzled or Dazed?: The Wide Impact of Special Effects." *New York Times* 3 May 1998, sec. 2A, p. 1+.
- McQuire, Scott. "Digital Dialectics: The Paradox of Cinema in a Studio Without Walls." *Historical Journal of Film, Radio, and Television* 19.3 (1999): 379-97.
- Metz, Christian. *Film Language*. Trans. Michael Taylor. New York: Oxford University Press, 1974.
- _____. "The Imaginary Signifier." *Screen* 16.2 (1975): 14-76.
- _____. *The Imaginary Signifier: Psychoanalysis and the Cinema*. Trans. Celia Britton, Annwyl Williams, Ben Brewster and Alfred Guzzetti. Bloomington: Indiana University Press, 1977.
- Miller, Toby and Robert Stam, eds. *A Companion to Film Theory*. Malden, MA and Oxford: Blackwell, 1999.
- Minnis, Stuart. "Digitalization and the Instrumentalist Approach to the Photographic Image." *iris* 25 (1998): 49-59.
- Mitchell, William J. *The Reconfigured Eye: Visual Truth in the Post-Photographic Era*. Cambridge: MIT Press, 1994.
- Möller, Karl-Dietmar. "Syntax und Semantik in der Filmsemiotik." *Bentele* 32-51.
- Monaco, James. *How to Read a Film: The World of Movies, Media, and Multimedia: Language, History, Theory*. 3rd ed. New York: Oxford University Press, 2000.
- Montgomery, Garth. "Film Realism: A Comment." *Historical Journal of Film, Radio and Television* 16.2 (1996): 269-71.
- Murch, Walter. "A Digital Cinema of the Mind? Could Be." *New York Times* 2 May, 1999, late ed.: A1.
- Musser, Charles. *The Emergence of the Cinema: The American Screen to 1907*. Berkeley: University of California Press, 1990. Vol. 1 of *History of the American Cinema*. 10 Vols. 1990-2000.
- Neale, Stephen and Murray Smith, eds. *Contemporary Hollywood Cinema*. London: Routledge, 1998.

- Nelmes, Jill, ed. *An Introduction to Film Studies*. New York: Routledge, 1996.
- Nichols, Bill ed. *Movies and Methods*. 2 Vols. Berkeley: University of California Press, 1976-1985.
- _____. *Ideology and the Image: Social Representation in the Cinema and Other Media*. Bloomington: Indiana University Press, 1981.
- _____. *Representing Reality: Issues and Concepts in Documentary*. Bloomington: Indiana University Press, 1991.
- _____. "Image and Reality: The Real Story." *Historical Journal of Film, Radio and Television* 16.2 (1996): 267-68.
- Nöth, Winfried. *Handbook of Semiotics*. Bloomington: Indiana University Press, 1995.
- _____. *Semiotics of the Media: Proceedings of an International Congress*, Kassel, March 1995. Berlin and New York: Mouton de Gruyter, 1997.
- Ovid, *Metamorphoses*. Trans. Mary M. Innis. Penguin Classics: 1955.
- Pankow, Christine, ed. *Indexicality: Papers from the Third Bi-Annual Meeting of the Swedish Society for Semiotic Studies*. "Gothenburg University. SSKKII Report 9604. n.d.
- Parker, Kelly. "Peirce's Semeiotic and Ontology." *Transactions of the Charles S. Peirce Society* 30.1 (1994): 51-75.
- Pasolini, Pier Paolo. *Heretical Empiricism*. Ed. Louise K. Barnett; trans. Ben Lawton and Louise K. Barnett. Bloomington: Indiana University Press, 1988.
- Peirce, Charles Sanders. *Collected Papers* Vols. I-VIII. Eds. C. Hartshorne, P. Weiss and A. Burks. Cambridge: Harvard University Press, 1931-1958.
- Peritore, Patrick. "Descriptive Phenomenology and Film: An Introduction." *Journal of the University Film Association* 29.1 (1977): 3-6.
- Peters, Jan-Marie. "Die Struktur der Filmsprache." *Albersmeier* 371-88.
- Pizzello, Chris. "Forecasting the Digital Future," *American Cinematographer* 75.3 (1994): 22-24, 26, 28, 30.
- Porton, Richard. "Something Rotten in the State of Denmark: Interview with Thomas Vinterberg," *Cineaste* 24.2-3 (1999): 17-19.
- Poster, Steven. "Filmmaker's Forum." *American Cinematographer* 74.11 (1993): 104.

- Prince, Stephen. "The Discourse of Pictures: Iconicity and Film Studies." *Film Quarterly* 47.1 (1993): 16-28.
- Rabinovitz, Lauren. "Introduction: Film Theory and the Digital Image." *iris* 25 (1998): 1-10.
- Read, Herbert. *Icon and Idea: The Function of Art in the Development of Human Consciousness*. New York: Schocken, 1965.
- Ritchin, Fred. "The End of Photography as We Have Known It." *Wombell* 57-72.
- Robin, Richard. *Annotated Catalogue of the Papers of Charles S. Peirce*. Amherst: University of Massachusetts Press, 1967.
- Rodowick, D. N. "Dr. Strange Media; or, How I Learned to Stop Worrying and Love Film Theory." *PMLA* 116 (2001): 1396-1404.
- _____. *Reading the Figural, or, Philosophy After the New Media*. Durham and London: Duke University Press, 2001.
- Rothman, William, "Cavell's Philosophy and What Film Studies Calls 'Theory': Must the Field of Film Studies Speak in One Voice?" *Film and Philosophy* Vol. II (1995): 105-10.
- Rothman, William and Marian Keane. "Toward a Reading of *The World Viewed*." *Journal of Film and Video* 49. 1-2 (1997): 5-16.
- _____. *Reading Cavell's The World Viewed: A Philosophical Perspective*. Detroit: Wayne State University Press, 2000.
- Royce, Josiah. *The Religious Aspect of Philosophy: A Critique of the Basis of Conduct and of Faith*. New York: Harper, 1958.
- Sabin, Rob. "The Movies' Digital Future is in Sight and It Works." *New York Times* 26 November 2000, sec. 2: 1+.
- Sankowski, Edward. "Uniqueness Arguments and Artist's Actions." *Journal of Aesthetics and Art Criticism* 37.1 (1979): 61-74.
- Saussure, Ferdinand de. *Course in General Linguistics*. Trans. Wade Baskin. New York: McGraw-Hill, 1969.
- Sebeok, Thomas A. *Contributions to the Doctrine of Signs*. Bloomington: Indiana University Press, 1976.
- _____. ed. *Encyclopedic Dictionary of Semiotics*. Berlin: Mouton de Gruyter, 1986.

- Sellors, C. Paul. "The Impossibility of Science Fiction: Against Buckland's Possible Worlds." *Screen* 41.2 (2000): 203-16.
- Shaw J. and H.-P. Schwarz, eds. *Media art perspectives: the digital challenge: museums and art sciences respond* (Ostfildern: Cantz Verlag, 1996).
- Sherzer, Joel. "Nonverbal and Verbal Deixis: The Pointed Lip Gesture Among the Santa Blas Cuna." *Language in Society* 2 (1973): 117-31.
- Simon, Josef. *Philosophy of the Sign*. Trans. George Heffernan. Albany: SUNY Press, 1995.
- Singer, Irving. *Reality Transformed: Film as Meaning and Technique*. Cambridge, MA: MIT Press, 1998.
- Sklar, Robert. *Movie-Made America: A Cultural History of American Movies*. Revised Ed., New York: Vintage, 1994 [1975].
- Smith, C.M. "The Aesthetics of Charles S. Peirce." *Journal of Aesthetics and Art Criticism* 31.1 (1972): 21-9.
- Smith, Gavin. "Imitation of Life: An Interview with Lars von Trier." *Film Comment* 36.5 (2000): 22.
- Smith, Murray. *Engaging Characters: Fiction, Emotion and the Cinema*. Oxford: Clarendon Press, 1995.
- Sobchack, Vivian. *The Address of the Eye: A Phenomenology of Film Experience*. Princeton: Princeton University Press, 1992.
- _____. "Nostalgia for a Digital Object: Regrets on the Quickening of QuickTime," *Millennium Film Journal* 34 (1999). Online: <http://www.mfj-online.org/journalPages/MFJ34/VivianSobchack.html>
- Sonesson, Göran. "Die Semiotik des Bildes: Zum Forschungsstand am Anfang der 90er Jahre." *Zeitschrift für Semiotik* 15.1-2 (1993): 131-64. Original English version ("Pictorial Semiotics: The State of the Art at the Beginning of the Nineties") at http://www.arthist.lu.se/kultsem/sonesson/CV_gs.html.
- _____. "The Multimmediation of the Lifeworld." Nöth, *Semiotics of the Media* 61-78.
- _____. "The Pencils of Nature and Culture: New Light In – and On – the Lifeworld." *Semiotica* 136.1-4: 27-53.
- _____. "Post-Photography and Beyond (1): From Mechanical Reproduction to Digital Production." *Visio* 4.1 (1999): 11-36.

- _____. "Visual Signs in the Age of Digital Reproduction." Available on the website of the Department of Semiotics, Lund University, Lund, Sweden, <<http://www.arthist.lu.se/kultsem/sonesson/PhotoPost.html>>. Published on CD-ROM in *Bridging Nature and Culture: Proceedings of the 6th International Congress of the IASS*, Guadalajara, México, July 13 to 19, Gimata Weslh, Adrián, ed. (México: Pourrua, n.d.).
- _____. "Indexicality as Perceptual Mediation." Pankow 127-43.
- Sontag, Susan. "The Decay of Cinema." *New York Times Magazine* 17 Mar. 1996: 12-13.
- Sorlin, Pierre. "That Most Irritating Question: Images and Reality." *Historical Journal of Film, Radio and Television* 16.2 (1996): 263-65.
- Spielmann, Yvonne. "Expanding Film into Digital Media." *Screen* 40.2 (1999): 131-45.
- Stam, Robert, Robert Burgoyne and Sandy Flitterman-Lewis. *New Vocabularies in Film Semiotics: Structuralism, Poststructuralism and Beyond*. New York and London: Routledge, 1992.
- Steven Poster, "Filmmaker's Forum." *American Cinematographer* 74.11 (1993): 104.
- Stewart, Garrett. *Between Film and Screen: Modernism's Photo Synthesis*. Chicago: University of Chicago Press, 1999.
- Straw, Will. "Proliferating Screens." *Screen* 41.1 (1999): 115-18.
- Tashiro, Charles. "Project 734: Digital Video and Non-Professional Filmmaking." *CineAction* 47 (1998): 16-23.
- Thomson, David. *Movie Man*. New York: Stein and Day, 1967.
- Thonssen, Lester. *Representative American Speeches 1961-1962*. New York: Wilson, 1962.
- Tolstoy, Leo. *What is Art?* Trans. Aylmer Maude. New York: Liberal Arts Press, 1960.
- Tomasulo, Frank P. "Phenomenology: Philosophy and Media Theory – An Introduction." *Quarterly Review of Film and Video* 12.3 (1990): 1-8.
- Tredell, Nicolas, ed., *Cinemas of the Mind: A Critical History of Film Theory*. Cambridge: Icon, 2002.
- Usai, Paolo Cherchi. *The Death of Cinema: History, Cultural Memory and the Digital Dark Age*. London: British Film Institute, 2001.
- Webster, Chris. "Film: The Place Where Art and Technology Meet." Nelmes 59-87.

- Williams, Christopher. "After the classic, the classical and ideology: the differences of realism." *Screen* 35.3 (1994): 275-92.
- Wilson, George M. *Narration in Light: Studies in Cinematic Point of View*. Baltimore and London: The Johns Hopkins University Press, 1986.
- Wollen, Peter. *Signs and Meaning in the Cinema*. Bloomington: Indiana University Press, 1972 [1969].
- Wombell, Paul, ed. *Photovideo: Photography in the Age of the Computer*. London: Rivers Oram Press, 1991.
- Wood, Robin. "Humble Guests at the Celebration: Interview with Thomas Vinterberg." *CineAction* 48 (1998): 47-54.
- Wurzer, Wilhelm. *Filming and Judgment: Between Heidegger and Adorno*. Humanities Press: New Jersey & London: 1990.
- Wyatt, Roger B. "The Emergence of a Digital Cinema." *Computers and the Humanities* 33 (1999): 365-381.