Light Moving in Time

Studies in the Visual Aesthetics of Avant-Garde Film

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To my mother,
Florence Myers Wees,
and to the memory of my father,
James Frank Sherman Wees.

Preface

As other writers have shown, the mainstream of film theory and criticism offers several modes of analysis suited to the study of avant-garde film. In the Introduction, I mention a few examples that seem most noteworthy. On the whole, however, these critical approaches seem ill-equipped to examine the specifically visual aspects of avant-garde film. Perhaps this is due in part to innate differences between critics' discursive thought and film artists' "visual thinking," but surely it is also due to theoretical presuppositions accompanying what Martin Jay has called "the anti-visual discourse of 20th century French thought," which has profoundly influenced film theory since the 1960s.[1] My goal is not to critique that discourse but to open (in some cases, reopen) lines of inquiry suitable to a pro-visual discourse, in which avant-garde filmmakers are already engaged and to which film theorists and critics should be able to make significant contributions of their own.[2] I will return to this issue in the Introduction, and each succeeding chapter will elaborate one or more of its implications.

By emphasizing the visual aesthetics of avant-garde film, I have avoided the tangle of historical and theoretical issues involved in defining the term *avant-garde* and applying it to film and other media. For my present purpose, experimenting with the medium and opposing the dominant film industry suffice to make a filmmaker avant-garde—though I readily acknowledge that there are more rigorous ways of defining the term, just as there are other terms (for example, experimental, underground, visionary,

personal, poetic, pure, free, independent, alternative) that have been applied to the films I call avant-garde.[3] More to the point, the filmmakers discussed here were selected not because they can be labeled avant-garde, but because they took advantage of the avant-garde spirit of experimentation and opposition to explore the visual dimensions of film. They are, one might say, visual artists by choice and avant-garde only by necessity.

They are also artists with well-established reputations within North American avant-garde film. In fact, I have limited my detailed discussion to the work of a few major figures (for reasons explained in the Introduction); consequently, I have left out many fine filmmakers—including some from whom I have learned a great deal about looking at and thinking about avant-garde films. I expect to write about other avant-garde filmmakers in the future, and I will be delighted if other writers draw upon the arguments set forth in this book to discuss filmmakers I have not included. May a provisual discourse on avant-garde film flourish!

Another matter requiring comment is the use of frame enlargements (most of which I made myself) to illustrate passages of films. Although every effort has been made to reproduce the complete frame, it was impossible to avoid slight variations in size and shape introduced in the process of going from film frames to photographs to reproductions on the printed page. Moreover, not only were most of the original images in color rather than gradations of gray, but they were never intended to be seen as photographs in the first place. At best, frame enlargements are faint shadows or slight, fossilized imprints of the film's living, luminous presence on the screen. They may jog the visual memory of readers who have seen the films projected, but for readers who have not seen the films, they can do little more than hint at what the films really look like.

Finally, although many of the films discussed here have soundtracks, the aural experience they provide is not examined in detail. Certainly this is an injustice, not only to the films in question but also to the avant-garde film movement in general, which has produced many examples of complex and evocative uses of sound and sound-image relationships. To do justice to the aural aesthetics of avant-garde film, though, I would have to adopt a different critical approach, one applicable to a different channel of transmission, a different mode of perception, and (on the whole) a different selection of films for close inspection. That prospect remains open and I hope inviting to other investigators. For me, however, vision and the visual aesthetics of avant-garde film demand prior consideration.

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Introduction

The artist has carried the tradition of vision and visualization down through the ages. In the present time a very few have continued the process of visual perception in its deepest sense and transformed their inspiration into cinematic expression.
—Stan Brakhage, *Metaphors on Vision*

From the beginning, avant-garde filmmakers have insisted on the visual nature of the film medium. "The image must be everything," said Fernand Léger.[1] Man Ray described *Emak Bakia* (1926) as, "purely optical, made to appeal to the eyes only."[2] The scenario for *The Seashell and the Clergyman* (1928), said Antonin Artaud, was "based on purely visual situations whose action springs from stimuli addressed to the eye only."[3] For Hans Richter, film was "visual rhythm, released photographically."[4] Dziga Vertov said his goal was to produce "a finished étude of absolute vision."[5] Germaine Dulac campaigned tirelessly for, in her words, "an art of vision . . . an art of the eye."[6]

Comparable pronouncements appear throughout the history of avant-garde film, but I have singled out one by Stan Brakhage for the epigraph to this introduction because it not only reiterates the avant-garde's commitment to "an art of vision" but locates the source of that art in "visual perception in its deepest sense."[7] I propose to take this assertion literally and examine its

implications for avant-garde film in general and the work of Brakhage and a few of his contemporaries in particular (without implying that the filmmakers I have chosen to discuss are necessarily the "very few" to whom Brakhage alludes).

On the one hand, then, there is the avant-garde's traditional emphasis on vision, on film as "an art of the eye." On the other hand, there is the study of visual perception, the science of the eye. My goal is to bring both approaches to seeing—the cinematic and the perceptual—into a single discourse on vision and the visual art of avant-garde film.

Among early attempts to relate visual perception to film aesthetics, probably the best known is Rudolf Arnheim's *Film as Art* . Arnheim

invokes the perceptual theories of Gestalt psychology but does not apply them in great detail and does not give any special attention to avant-garde film.[8] Similarly, Slavko Vorkapich drew upon Gestalt psychology in a series of lectures, "The Visual Nature of the Film Medium," given at the Museum of Modern Art in New York in 1965 and extensively summarized in *Film Culture* .[9] Only the first few lectures dealt specifically with perceptual issues, however, and, again, avant-garde film is barely mentioned. Moreover, subsequent research has failed to support the Gestaltists' theoretical premise of an isomorphic relationship between perceived forms and specific electrical fields in the brain.[10] So, although an aesthetics based on Gestalt psychology may tell us a great deal about the formal structures of visual art, its basis in the actual functions of visual perception is problematic.

Jacques Aumont calls attention to the weakness of the Gestalt approach in a short but comprehensive article on visual perception and film theory published in 1983.[11] Although Aumont's stated concerns are principally "anthropological" rather than aesthetic and he makes no mention of avant-garde film, his argument shares with mine the assumption that questions of cinema and questions of perception are intricately related, especially where they concern the nature of the image and how it is perceived. As Aumont correctly points out, the image per se is of less interest in recent research on perception than are the processes that produce the image, and these psychophysiological processes are more likely to be compared to information processing than to capturing an image on film or projecting it on a screen. Scientific efforts to explain the brain's method of constructing the visual world, however, are relevant to the study of cinema. In chapter 1 I will draw upon scientific studies of vision to argue that what vision and film have in common is a fundamental dependence on light moving in time, and that what we call an image is the shape given to light's movement by the computations of the eye and brain and by the mechanical and optical apparatus of cinema.

In *Concepts in Film Theory* , Dudley Andrew proposes, "Cinema is above all things a representation of visual life itself." Therefore, he argues, filmmakers can use their art to "pose questions about seeing," and the only filmmakers Andrew mentions in this context are from the avant-garde: J. J. Murphy, Paul Sharits, Michael Snow, Bruce Conner, and Kenneth Anger.[12] Andrew does not pursue this line of argument, however, and in the rest of his book he gives scant attention to the avant-garde and none to its "questions about seeing." Nevertheless, the postulate that film represents "visual life itself" and its corollary, that avant-garde film

is especially suited to "pose questions about seeing," provide a firm basis from which to approach the visual aesthetics of avant-garde film. They must be expanded upon, however, and related to another issue that Andrew does not emphasize sufficiently: the role of the cinematic apparatus.

Any cinematic expression of vision must emerge from the optical, photochemical, and mechanical processes of making and showing films. Although these processes differ greatly from those of visual perception, they

are designed to produce an image comparable to the world we see when we look around us. Hence the conventions of photographic realism accepted by the dominant film industry. Because of those conventions, most films offer a very limited and highly standardized version of "visual life": focused, stable, unambiguous representations of familiar objects in three-dimensional space. While it is true that this is similar to the image of the world ordinarily provided by so-called normal vision, it is also true that we are capable of seeing the world quite differently. To express some of these other ways of seeing, avant-garde filmmakers have chosen to ignore, subvert, or openly break the rules of conventional filmmaking. Whether intuitively or by conscious intention, they have discovered that "questions about seeing" include questions about the cinematic apparatus itself.

Thus, my inquiry into the avant-garde's cinematic equivalents of visual perception will follow two complementary lines of argument. The first holds that vision embraces many different ways of seeing. In addition to focused and full-color foveal vision, there are varying degrees of less focused and colorless peripheral vision, as well as hallucinations, optical illusions, and "closed-eye vision" (as Brakhage calls it), which includes hypnagogic imagery, phosphenes, and the grainy visual "noise" perceptible when we are in a dark room or have our eyes tightly closed. These and other less familiar ways of seeing have been documented in scientific studies of vision, as well as in the more subjective testimony of visual artists. They can also be discovered through our own processes of visual perception, when we allow ourselves to notice everything we are capable of seeing. In brief, my first line of argument insists on a recognition of a "visual life" that includes all possible ways of seeing.

The second line of argument requires a comparably expanded sense of what the cinematic apparatus can produce. It rests on the significance of such characteristic avant-garde techniques as superimposition, prismatic and kaleidoscopic images, soft focus, unusual camera angles, disorienting camera movement, extreme close-ups, negative images, distorted and totally abstract images, extreme variables in lighting and exposure, scratch-

ing and painting on the film, slow motion, reverse motion, pixilation, time-lapse photography, quick cutting, intricate patterns of montage, single-frame editing, and flicker effects.

These and other experimental techniques adopted by avant-garde filmmakers have been interpreted in various ways: as gestures of rebellion against the conventions of popular cinema, as typical shock tactics in the avant-garde's campaign to *épater les bourgeois* , as formalist methods of defamiliarization, as new visual codes substituted for the traditional codes of narrative and representation in cinema, as expressions of psychological states and symbolic meanings, as experiments to determine the formal properties of film, as ways of demystifying the medium and fore-grounding its materials and processes of production.

While granting the pertinence of all of these explanations, I would propose another that is less widely recognized but equally valid: the unorthodox techniques of avant-garde filmmakers "pose questions about seeing" and confront the viewer with a more complex and dynamic experience of visual perception than is normally the case in film viewing. This suggests that the two lines of argument concerning what we are capable of seeing and what the apparatus is capable of showing might be described more accurately as two terms of a dialectical relationship between visual perception and the technology and techniques of cinema. This dialectic of eye and camera (as I will call it for short) will be my principal point of reference in examining the visual aesthetics of avant-garde film.

In the early 1970s, two close observers of the avant-garde drew attention to the dialectics of eye and camera, though not in precisely those terms. In his historical survey of avant-garde film, David Curtis comments that avant-garde filmmakers "have explored the camera's ability to emulate and enhance human

visual perception," and in one of his columns for *Take One* , Lenny Lipton argued that "an aesthetic theory of film should take into account the psychology of a dynamic eye and mind in relation to the technology of cinema."[13] Unfortunately, neither Curtis nor Lipton elaborated upon their insights or applied them to a detailed study of avant-garde film.

Among other critics who have declared their special interest in the visual dimension of avant-garde film, none have made an extended analysis of the dialectic of eye and camera. P. Adams Sitney, for example, says the "central theme" of his *Visionary Film* is the "dialogue of camera eye and nature," but his principal concern turns out to be "the cinematic reproduction of the human mind," and in his terms, "visionary" has more to do with the imagination than with visual perception.[14] In *Underground*

Film: A Critical History , Parker Tyler insists that "the particular emphasis" of the avant-garde is on "the film camera *as voyeur* " (Tyler's emphasis). This premise leads to many cogent comments on individual films and filmmakers, but it produces little insight into the perceptual possibilities of the camera beyond its function as the "peephole of the underground."[15] Gene Youngblood declares early in *Expanded Cinema* that "film is a way of seeing" but then skims over the conjunction of film and seeing, to concentrate on the ways film, video, and computer technologies communicate "expanded consciousness."[16] As helpful as all three critics have been in creating a broader appreciation of the avant-garde's accomplishments, they have not dealt adequately with the dialectic of eye and camera, nor have they placed sufficient emphasis on the desire of avant-garde filmmakers to "emulate and enhance human visual perception," in Curtis's phrase.

With one exception, more recent studies of avant-garde film have been even less illuminating on these particular issues.[17] The exception is Maureen Turim's *Abstraction in Avant-Garde Films* , in which psychoanalytic theory and semiotics provide the basis for an examination of perceptual processes set in motion by the avant-garde's radical reworking of image and sound. Although Turim places greater emphasis on the psychological than the visual experience of the film viewer (while allowing that the one cannot exist without the other), she demonstrates an appreciation of the visual art of avant-garde film that I share—though my approach and most of my examples are not the same as hers.

In other recent studies, politics and ideology take precedence over perceptual and aesthetic considerations. In Patricia Mellencamp's *Indiscretions: Avant-Garde Film, Video, and Feminism* , the North American avant-garde scene and a sampling of its films and videos appear within a matrix of post-structuralist and postmodernist approaches that have been shaped and nourished by the author's engagement with feminism. Marxism serves a similar function in Peter Gidal's *Materialist Film* . Advancing a line of argument that Malcolm Le Grice presented less militantly in *Abstract Film and Beyond* , Gidal insists that the only films worthy of being called avant-garde are those that engage the viewer in a radical and self-referential critique of the technical, psychological, and social apparatus of cinema. Dana Polan's *The Political Language of Film and the Avant-Garde* avoids the partisanship and adversarial tone of Gidal's book, but it also avoids consideration of film as "an art of seeing" in order to pursue questions concerning the political relevance of film.

David James's *Allegories of Cinema* begins with the assumption that all films—from the standard Hollywood product to the most personal avant-

garde work—are inseparable from the social and economic conditions of their production, distribution, and reception. Therefore, James argues, the function of avant-garde film should be to make those conditions visible and open to the kind of critical analysis that could change them—and society—for the better. In his evaluation of avant-garde films, vision and visual aesthetics require little

discussion, except when they threaten to divert attention from the ideological implications of a filmmaker's work (as has happened, James believes, in Brakhage's case).

Undoubtedly films are products of the culture from which they emerge, or as James puts it, "Making films is a social and material act taking place in history."[18] But that fact should not diminish the value of examining the social role and individual experience of vision and the translation of vision into filmic expression. In fact, it should underline the importance of the questions about seeing asked by avant-garde filmmakers—and answered in the making of their films. Hence the principal emphasis of this book on human and cinematic vision and on the effort to turn film into "an art of vision."

Although avant-garde films frequently offer ways of seeing that are different from those provided by the dominant film industry and by our own everyday experience of normal vision, they are still authentic equivalents of "visual life." Their authenticity, however, requires support from studies of visual perception. To provide this support and demonstrate its relevance to the avant-garde's aesthetics of vision, I will approach the subject in three different ways, which might be characterized as technical-biological, historical-theoretical, and analytic-aesthetic. While each overlaps the others and may be referred to at any point in my discussion, the first figures most prominently in chapter 1, the second in chapters 2 and 3, and the third in the remaining four chapters.

Chapter 1 argues that the images of cinema and of vision derive from the same three basic elements: light, movement, and time. Because they have these elements in common, the technical functions of the cinematic apparatus and the biological functions of the human visual apparatus not only can be compared but can be made to confront each other through what I have called the dialectic of eye and camera. Although I refer to light moving in time as the essential common ground of vision and cinema, I am not taking an "essentialist" position, which holds that the making and perceiving of images is somehow free of cultural influences. In fact, the explicit purpose of chapter 2 is to examine the historical origins and social consequences of equating manufactured images with human vision. Central to that issue is the development of so-called Renaissance perspective

and its influence on the conventions of photographic and cinematic image making—conventions the avant-garde has challenged because of the ideological, perceptual, and aesthetic restrictions they impose on the cinematic image.

To complete that line of argument, chapter 3 examines one of the avant-garde's most significant departures from conventional assumptions about vision: Stan Brakhage's concept of "the untutored eye." After tracing the theoretical basis of the concept from the seventeenth century to the present, I argue that Brakhage successfully revived an aesthetics of vision that E. H. Gombrich and others have pronounced dead. By doing so, Brakhage gave the avant-garde its most thorough and convincing justification for replacing the practices of conventional cinema with modes of image making that are truer to "visual life" in its fullest sense.

How Brakhage put his theory into practice is the subject of chapter 4, the first discussion of the work of a single filmmaker. It is also the central and longest chapter of the book, because I find Brakhage to be the central, as well as the most prolific, contributor to the visual aesthetics of avant-garde film. Rather than attempt to cover all of Brakhage's films, however, I will examine only a few that represent various solutions he has found to the problem of translating vision into cinematic form.

The remaining chapters follow the same strategy of using aspects of visual perception to illuminate some of the thematic and formal concerns of a few of the best-known avant-garde filmmakers. Chapter 5 examines Kenneth Anger's special use of light. Chapter 6 explores the hallucinatory imagery of Jordan

Belson, James Whitney, and Paul Sharits. Chapter 7 traces the reciprocal relationship of perceptual and conceptual experience evoked by some of Michael Snow's major films.

As a whole, the book offers a series of studies (as its subtitle indicates), rather than a single, definitive statement on the visual aesthetics of avant-garde film. I have not attempted to include all the issues and filmmakers relevant to the topic, nor have I used visual criteria to create a canon of avant-garde films or a ranking of individual filmmakers. Instead, I have tried to show what kinds of issues arise and what types of approaches and insights become possible when vision is regarded as an aesthetic problem for which avant-garde filmmakers have found different but equally successful solutions.

My choice of filmmakers to discuss in more detail reflects several factors, not the least of which has been my pleasure in viewing and reviewing their films over many years. A less subjective factor is the recognition they have received as major figures in the history of avant-garde film

and, therefore, my assumption that many readers will be familiar with their work and at least the broad outlines of its critical reception. Other factors include the general availability of their films, with the exception of much of Belson's work (for matters related to the sources of films discussed in this book, see the Appendix); their expressed interest in the relationship of film and vision; and the differences in their styles of filmmaking, which allow me to illustrate a variety of responses to the avant-garde's "questions about seeing." They represent, in other words, a broad spectrum of responses to the dialectic of eye and camera.

Collectively, avant-garde filmmakers have turned that dialectical relationship into a positive, creative force; individually, they have tended to favor either the camera and the mechanical nature of the apparatus, or the eye and the range of human perceptions capable of being represented by the cinematic apparatus. Toward one end of the spectrum are Belson, Whitney, and Anger, whose films avoid direct reference to cinematic processes and machinery, despite the fact that all three (especially Belson) make extensive and sophisticated use of cinematic technology. Snow and Sharits, on the other hand, expose the mechanicalness of the medium and openly impose it on their cinematic images.

Brakhage tends to favor the eye, but he is also willing to give the camera its due. Thus, in *Metaphors on Vision* he refers to the camera as "the limitation, the original liar"; yet, three pages later he praises the camera for its

speed for receptivity which can slow the fastest motion for detailed study, or its ability to create a continuity for time compression, increasing the slowest motion to a comprehensibility. I am praising its cyclopean penetration of haze, its infra-red visual ability in darkness, its just developed 360-degree view, its prismatic revelation of rainbows, its zooming potential for exploding space and its telephotic compression of same to flatten perspective, its micro- and macro-scopic revelations.[19]

If Brakhage's work as a whole demonstrates an ultimate allegiance to the eye, this passage shows that he is capable of the kind of admiration for the camera that was virtually universal among the earliest avant-garde filmmakers.

The avant-garde filmmakers of the 1920s thought the camera superior to the human eye. Characteristic of the period is Jean Epstein's praise of the camera's "nonhuman analytical properties" which prevent it from being "weighted down by likings and dislikings, by habits and considerations [which we] can no longer perceive." Germaine Dulac described the

camera as "an eye more powerful than our own and which sees things we cannot see." Dziga Vertov pronounced the camera "more perfect than the human eye for the exploration of the chaos of visual phenomena that fills space."[20]

In their enthusiasm for the "mechanical eye," as Vertov called it, these filmmakers frequently overlooked the visual restrictions and cultural biases it imposed on the cinematic image—limitations that have been recognized by

later film artists like Brakhage and systematically analyzed by critics like Jean-Louis Comolli and Jean-Louis Baudry.[21] Although their bias in favor of the camera-eye did not prevent the first generation of avant-garde filmmakers from producing powerful works of visual art, it seems to have blinded them to the human eye's own capacity for perceptions as rich and meaningful as anything the camera's eye could produce. Probably Dziga Vertov went the furthest in regarding human vision as essentially passive and without significant insight until it perceived the world through a "mechanical eye."

"I see—I kino-see," wrote Vertov, and in *The Man with a Movie Camera* (1929), he symbolized the eye's subservience to the camera by superimposing an eye on the lens of a camera.[22] The eye appears to be "in" the lens and thus able to see only what the camera reveals. But as a visual metaphor, Vertov's camera-eye can be read in more than one way. Chapter 1 will offer a reading that proposes more similarities between human and cinematic vision than Vertov and his contemporaries were willing to recognize. Subsequent chapters will show how those similarities produce the creative conflict, or dialectic, of eye and camera that has so powerfully shaped the visual aesthetics of avant-garde film.

As a final introductory comment, I want to emphasize that *aesthetics* , in its original sense, derives from the Greek

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, "things perceptible to the senses." The film artists I discuss in this book have remained true to the original source and subject of aesthetics. Using light moving in time, they have translated the sense of sight into filmic art—not simply an art to be seen, but an art *of* seeing. How, why, and against what odds they have done so, are the principal matters under consideration here.

Chapter 1—
The Camera-Eye:
Dialectics of a Metaphor

It's an obsession, really, of the eye. He'd sell his own mother for a look.
—Gilette in Sidney Peterson's Mr. Frenhofer and the Minotaur

Long ago, I pointed to the lens and said the trouble was here!
—Picasso, conversation with David Douglas Duncan

1—

"Everybody who cares for his art, seeks the essence of his own technique," said Dziga Vertov.[1] This characteristically modernist "mystique of purity," as Renato Poggioli has called it, pervades the avant-garde tradition and produces the desire "to reduce every work to the intimate laws of its own expressive essence or to the given absolutes of its own genre or means."[2] A typical exponent of the essentialist position was Germaine Dulac, who wrote in 1927, "Painting . . . can create emotion solely through the power of color, sculpture through ordinary volume, architecture through the play of proportions and lines, music through the combination of sounds." Thus, Dulac argued, it is imperative for film artists "to divest cinema of all elements not particular to it,

to seek its true essence in the consciousness of movement and of visual rhythms."[3]

Probably the best known among the early candidates for cinema's "true essence" was Louis Delluc's *photogénie* . Jean Epstein declared, "With the notion of *photogénie* was born the idea of cinema art."[4] But Epstein also admitted, "One runs into a brick wall trying to define it."[5] The best description Delluc could come up with was, "[A]ll shots and shadows move, are decomposed, or are reconstructed according to the necessities of a powerful orchestration. It is the most perfect example of the equilibrium of photographic elements."[6]

The concept of *photogénie* simply did not get to the heart of the matter. It directed attention to the image—"the equilibrium of photographic elements"—but not to the properties or "elements" of the image itself. Not, in other words, to the "true essence" of cinema. Other avant-garde filmmakers and critics looked deeper and found cinema's basic principles in three interrelated elements: light, movement, and time.

"For cinema, which is moving, changing, interrelated light, nothing but light, genuine and restless light can be its true setting," said Germaine Dulac.[7] Louis Aragon called cinema "the art of movement and light."[8] And even the leading proponent of *photogénie* , Louis Delluc, wrote, "Light, above everything else, is the question at issue."[9] Coming closer to the present, we find Jonas Mekas declaring, "Our real material had to do with light, color, movement."[10] Stan Brakhage has called light "the primary medium" of film. "What movie is at basis is the movement of light," he has said. "As an art form really, the basis is the movement of light."[11] For Ernie Gehr, "Film is a variable intensity of light, an internal balance of time, a movement within a given space."[12] According to Michael Snow, "Shaping light and shaping time . . . [are] what you do when you make a film."[13] For Peter Kubelka, "Cinema is the quick projection of light impulses."[14]

Although Kubelka, among others, has insisted that movement is merely an illusion produced by the "quick projection of light impulses," some filmmakers regard movement as, in the words of Slavko Vorkapich, "the fundamental principle of the cinema art: [cinema's] language must be, first of all, a language of motions."[15] In a manifesto in 1922, Dziga Vertov called for "the precise study of movement," and added, "Film work is the art of organizing the necessary movements of objects in space." For Vertov, the recording of moving objects was less important than "organizing" their movement and if necessary "inventing movement of objects in space" through frame-to-frame and shot-to-shot relationships.[16] These relationships—or "intervals" in Vertov's terminology—are temporal as well as spatial. They are the basis of what Snow calls "shaping time." As Maya Deren has put it, "The motion picture, though composed of spatial images, is primarily *a time form* ."[17]

"Light, color, movement," "the movement of light," "the quick projection of light impulses," "light and time," "a time form"—such phrases reflect the specific interests of individual filmmakers but taken together they specify film's "true essence" in terms appropriate to the avant-garde's "mystique of purity": "light-space-time continuity in the synthe-

sis of motion," in Moholy-Nagy's neat formulation.[18] What is most significant for our present purposes is that *the same terms can be applied to visual perception* . The basic requirements for seeing are also light, movement, and time. As one researcher has put it, "The eye is basically an instrument for analyzing changes in light flux over time."[19] That succinct statement delineates a common ground for vision and film, and it points the direction I will take in seeking a perceptual basis for the visual aesthetics of avant-garde film.

When we look at the world around us, we do not, as a rule, see "changes in light flux over time." We see solid objects moving and standing still in a well-defined three-dimensional space (at least, that is what we see in the most focused, central area of our vision). Nothing would be visible, however, were it not for the "light flux" entering our eyes through the pupil and flowing over the photosensitive cells lining the back of our eyeballs. Experiments have shown that when the retinal cells receive a steady, unchanging light, when the stimulus is absolutely fixed and unvarying, the cells quickly "tire." They stop sending the information our brain needs to construct the visual world we see lying in front of our eyes.[20] Thus there has to be a "flux," a *movement of light* over the retinal cells; otherwise, we see nothing at all. (If the sources of light do not move, the eye's own movements will keep the light moving across the cells.) "All eyes are primarily detectors of motion," R. L. Gregory points out, and the motion they detect is of light moving on the retina.[21] Only by these changing patterns of illumination can the world outside our eyes communicate with the visual processes of the brain. From that communication emerges our visual world.

Since light moving in time is the common ground of vision and film, perhaps it was inevitable that avant-garde filmmakers seeking the "true essence" of their medium would hit upon the "essence" of vision as well. Avant-garde filmmakers, especially the filmmakers of the 1920s, did not necessarily make a conscious effort to equate the basic elements of cinema with the basic processes of visual perception. Whether they did so or not, their work has been influenced by an implicit equation between cinema and seeing that this chapter is devoted to making explicit.

The superimposed eye in the camera lens in Vertov's *The Man with a Movie Camera* (1929) and Man Ray's *Emak Bakia* (1926) is in fact an explicit depiction of that implicit equation. Less explicit references to the relationship of film and vision occur in many other images of eyes created by avant-garde filmmakers. What Steven Kovaks has called "the leitmotif

of the eye" in *Emak Bakia* can be traced throughout the history of avant-garde film.[22] To mention a few examples: the infamous sliced eyeball in *Un Chien andalou* (1928), the photograph of an eye operation in Paul Sharits's *T,O,U,C,H,I,N,G* (1968), the close-ups of Kiki's eyes in Léger's *Ballet mécanique* (1924), the oriental eye at the keyhole in Cocteau's *Blood of a Poet* (1930), the artist's escaped eyeball in Sidney Peterson's *The Cage* (1947), the Eye of Horus in Kenneth Anger's *Inauguration of the Pleasure Dome* (1954, revised 1966 and 1978) and *Invocation of My Demon Brother* (1969), and the "cosmic eye" created by swirling clouds of color in several of Jordan Belson's films. To end this potentially endless parade of avant-garde eyes are two especially pertinent examples: the extreme close-up of an eye at the beginning and end of Willard Maas's *Geography of the Body* (1943) and an eye super-imposed over a reclining woman near the end of Brakhage's *Song I* (c. 1964).

The eye in *Geography of the Body* alludes directly to the extremely close and (literally) magnified seeing that is the principal concern of that film—not the voyeur's secret sexual gratification but the explorer's fascination with the human body as terrain seen for the first time.[23] Brakhage's *Song I* also alludes to visual exploring, or what Brakhage would call the "adventure of perception," which should prompt all filmmaking. The eye in that film, which Guy Davenport has called "an overply, the flesh window," is seen *in* the world it sees, *as* it sees the world.[24] The Brakhagean eye is a participant-observer (perhaps the anthropologist rather than the explorer is the appropriate analogue). It refers specifically to the inseparability of seeing and filmmaking—as do Vertov's and Man Ray's images of the eye in the camera lens. As I pointed out in the Introduction, there are significant differences between Brakhage's emphasis on "the flesh window" of the human eye, and Vertov's and Man Ray's emphasis on the "mechanical eye" of the camera. But both make direct reference to the

metaphor of the camera-eye and more indirectly to film as (in James Broughton's phrase) "a way of seeing what can be looked at."[25]

To show that film is "a way of seeing," that it resembles visual perception in basic and specific ways, I will reexamine the metaphor of the camera-eye. Visualized directly through the superimposition of eye and camera lens, alluded to indirectly in many other variations on "the leitmotif of the eye," it is a metaphor so intrinsic to the visual aesthetics of avant-garde film that despite (or perhaps because of) its familiarity, it requires close, careful explication.
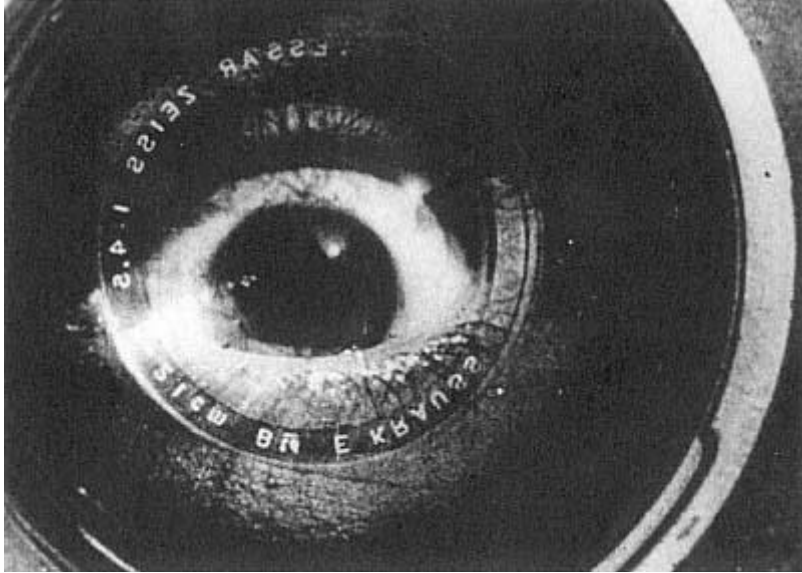
The eye and lens superimposed in
The Man with a Movie Camera
(Dziga Vertov).
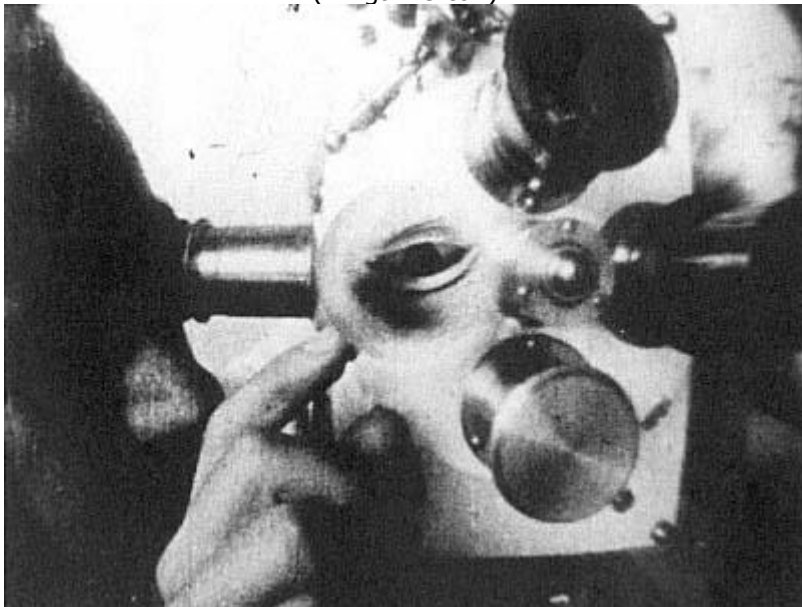
The eye replaces the lens in *Emak Bakia*
(Man Ray).
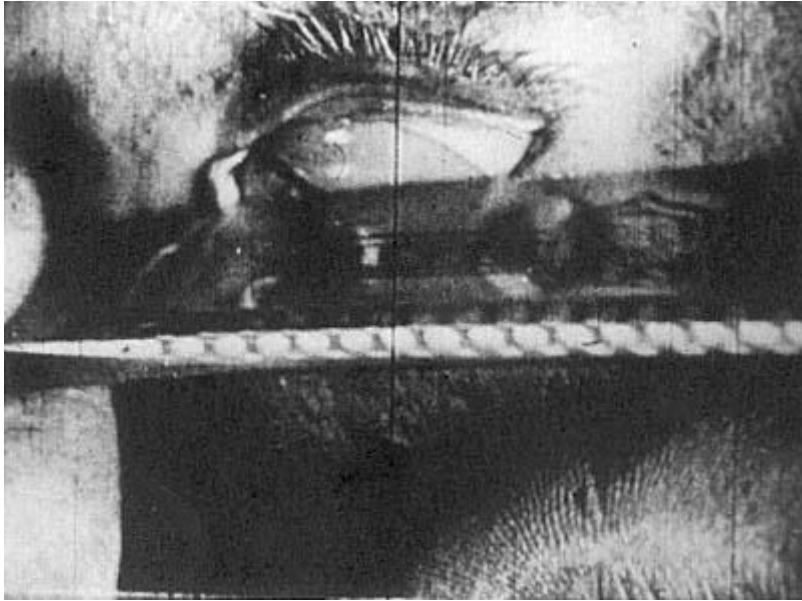
A razor slices the eye in *Un Chien andalou*
(Luis Buñuel and Salvador Dali).
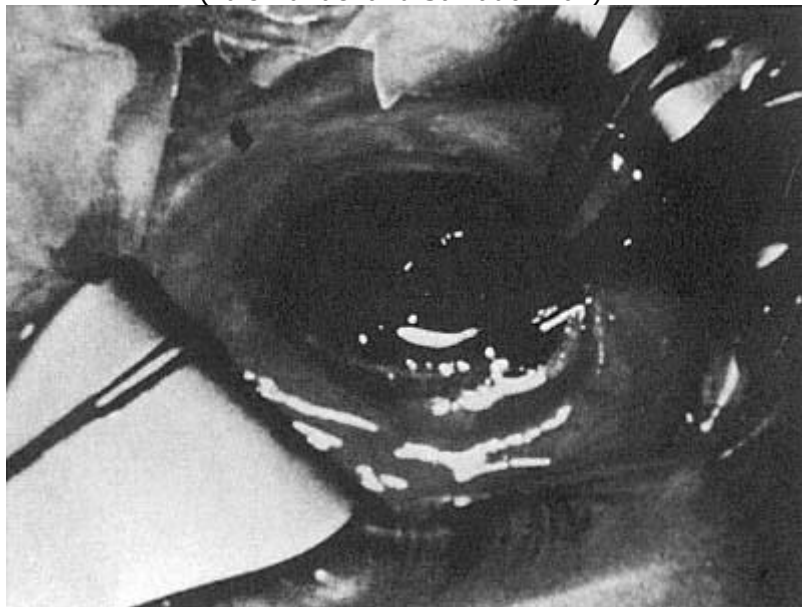
An eye operation in *T,O,U,C,H,I,N,G*
(Paul Sharits).

The eyes of Kiki, the Parisian model, in *Ballet mécanique*
(Fernand Léger and Dudley Murphy).

The eye at the keyhole in *Blood of a Poet*
(Jean Cocteau).
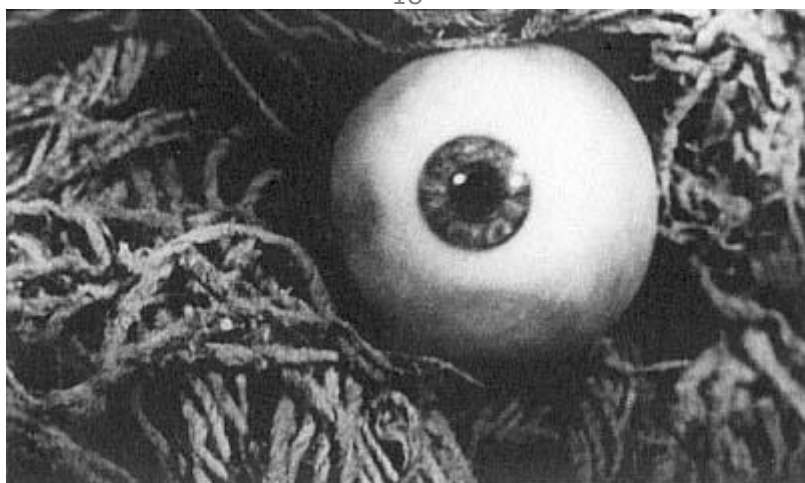
The escaped eyeball of an artist caught in a mop in *The Cage*
(Sidney Peterson).

The Egyptian Eye of Horus superimposed on
a human eye in *Invocation of My Demon Brother*
(Kenneth Anger).
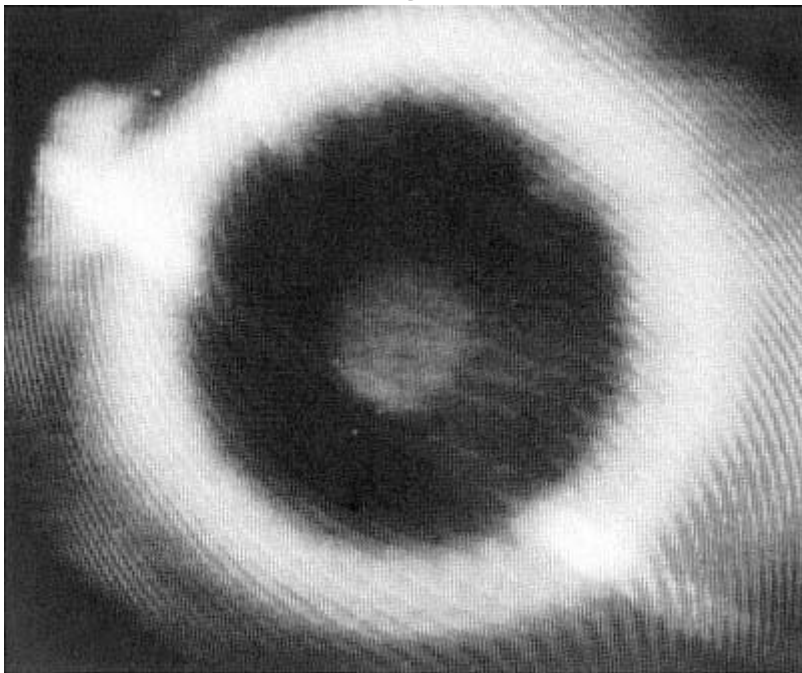
The "cosmic eye" in *Infinity*
(Jordan Belson, video version).
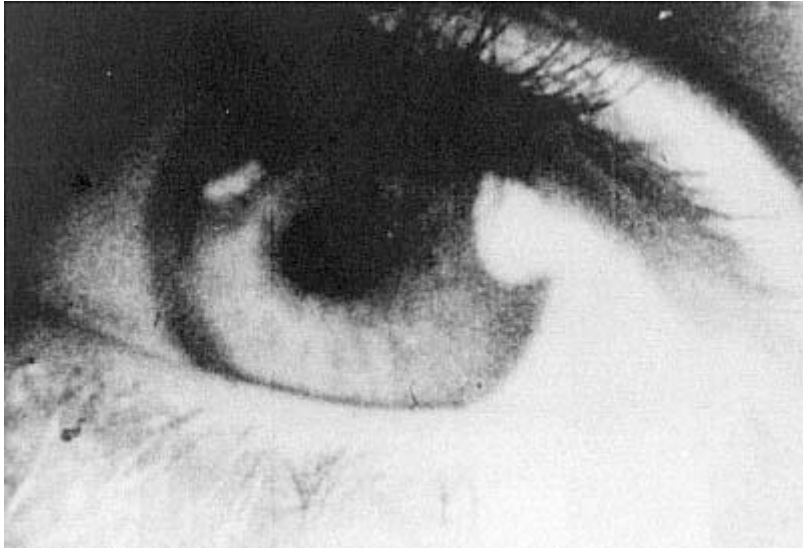
The magnified eye in *Geography of the Body*
(Willard Maas).

The superimposed eye in *Song I*
(Stan Brakhage).

2—

The metaphor of the camera-eye is constructed of synecdoches. That is to say, the eye and the camera are parts standing for the whole of their respective visual apparatuses. Vision is no more a product of the eye alone than pictures (especially the "moving pictures" of cinema) are made by the camera alone. In each case, what we see is the result of complex processes that only *begin* in the eye and the camera. No doubt it is because they house the beginnings of their respective ways of seeing that the eye and the camera have acquired their synecdochic weight. They are the outermost extensions of visual systems whose other structures and functions are hidden inside the skull and inside film labs, editing rooms, and projection booths. Even the crucial light-receptors of each system (the retina and the film) are hidden from view. An analysis of the camera-eye metaphor may properly begin with the eye and the camera per se, but if it is to demonstrate the metaphor's relevance to the visual aesthetics of avant-garde film, it must go on to seek other, less apparent correspondences between the two visual systems.

The classic essay on the subject is George Wald's "Eye and Camera," published in *Scientific American* in 1950. Wald first asserts, "Today every schoolboy knows that the eye is like a camera," and summarizes these likenesses as follows:

In both instruments a lens projects an inverted image of the surroundings upon a light-sensitive surface: the film in the camera and the retina in the eye. In both the opening of the lens is regulated by an iris. In both the inside of the chamber is lined with a coating of black material which absorbs stray light that would otherwise be reflected back and forth and obscure the image.[26]

Wald goes on to point out similarities in the light-sensitivity of the film and the retina. Just as a fine-grained, "slow" film is designed for high intensities of light and a more coarsely grained, "fast" film for low intensities of light, so the retina has two kinds of receptor cells: the cones, which operate in bright light and provide the more sharply defined details of our visual world, and the rods, which work at lower light levels and are the source of the coarser, less sharply defined details in the peripheries of our visual world.

Moreover, the cones and rods are on the ends of minute stalks that respond to the light's intensity, so that when the light is dim, the rods are pulled forward and the cones pushed back; when the light is bright the cones move forward and the rods draw back. As Wald says, "One could scarcely imagine a closer approach to the change from fast to slow film in a
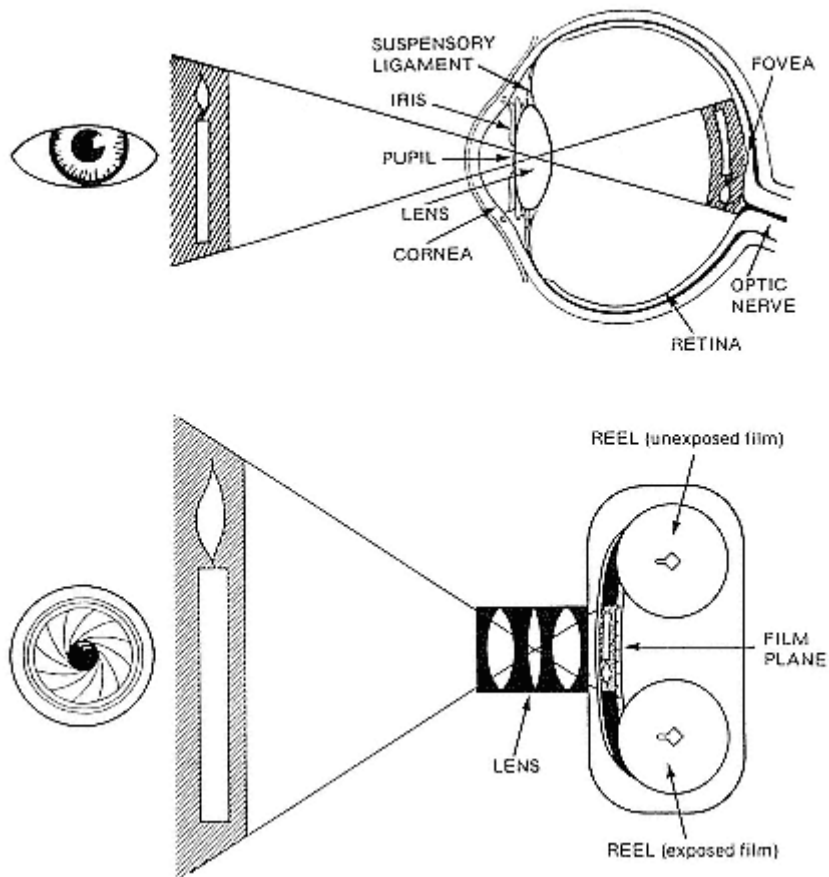
Comparable structures and functions of the camera and the eye
(adapted from George Wald, "Eye and Camera,"
Scientific American , July 1950).

camera." In subsequent layers of the retina, according to more recent research by Frank S. Werblin, the bipolar cells emphasize high contrast in the retinal image, while the amacrine and ganglion cells moderate contrasts. "It is as if," Werblin writes, "a camera system could switch automatically from a high-contrast film to a low-contrast film when it encountered a rapidly changing or a very contrasty scene."[27]

For Wald, the retina and photographic film offer another kind of analogy, because of their chemical response to light. The rods contain a pigment, rhodopsin, that bleaches in the light and is resynthesized in the dark. This led the nineteenth-century physiologist Willy Kühne to devise an experiment in which he was able to take a picture with the living eye of a

rabbit. First, the rabbit's head was covered to allow rhodopsin to accumulate in the rods. Then it was uncovered and held so that it faced a barred window. After a three-minute "exposure," the animal was killed, its eye removed, and the rear half containing the retina "fixed" in an alum solution, so that the bleached rhodopsin could not be resynthesized. "The next day," Wald reports, "Kühne saw, printed upon the retina in bleached and unaltered rhodopsin, a picture of the window with a clear pattern of its bars."

Wald's own variation on this experiment was to extract rhodopsin from cattle retinas, mix it with gelatin on celluloid, expose it to a pattern of black and white stripes, then "develop" it in darkness with hydroxylamine. The result was a "rhodopsin photograph" showing the same black and white pattern. Thus, just as exposure to the light produces a "latent image" in a film's emulsion, so, Wald argues, "light produces an almost invisible result [on the retina], a latent image, and this indeed is probably the process upon which

retinal excitation depends. The visible loss of rhodopsin's color, its bleaching, is the result of subsequent dark reactions, of 'development.' "It is now known that the cones also contain rhodopsin-like pigments that make color vision possible, which leads John Frisby to write, "So really the rods and cones are two distinct light-sensitive systems packaged together into a single 'camera'— the eye."[28]

If the vertical bands of light and dark gray make one think of the barred window that left its lasting impression on the retina of Kühne's rabbit, it is an appropriate—if somewhat ironic—association, so long as one remembers that *neither image duplicates actual vision* . They are simply chemical traces of rhodopsin's response to the "light flux" that reaches the retina from the outside world; they are images of "the process upon which retinal excitation depends," as Wald put it. Nevertheless, Wald's and Kühne's experiments show the eye to be more like a camera, and seeing more like photography, than is often recognized. They strengthen the metaphor of the camera-eye by grounding it in processes that can be scientifically verified. In Wald's words, "The more we have come to know about the mechanism of vision, the more pointed and fruitful has become its comparison with photography."

As convincing as that may sound, it is not a view all scientists of vision share. In *Handbook of Perception* R. M. Boynton offers a pointed and thorough rebuttal:

The eye most emphatically does not *work* just like a camera, and the differences are worth discussing. The eye is a living organ, while the camera is not. In a camera, light passes through the image-forming optics of high refractive index, and then back again into air before striking the film plane. In the eye,

high-index media are encountered as light enters the eye at the outer surface of the cornea, but the light never again returns to air. The control of pupil size begins with the action of light upon the identical photoreceptors that initiate the act of vision, while the camera's photoelectric analog, when there is one, is located so that the light falling upon the photocell is *not* affected by the size of the opening in the iris diaphragm. The lens surfaces in most cameras are sections of spheres, to which an optical analysis developed for spherical components can properly be applied. There is no spherical surface anywhere in the eye. The camera lens is homogeneous in its refractive index (or at most contains a few such distinct elements, each of which has this property). The lens of the eye is layered like an onion, with the refractive index of each layer differing slightly from the next. Cameras have shutters and utilize discrete exposures, either singly or in succession. The pupil of the eye is continuously open. Cameras must be aimed by someone; the eye is part of a grand scheme which does its own aiming. Images produced by photographic cameras must first be processed and then viewed or otherwise analyzed; the image produced upon the retina is never again restored to optical form, and the mechanisms responsible for its processing are perhaps a billionfold more complex than those used in photography.[29]

The list of differences "could be expanded," as Boynton says, but it is surely long enough to discourage anyone from turning to literal-minded scientists for validation of the camera-eye metaphor.

The fact that the eye does not work "just like a camera" is indisputable, but it is also irrelevant, since the significant similarities between the two are metaphorical, not literal. Boynton's effort to discredit the camera-eye metaphor is useful, however, for several reasons. First, it specifies the basic difference underlying the likenesses implied by the metaphor. The difference is between a machine and, in Boynton's words, "a living organ"—between Vertov's "mechanical eye" and Brakhage's "flesh window." It is the basis of the dialectical relationship of eye and camera, from which the visual aesthetics of avant-garde film have emerged.

Second, Boynton repeats a common objection to equating the camera and the eye when he emphasizes the difference between the photographic image and the retinal image. It is true that the retinal image is "never again restored to optical form" and is nothing more than a stimulus for retinal cells at one of the earliest stages in the total visual process. What must be stressed, however, is that the production of an optical image in the camera and in the eye, though essential to both visual processes, is not in itself the basis of their most significant resemblances. Light moving in time—not images—is the "essence" they share.

A third point arises from Boynton's critique of the camera-eye metaphor. Like virtually all commentators on the camera and the eye, Boynton

implies that the photographic image is the visible equivalent of the image cast by the lens on the film plane of the camera. In still photography this is more or less true (allowing for the inevitable differences created by the chemistry of processing and printing photographs), but in cinema, it is not. What the film viewer sees are not images on *film* but images projected on a *screen* . These images are created by light moving in time, and therefore they much more closely approximate the sources of seeing than do the images fixed in the emulsion of photographic film.

Cinematic images partake of the same "optical flow" described by Gunnar Johansson: "The optical flow of images into the viewfinder of a camera (or into the camera itself when the lens is open) corresponds to the optical flow impinging on the retina during locomotion."[30] In fact, since the eyes are always in motion, the image falling on the retina is always flowing over the retinal cells. Of course, cinematic images can not reproduce the same "optical flow" that entered the camera. There are too many intervening steps to permit the original "optical flow" to emerge from the projector unchanged (not to mention the fact that cinematic images may be made without the use of a camera at all). They can, however, represent the same kind of "flow" that impinges on the retina, the only difference being that their "flow" is shaped by the filmmaker through the materials and processes of the cinematic apparatus. Thus the camera-eye metaphor continues to be valid, if one takes into account the actual nature of the film image and conditions of film viewing.

A fourth point is suggested by Boynton's sentence "Cameras must be aimed by someone; the eye is part of a grand scheme which does its own aiming." The camera-eye metaphor should remind us that the camera, too, is "part of a grand scheme" that controls the way it is "aimed" at the world. Whether the camera is held in the hands of Stan Brakhage and "aimed" by Brakhage's intuitive response to his feelings and immediate environment, or attached to a motorcycle's handlebars and "aimed" by Vertov's cameraman as he steers around an inclined track, or perched atop Michael Snow's elegant remote-controlled machine and "aimed" at the Québec landscape by electronic impulses scripted by Snow—the camera is integrated in "a grand scheme which does its own aiming." Metaphorically, it is like the eye in its own "grand scheme" of muscles, tissues, nerves, and brain cells. Here, in fact, is another way of comparing the eye and the camera as synecdoches representing a whole—the "grand scheme"—of which each is a particularly conspicuous but totally integrated part.

Despite the objections raised by Boynton, then, the camera-eye meta-

phor not only continues to make sense but gains strength and pertinence as it is given closer scrutiny—so long as (1) it is understood to be a metaphorical juxtaposition, not a literal equivalence, producing a dialectical relationship of mechanical and organic structures and functions; (2) its implied similarities between the retinal image and the photographic image are recognized to be less relevant than its allusion to the flow of light essential to both visual and cinematic perception; (3) it is treated as a comparison of interrelated parts and processes constituting the "grand schemes" of visual and cinematic perception.

3—

The camera's "grand scheme" includes taking in the light (shooting), converting the light to images on film (developing), arranging the images in a meaningful order (editing), reproducing that order in combination with all other visual effects (printing), and reconverting the images into a "light flux" (projecting),

from which the viewer's own visual system constructs the cinematic image. The original "light flux" entering the camera goes through a series of interactions and transformations, so that the light emerging from the projector will take on the shapes and rhythms imposed by the total filmmaking apparatus (in which the filmmaker plays an important though not necessarily the chief role). Only in this extended sense can one properly call the cinematic image a representation of what the camera "sees."

Only in an equally extended sense can one refer to what the eye "sees." The visual world is a product of the brain. The brain's building materials are electrical impulses traveling through millions of cells in a network connecting many different parts of the brain. No single line of cause-effect events (like those that constitute the camera's "grand scheme") can be traced from the eye to the completed visual world. Many parts of the brain contribute to the eye's "grand scheme," and at least some of those parts communicate with each other in an order that scientists have been able to map.

A small area at the back of the brain called the visual association cortex seems to pull together all the information supplied by other parts of the brain. Data on color, motion, and three-dimensionality probably come from the immediately adjacent prestriate cortex which has already received information on shape, size, and spacial orientation from the striate cortex. The so-called hypercolumns of cells in the striate cortex receive and coordinate data arriving (after several intermediate steps) from the

optic nerves, whose ganglion cells make up the last of four layers of cells in the retina. These cells have already begun to make preliminary discriminations between lighter and darker areas and their movements. Their information comes from impulses produced by the rods and cones as they respond to the retinal image. The rods and cones, as we have already seen, have their own specialized functions, the most obvious being the rods' response to the movement of light and the cones' response to the wavelengths (i.e., color) of the light. Although some visual information also comes from nerve cells monitoring the movements of the eyes, it is reasonably accurate to say that the visual process begins when the rods and cones respond to the light moving over them.

(At this point, it should be remarked parenthetically that all visual activity is not initiated by light falling on the rods and cones. Much can be seen when the eyes are closed. There are phosphenes and other visual phenomena produced by the internal workings of the visual system, as well as dreams and visions that are seen as vividly as anything the eyes encounter in the external world. Similarly, not all cinematic images begin in the camera. Film may be exposed directly to the light, and it may be scratched, painted, or otherwise invested with shapes and colors that the projector's light will cast on the screen. Within both "grand schemes," in other words, there are alternative sources of seeing, about which much will be said in the chapters that follow. For the moment, one need only note that the "grand schemes" underlying the camera-eye metaphor do not necessarily require the presence of either a camera or an eye.)

Because light rays entering our eyes cross at the pupil, they produce a retinal image that is upside down and backwards, relative to the visual world as we perceive it. And because the eye moves—not only in large, intermittent movements, but also in minute and continuous jumps and tremors—the image darts this way and that across the retina. The retinal image is fluid and unstable; yet we normally perceive a solid and stable visual world. The retinal image spreads across a curved, two-dimensional surface; whereas, the visual world fills three-dimensional space. These transformations of retinal image into visual world are products of the eye's neural network in the brain.

Actually, the network begins in the eye itself. The cells of the retina develop from the same embryological tissue that produces the brain, and they function just like other brain cells. By surfacing in the eye, the brain makes

direct contact with the "light flux." As the retinal cells make their preliminary discriminations, the brain is beginning to "think" about the visual world it will produce. The visual world is the completed "thought."

Although it seems simply to be there, in front of our eyes, the visual world is, in fact, the product of what R. L. Gregory calls the "internal logic" of the brain's visual system, a system based on collecting, comparing, and drawing conclusions from data that is both "stored" in the brain and constantly arriving for the first time via the retinal image.[31] This process, which is still poorly understood, is not nearly as linear and hierarchical as my brief summary may seem to imply, and it is composed of nothing but electrical impulses traveling along millions of neural pathways at the same time. Shape, size, depth, movement, color, texture—all the components of the visual world are really millisecond-by-millisecond configurations of electrical activity in the brain.

4—

Scientists of vision are careful to distinguish between *what* we see and the *sources* of our seeing. In one sense the source is the external world from which light flows to the eyes. In another sense, the source is the light itself, or the retinal image formed by the light. In still another sense, the source is the combination of electrochemical computations made by the millions of cells throughout the visual system of the brain. These sources produce what we see, but we do not see them. We see "an internal representation," as David Marr puts it, of what the eye's "grand scheme" has been able to derive from its encounter with "the light flux over time."[32]

Likewise, what we see in cinema is the result of a complex process that begins with the external—or profilmic—world from which light streams into the camera's lens. Like the eye, the camera uses optical principles to form an image and photochemical principles to make that image available to subsequent cinematic processes. After that point, however, the camera's "grand scheme" operates quite differently from the eye's "grand scheme." In the latter, the photochemical transformation of the image on the retina produces changes in the voltage of the retinal cells. Those changes cause electrochemical impulses to pass from cell to cell throughout the brain's visual system until the final constellation of impulses creates what we see as the visual world.

In the camera, the incoming light changes the chemistry of the film's emulsion, producing a latent image that is made visible by chemical processing before it continues on to subsequent stages of analysis, modification, rearrangement, and reimaging within an optical-chemical system, not (as in the brain) a chemical-electrical one. Whereas the brain cells

complete the eye's "grand scheme" without further reference to an image, the collective "brain" of the camera's "grand scheme" continues to work with images until the projector turns them back into the "light flux" received by the viewer's eyes.

The camera-eye metaphor should not be allowed to blur these distinctions, but neither should it be dismissed because of them. Clearly, its relevance varies according to which aspects of the two "grand schemes" are being compared. While the metaphor suits the light-gathering and image-forming capacities of the eye and the camera, it seems to have little relevance to their subsequent production of the visual world and the cinematic image. It can be applied, however, to their over-all function, which is to invest the originating "light flux" with a final, visual form. Neither "grand scheme" is simply a series of relay stations through which the external world sends along visible replicas of itself. Both schemes subject the light to mediating and

transforming processes built into their respective visual systems. Looking at visible objects is not the basis of the camera-eye metaphor; rather, it is creating visual representations out of light moving in time.

The dialectic of eye and camera finds its synthesis, then, in the viewer's perception of these visual representations emerging from the "grand scheme" of cinematic production. While this is true of all film viewing, only avant-garde films call attention to that dialectical process and treat its synthesis as an aesthetic problem. As subsequent chapters will show, different avant-garde filmmakers have resolved that problem differently, but all in their own ways have responded to the dilemma raised in the two quotations that serve as epigraphs to this chapter.

In Sidney Peterson's *Mr. Frenhofer and the Minotaur* (1949), the model Gilette says of her lover, Nicolas Poussin, "It's an obsession, really, of the eye. He'd sell his own mother for a look." In an afterword to *Prismatics: Exploring a New World* , David Douglas Duncan recalls that while he was photographing Picasso in his studio, the artist said to him, "Long ago, I pointed to the lens and said the trouble was here!"[33] In these brief quotations we have the visual artist's obsession with seeing (probably the most extreme form of what Arnold Gesell has called "the visual hunger of cultural man") juxtaposed with the artist's deep suspicion of the camera and by implication the photographic process as a whole, because of its dispassionate and manufactured ways of seeing.[34]

Although both sentiments are attributed to painters, their relevance to avant-garde filmmakers should be apparent by now. The "leitmotif of the eye" testifies to the avant-garde's obsession with seeing. The camera-eye

metaphor implies that film artists can satisfy that obsession through the apparatus of cinema. But to do so they must confront and resolve the "trouble" in the lens. Otherwise, the camera will shape their vision to suit its own limited ends. To appreciate the strategies avant-garde filmmakers have employed on behalf of their "obsession of the eye," we must take a closer look at the "trouble" Picasso pointed to. Where did it come from? How did it get built into the camera? What does it imply for a visual aesthetics of film? The next chapter will try to answer those questions.

Chapter 2—
The Cinematic Image as a Visualization of Sight

It is impossible to express the beauty in words. The art of painting is dead, for this is life itself, or something higher, if we could find a word for it.
—Constantijn Huygens, after seeing an image in a camera obscura (1622)

The visual systems represented by the eye and the camera receive "the light flux over time," and transform it into the visual world and the cinematic image. In the case of the eye, the transformation is organic, a biological necessity. In the case of the camera, it is mechanical and a cultural preference—the product of machines and technological processes created to satisfy socially determined expectations about what an image of the world should look like. Those expectations rest on assumptions about image making and visual perception that predate the invention of cinema by several centuries. This chapter will place those assumptions in their historical context, show why they have imposed unduly restrictive conventions on the making and viewing of cinematic images, and indicate some of the ways avant-garde filmmakers have rebelled

against them to make cinematic images truly responsive to visual perception "in its deepest sense."

1—

For the recurring relationships between image making and visual perception, I have coined the expression "visualization of sight" and applied it in two different but clearly related senses. In its primary sense it refers to pictures ("still" or "moving," drawn or painted or photographed) that are intended to be equivalents of our actual experience of seeing. This is what Joel Snyder has called "picturing vision."[1] The softly glowing, barely distinguishable shapes in Monet's *Water Lilies* and the sharply focused,

immediately recognizable images of human forms and architectural spaces in Raphael's *The School of Athens* are both visualizations of sight because both represent what their makers believed to be pictures of what the eye actually sees.

In its secondary sense, visualization of sight refers to diagrams, models, and instruments of various sorts that reveal something about how sight occurs, whether or not they were originally intended for that purpose. In one way or another they give visible form to some aspect of the processes that produce sight. Let us begin with examples of this kind of visualization of sight, because in them we can see how models of *how* we see have influenced the efforts to picture *what* we see.

Our first example is familiar to anyone who has studied visual perception. It shows a schematized eyeball and a man scrutinizing the retina from the darkness behind the eye. It first appeared in René Descartes's treatise on optics and vision, *La Dioptrique* , published in 1637, and was intended to illustrate the formation of the retinal image. In Descartes's illustration the retinal image is produced by light rays entering the eye through the pupil and converging on the retina, where they form an inverted image of the sources outside the eye. Granting its schematic simplifications, the illustration is essentially accurate, which is why, presumably, it continues to appear in modern works on visual perception.

But what is the reason for including that man in the dark staring at the back of the eyeball? He has nothing to do with the formation of the retinal image, and we know Descartes did not subscribe to the naive theory that some sort of homunculus in the brain looks at the images on the retina and somehow lets the mind know what it sees there. Who is that man, then, and what is he doing?

One answer is fairly simple. He represents anyone who might perform an experiment that was first carried out by the German priest Christopher Scheiner in 1619, which Descartes describes in detail in *La Dioptrique* . The eye of a recently dead human or large animal, such as an ox, is carefully removed, and the membranes covering the back of the eye cut away without allowing the vitreous humor to spill out. Then a piece of thin paper or eggshell is placed where the membranes have been removed and the eye inserted into the hole of a special shutter so that the pupil faces the outdoors and the back of the eye is in a totally darkened room. "When this has been done," Descartes writes, "if you look at that white body . . . [the area where paper or eggshell has replaced the retina], you will see there, not perhaps without admiration and pleasure, a picture which will represent in natural perspective all the objects which will be outside of it."[2]
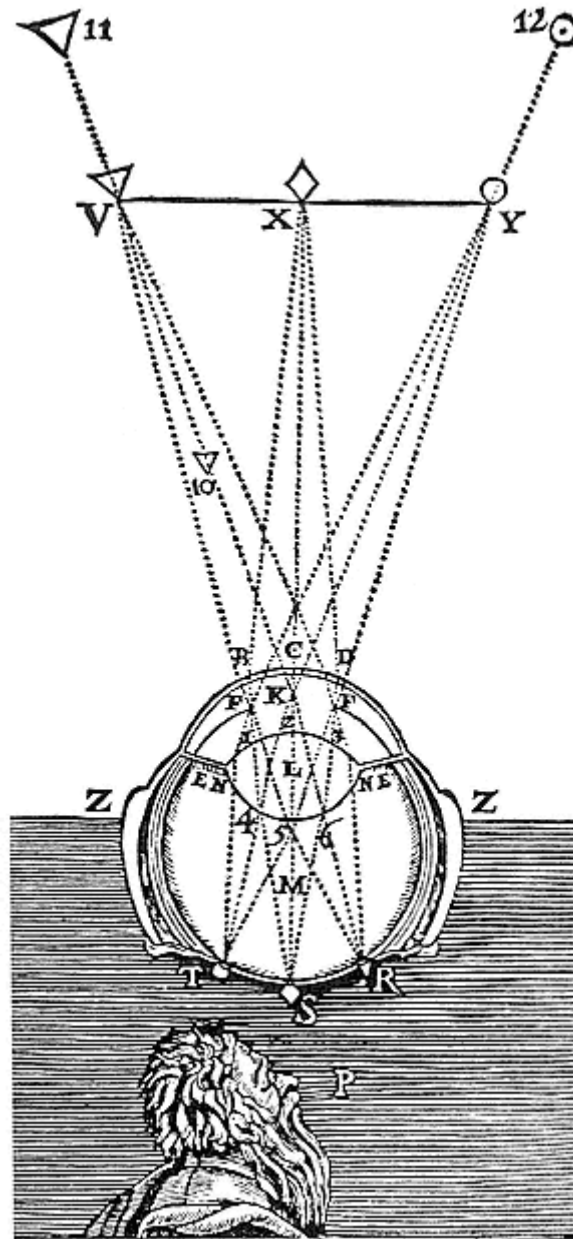
The formation of the retinal image,
as illustrated in René Descartes's *La Dioptrique* (1637).

Descartes goes on to note that by squeezing the eyeball slightly and thereby making it a bit longer, one can adjust the focus for objects brought nearer to the eye.

From a modern point of view, the eyeball is like a miniprojection system with adjustable focus and a built-in rear-projection screen on which images of the outside world appear for the "admiration and pleasure" of its one-person audience in the darkened room. From Descartes's point of view, however, the chief value of the experiment was to demonstrate empirically that "the objects we look at do imprint very perfect images on the back of our eyes."[3]

When Descartes wrote *La Dioptrique*, the retinal image was still a new concept in theories of visual perception, its existence having been documented only thirty-three years earlier in Kepler's *Ad Vitellionem Paralipomena* (1604). Although Kepler left it to others to figure out what happens beyond the retina, he established the retinal image as the nexus between the world of light and

the dark processes of the brain from which our perception of the visual world emerges.

In ancient and medieval theories of vision, there was no intervening "picture." The eyes simply served as conduits for rays (of what nature and from what source were questions never satisfactorily answered) that permitted the brain to perceive the world. Ironically, perhaps, modern theories have come back to a somewhat similar view. As mentioned in chapter 1, the retinal image has been relegated to a relatively minor role in seeing, compared with the "grand scheme" of electrochemical impulses that begin with the play of light on the rods and cones and culminate in the brain cells that give us the sensation of sight. Nevertheless, Kepler's theory and the experiments of Scheiner and Descartes correctly emphasized the fact that a picture (or more precisely a nearly infinite sequence of pictures) stands between the world and our perception of it.

Kepler, in fact, used the term *pictura* to describe the image on the retina, and this was, as David C. Lindberg has pointed out, "the first genuine instance in the history of visual theory of a real optical *image* within the eye—a *picture* , having an existence independent of the observer, formed by the focusing of all available rays on a surface."[4] Lindberg's way of putting it certainly suggests analogies with the images in the modern photographic camera, but of course a much older camera, the *camera obscura* , fits the analogies equally well.

Originally the *camera obscura* was a dark room with a small hole in the roof or wall, through which an image from outside the room fell on a wall or screen opposite the hole. It seems to have been used primarily for

observing eclipses of the sun and for conducting experiments in optics. With more sophisticated versions of the *camera obscura* came a greater interest in the images themselves, and that interest led to the recognition that the *camera obscura* and the eye have certain image-making properties in common. Leonardo da Vinci appears to have been the first person to draw analogies between the *camera obscura* and the eye—which means that Leonardo's long list of accomplishments should include the invention of the camera-eye metaphor.[5]

Leonardo may have invented the metaphor, but Descartes more fully explored its implications. In *La Dioptrique* he argues that the images on the retina are like "images that appear in a chamber, when having it completely closed except for a single hole, and having put in front of this hole a glass in the form of a lens, we stretch behind, at a specific distance, a white cloth on which the light that comes from the objects outside forms these images." Descartes then compares the *camera obscura* to the eye: "The chamber represents the eye; this hole, the pupil; this lens, the crystalline humor, or rather, all those parts of the eye which cause some refraction; and this cloth, the interior membrane, which is composed of the extremities of the optic nerve [the retina]."[6] His experiment with the eyeball, Descartes explains, should make "more certain" that analogies between the *camera obscura* and the eye are accurate and appropriate.

Thus, by the early seventeenth century, the *camera obscura* had been recognized as an image-making instrument analogous to the eye. Both were dark chambers with a small aperture opposite a "screen" that received images produced by light passing through the aperture. (Although a lens was commonly present, it was not essential for the production of an image.) Both produced images that could be observed from the darkness behind the "screen," and because the images in both cases were two-dimensional projections of the three-dimensional world they had a distinctly pictorial quality.

Because of their pictorialness, the projected images had the potential of being transformed into literal pictures. Leonardo notes that when the images are received on a very thin white paper and viewed from behind, they appear in their "proper forms and colors," and "will seem actually painted on this

paper."[7] It is not known who took the first step from merely observing that pictorial quality to actually reproducing it, but by the middle of the seventeenth century a number of ingenious devices had been developed for making pictures directly from the projected image on the translucent screen of the *camera obscura* .[8] Whether used for artistic

A small, portable *camera obscura* designed by Robert Hooke (1694). From *Philosophical Experiments and Observations* (1726).

purposes or simply as visual records of places and things, these copies implicitly emphasized the pictorial qualities of the image in the *camera obscura* and by analogy the same pictorial qualities of the image on the retina.

As early as 1637 (the same year as the publication of Descartes's *La Dioptrique*) Pierre Hérigone, a French mathematician, made the pictorialness of the retinal image explicit. "Vision," he wrote, "is the percep-

tion of the image of the object painted on the retina."[9] The notion of an image "painted on the retina" became a commonplace of seventeenth- and eighteenth-century theories of visual perception. At the same time, it was argued that since we do not normally perceive the world as a two-dimensional image flitting over a curved surface, there must be other, nonvisual factors such as touch, kinesthetic experience, memory, and other thought processes that contributed to our perception of a solid, stable, three-dimensional world.[10] In other words, the very qualities that draw attention to the pictorialness of the retinal image and suggest analogies between the picture

"painted on the retina" and the picture in the *camera obscura* are also the qualities that distinguish the picture from the visible world it is a picture of.

A way out of that paradoxical situation was offered by the theory and practice of pictorial perspective, in which space as depicted is intended to represent space as perceived in the everyday visual world. Descartes had noted that the image on the simulated retina of the eyeball appeared "in natural perspective," and many people commenting on the images in the *camera obscura* had said the same thing. For example, Descartes's contemporary Daniel Barbaro alled the *camera obscura* a "natural means for showing perspective" and concluded a long description of the *camera obscura* by remarking, "Seeing, therefore, on the paper the outline of things, you can draw with a pencil all the perspective and shading and coloring according to nature."[11] By the time of Descartes and Barbaro, it was commonly assumed that since nature is three-dimensional, the rules of perspective offered a natural means of representing the three-dimensionality of the real world on the two-dimensional plane of a picture. This assumption seemed to be supported by scientific evidence as well as aesthetic practice. It also carried significant if less obvious ideological implications, which helps to explain why it exerted so much influence on visualizations of sight—and why, therefore, we must examine the specific mechanisms of that influence in painting, photography, and filmmaking.

2—

In actual practice pictorial perspective is a rather unscientific mixture of theory, experiment, and artistic convention, and I will go no further into the subject than seems absolutely necessary to demonstrate the role played by perspective in the presumed correspondences between visual perception and image making. For this purpose, the brief definition of

perspective offered by William Ivins in *Art and Geometry* is sufficiently precise and uncontroversial:

Technically, [perspective] is the central projection of a three-dimensional space upon a plane. Untechnically, it is the way of making a picture on a flat surface in such a manner that the various objects represented in it appear to have the same sizes, shapes, and positions, *relatively to each other* , that the actual objects as located in actual space would have if seen by the beholder from a single determined point of view.[12]

From the Italian Renaissance onwards, artists learned to envision that plane or flat surface as being like a plate of glass or even an actual window on which could be seen a proportionately scaled-down replica of the things in front of the glass. In Leonardo da Vinci's words, "Perspective is nothing else than the seeing of an object behind a sheet of glass, smooth and quite transparent, on the surface of which all the things may be marked that are behind this glass; these things approach the point of the eye in pyramids, and these pyramids are cut by the said glass."[13] What the artist does, in principle, is copy the image produced where the glass intersects the "pyramids," duplicating (to the degree his or her materials and skill permit) the exact shapes, colors, and shading seen there. Or as Alberti puts it, "A painting will be the intersection of a visual pyramid at a given distance, with a fixed center and certain position of lights, represented artistically with lines and colors on a given surface."[14]

Leonardo and Alberti (like most Renaissance theorists of perspective) conflated the perceptual and the purely optical aspects of perspective.[15] They talked about images as if they were explaining concepts in geometry and mathematics. Vision became a question of "lines" forming "pyramids" that converged on a "point" in the eye, and painted pictures were simply larger versions of the picture produced by the same "pyramid" within the eye itself. Thus, the rules of perspective and vision seemed to complement each other and in both cases rested upon the principles of geometry and optics.

This meant that illustrations explaining the theory and practice of perspective were, at the same time, explanations of vision. They were, in effect, visualizations of sight that revealed—unintentionally—that a too literal application of the theories of perspective imposes peculiar limitations on understanding vision as well as on the possibilities of image making. The eye of the observer (the artist in this case) had to be an absolutely fixed point toward which all visual rays converge. The rays are represented with lines connecting the eye with the object of its regard, and
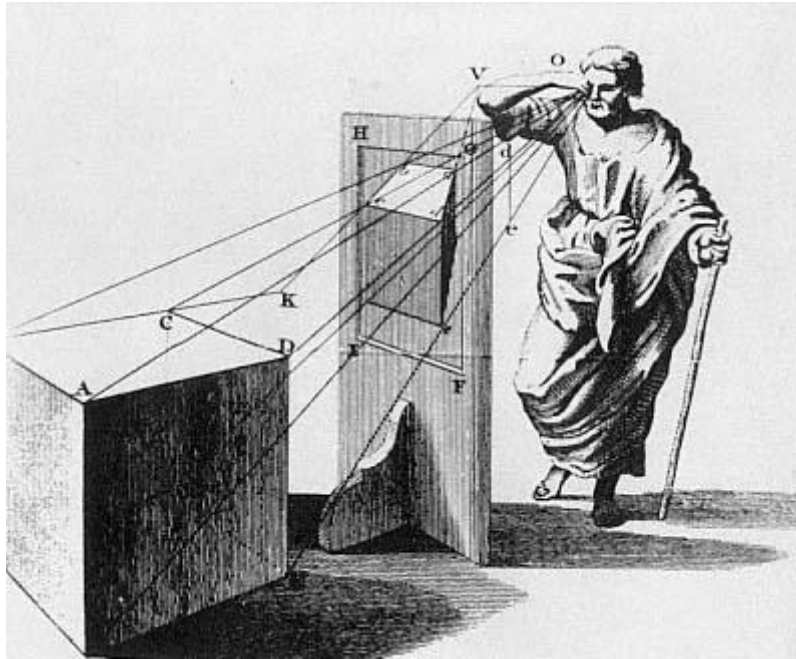
A demonstration of pictorial perspective: the plane E-F-G-H intersects the visual pyramid whose base is the cube and apex is the viewer's eye.
From Brook Taylor, *New Principles of Linear Perspective* (1811).

where the lines pass through the artist's intersecuting plane, they define points corresponding to each line's point of origin. Alberti describes it this way: "We may imagine the [visual] rays as though they were very fine threads tightly bound together in a bunch by an iron band within the eye . . . almost like a pollard of all the rays, the node of which shoots its young branches straight and fine against any opposing surface."[16]

An illustration by Dürer shows an artist actually stretching strings from the object to the picture plane, but more normally artists covered the plane with a rectangular grid through which they looked at the objects from a fixed point of view—sometimes with the aid of an actual eyepiece mounted in front of the picture plane. The grid defined the hypothetical points where lines of the visual pyramid intersected the picture plane. With these points as guides, the artist could scale down the three-dimensional objects and situate them relative to each other on the two-dimensional surface of the picture.

Producing a picture by these means was like catching images in a rigid
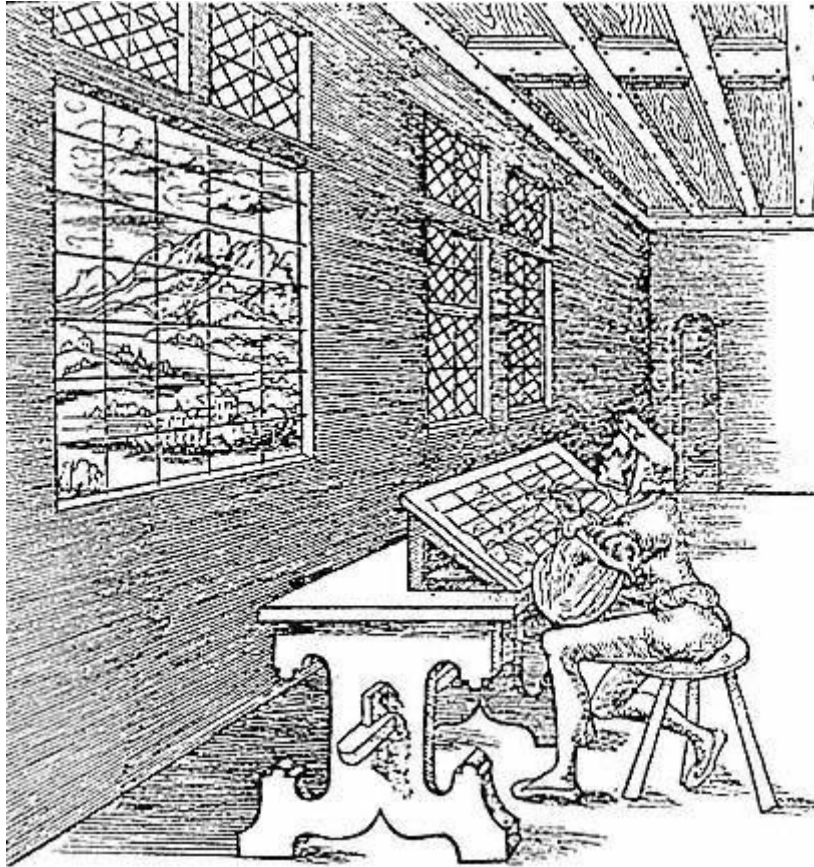
Corresponding grids on the window and the artist's picture plane help
the artist to reproduce images seen on the plane created by the window.
From Johann II of Bavaria and Hieronymus Rodler, *Ein schön nützlich
büchlein und unterweisung der Kunst des Messens* (1531).

net strung across the space between the observer and the objects
observed.[17] No matter how complex or ambiguous those objects might be—in
form, spatial relationships, or emotional impact—they were caught in the same
geometrical net and seen and depicted within the same rigid framework.
Guided by this mechanical system of grids and immobilized points of view, the
artist could (in the words of William Ivins) "substitute something that was
rational and objective for something that was irrational and subjective."[18]
What painting seemed to gain in realistic accuracy, it lost in what André Bazin
called "the expression of spiritual reality wherein the symbol

The artist's eyepiece assures the fixed point of view necessary for
correct perspective. From Albrecht Dürer,
Underweysung der Messung , 2d edition (1538).
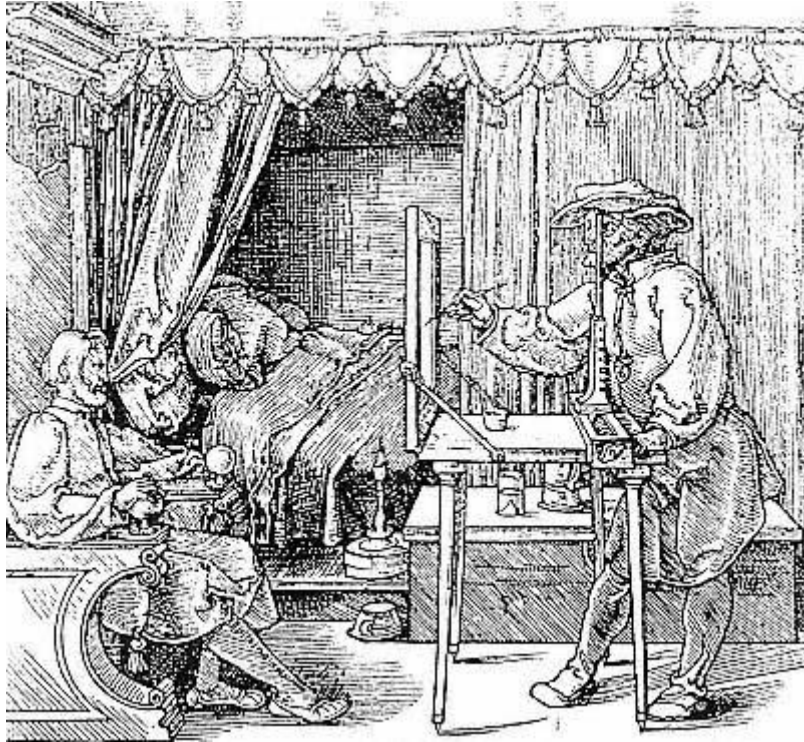
The fixed, peephole eyepiece and transparent screen offer the artist
a view much like that offered by a camera's viewfinder.
From Albrecht Dürer, *Underweysung der Messung*, 1st edition (1525).

transcended its model." Hence, for Bazin, "perspective was the original sin of Western painting."[19]

Not everybody has shared Bazin's pessimistic (and moralistic) views of perspective in painting, but most now agree that Renaissance perspective represents a special and limited interpretation of the visual world. It is, as Herbert Read has put it, "merely one way of describing space and has no absolute validity."[20] The Renaissance theory and practice of pictorial perspective encouraged an implicit equation between seeing and picture making based on the presumption that vision operates according to the same rules that artists follow in producing pictorial perspective. In Bazin's words, "The artist was now in a position to create the illusion of three-dimensional space within which things appeared to exist as our eyes in reality see them."[21] It is upon this basis that one can discuss a picture as a visualization of sight, in the primary sense proposed at the beginning of this chapter.[22]

3—

As a kind of guarantee of a picture's accuracy in visualizing sight, perspective was incorporated into the dominant theory and practice of the visual arts from the Renaissance until well into the nineteenth century, at which point photography arrived to carry on the traditional assumptions about visual and pictorial perspective. Technically, as Peter Galassi points out, "Photography is nothing more than a means for automatically producing pictures in perfect perspective."[23] Through mechanical, optical, and chemical processes the camera reproduced what earlier artists had tried to trace with pencils on the translucent screen of the *camera obscura* . And since the image in the *camera obscura* had been so readily equated with the retinal image, now the photographic image could be equated with the retinal image as well.

The photographic camera also seemed to duplicate the eye's structure: a dark chamber with an aperture and lens directing light rays onto a surface where an image of the world in front of the camera is formed. With photography the image could be preserved, removed from the dark chamber, and looked at with the same assumptions about verisimilitude that are commonly applied to paintings in perspective or to images on the back of the eyeball.

Here the circuitous historical argument we have been pursuing doubles back on itself. Descartes and Scheiner made the retinal image visible to the observer in the dark room behind the eyeball. Now anyone can reenact the

role of that observer by looking at a photograph. When the photographic image becomes cinematographic, the observer returns to the darkened room with a screen, like the retina, on which ephemeral images are in constant motion. Observing the images cast on the screen by the projector, the viewer easily feels the "admiration and pleasure" Descartes felt when "that white body" revealed "a picture which will represent in natural perspective all the objects which will be outside of it."

Of course, the image on the cinema screen is just as flat and pictorial as the image on the retina—and also the images in the *camera obscura* , in paintings, and in photographs—but its equivalence to the three-dimensional world has been guaranteed by the principles of pictorial perspective built into the lenses of cameras and projectors. These machines are not only carefully engineered to obey the same rules of geometrical optics that are assumed to produce perspective in seeing and in picture making, they also have incorporated the girds, eyepieces, and other mechanical contrivances in the perspectivist's toolbox. From these rigid restrictions on seeing comes the typical cinematic image.

Not only is it "in natural perspective," but the usual cinematic image shows a world that is focused, stable, and unambiguously lit. These additional norms are not required by the rules of perspective, but they have proved to be peculiarly suited to an image-making system based on mathematically precise calculations and geometrically exact projections. Yet, like perspective, they are relevant to a very small part of what we actually see: not much more than two degrees of the approximately 200-degree angle that our eyes encompass as we look at the world around us. They come from that part of the retinal image covering the fovea centralis, the extremely small central portion of the retina where the color-sensitive and high-resolution cones are most tightly packed together. The farther visual awareness ranges from that tight little two-degree island in the center of the visual world, the less it has in common with the normal cinematic image.

In effect, the norms derived from perspectivist painting have denied the cinematic image much of what the eye actually sees. Spatially, they exclude virtually everything but the two-degree wedge of space directly in front of the eyes, and psychologically, they avoid the distortions of emotion and idiosyncratic points of view. They place a premium on a measured and cooly analytical approach to image making—what William Ivins calls "the rationalization of sight." Ivins argues persuasively that "the forms produced by our modern geometrical perspective are conventions which . . . are only a loose general rationalization of the actual sense returns of physiological binocular vision."[24] R. L. Gregory has pushed the

argument further by insisting, "In an important sense perspective representations of three dimensions are wrong, for they do not depict the world as it is seen but rather the (idealized) images on the retina. But," he reminds us, "we do not see our retinal images."[25] We see what the eye's "grand scheme" derives from the patterns of light falling on the retina.

Therefore, the artist's and the camera's representations of the retinal image cannot be the equivalent of what we actually see. "Indeed," as Gregory wryly remarks, "it is fortunate that perspective was invented before the camera, or we might have had great difficulty in accepting photographs as other than weird distortions."[26] This may be why some anthropologists have reported that photographs are initially unintelligible to people who have had no experience with pictorial representations of perspective.

In Western culture, geometrical perspective has been familiar for so long that its limits on and deviations from actual vision are hardly noticed at all. It is, in other words, a set of pictorial conventions that, as Ivins points out, is of "such great utility and so exceedingly familiar that for practical purposes it has the standing of a 'reality.'" Because photography automatically incorporates geometrical perspective, it has confirmed perspective in the public mind, made it "true" and, in Ivins's phrase, "clamped it on our vision."[27] This has resulted in a very odd situation. An image deprived of the full possibilities of visual perception has become generally accepted as the only accurate visualization of sight. The measure of its accuracy is not what we actually see but what the perspectivist tradition has produced as pictures of what we see.

The situation has become so thoroughly institutionalized that the dominant cinema, its audiences, and most critics who write about it happily accept perspectivist norms for cinema's visualization of sight—with consequences that André Bazin eloquently defends. Although "perspective was the original sin of Western painting," in Bazin's view, "it was redeemed by Niepce and Lumière"—by photography and cinema, in other words, which Bazin regards as "discoveries that satisfy, once and for all and in its very essence, our obsession with realism." The work of painters, no matter how skillfully it might incorporate the rules of perspective, "was always in fee to an inescapable subjectivity," Bazin argued, but photography "completely satisf[ies] our appetite for illusion by a mechanical reproduction in the making of which man plays no part." For Bazin, "The cinema is objectivity in time."[28]

Bazin reiterates these points when he uses his "ontology of the photographic image" as a basis for his essay "The Myth of Total Cinema."

There he presents cinema as the inevitable goal toward which "all the techniques of the mechanical reproduction of reality in the nineteenth century" were tending: "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."[29] This "guiding myth," as Bazin calls it, is the outcome of mutually reinforcing attitudes toward seeing and reproducing what is seen, which have made the cinematic image a powerful, yet peculiarly limited visualization of sight. For Bazin, as for the dominant film industry (and many critics and theorists who otherwise have little sympathy with Bazin's defense of realism), the strength of the cinematic image derives from its (generally unrecognized) limitations—that is, from its exclusion of any kind of seeing that is not amenable to mechanical, optical, and photochemical reproductions of Renaissance pictorial perspective.

Therein lies the source of the "trouble" in the lens: a mechanization and standardization of seeing that sacrifice much of what emotion, imagination, and the total visual experience offer to visual artists. Filmmakers dedicated to "vision and visualization" would therefore find it easy to agree with the artist and art historian José Argüelles when he calls perspective "a graph applied to the eye for the purpose of mechanizing vision and thus mind" and with Stan Brakhage when he describes the "vista" in Père Lachaise cemetery as "a play of planes wherein one makes marionette of one's eye's sight for the vanishing of lines into perspective, to say 'O!', to have x-changed one's owned sight for the first ring of a chain of other vision."[30] Elsewhere Brakhage has told how his efforts to develop freer and more relaxed ways of seeing made him conscious of "something that was constricting my sight." That "something," he decided, was his "training in this society in Renaissance perspective—in that form of

seeing we could call 'westward-hoing man,' and which is to try to clutch a landscape or the heavens or whatever. That is a form of sight which is aggressive and which seeks to make any landscape a piece of real-estate."[31]

Brakhage's contentions have a historical basis in the congruence of advances in mapmaking, the early voyages of exploration, and the adoption of geometrical perspective by Renaissance artists. Samuel Edgerton discusses these developments in detail,[32] and Argüelles comments on them in terms very similar to Brakhage's:

In actuality both the topographical and the ideal landscapes are based on the mechanical contrivance of the perspective grid. Through this means nature is denatured. The corresponding development of Mercator's projection system (1541), in which terrestrial geography is plotted into squares, aided in the

transformation of nature from a wilderness into an intellectual field-pattern, and finally into real estate.[33]

Here, as in Brakhage's comments, perspective becomes an ideological issue, or as Claudio Guillén calls it in his study of perspective as a metaphor, a "cultural concept."[34]

As a "cultural concept," perspective implies for Brakhage the loss of individual perception ("x-changed one's owned sight for the first ring of a chain of other vision") as well as an aggressive and proprietary attitude toward nature and the world in general ("to make any landscape a piece of real-estate"). Others have interpreted the relationship of perspective to individuality differently, arguing that perspective has enhanced bourgeois concepts of individualism by placing the individual's eye at the apex of the pyramid of rays intercepting the picture plane. "This makes the single eye the centre of the visible world," John Berger writes: "Everything converges on to the eye as to the vanishing point of infinity. The visible world is arranged for the spectator as the universe was once thought to be arranged for God."[35] Thus individual consciousness, the eye-ego, believes itself to be the maker of what it sees. Everything seems to fall into place according to the individual's point of view. Although this suits the bourgeois ideology of individualism, it does not mean that, in fact, individuals are experiencing their own perceptions of the world. They are simply adjusting their view to what an artist has produced with the aid of geometric perspective.

By incorporating perspective into its image-making apparatus, cinema has maintained the "cultural concepts" that give each member of the audience the sense of seeing the image from a privileged and unique point of view, while remaining distanced from it. This is what Stephen Heath calls "the positioning of the spectator-subject in an identification with the camera as the point of a sure and centrally embracing view."[36] The problem is that the view provided by the camera is not privileged and unique at all. It conforms to the norms of pictorial perspective and imposes them on the cinematic image. It denies the "spectator-subject" the possibility of experiencing a truly individual perception—just as it stands between the artist and his or her desire to create images true to an individual perception of the visual world.

4—

In their efforts to achieve their own authentic visualizations of sight, avant-garde filmmakers have severed the bonds between the cinematic

image and the perspectivist tradition. They have broken the rules of filmmaking and subverted the cinematic apparatus. A paradigmatic statement of the avant-garde's approach to filmmaking appears in Brakhage's *Metaphors on Vision:*

By deliberately spitting on the lens or wrecking its focal attention, one can achieve the early states of impressionism. One can make this prima donna heavy in performance of image movement by

speeding up the motor, or one can break up movement, in a way that approaches a more direct inspiration of contemporary human eye perceptibility of movement, by slowing the motion while recording the image. One may hand hold the camera and inherit worlds of space. One may over- or under-expose the film. One may use the filters of the world, fog, downpours, unbalanced lights, neons with neurotic color temperatures, glass which was never designed for camera, or even glass which was but which can be used against specifications, or one may photograph an hour after sunrise or an hour before sunset, those marvelous taboo hours when the film labs will guarantee nothing, or one may go into the night with a specified daylight film or vice versa. One may become the supreme trickster, with hatfuls of all the rabbits listed above breeding madly.[37]

Such a "supreme trickster" is Brakhage himself, whose hats have produced "all of the rabbits listed above" and more. What is important is not the novel techniques per se but the recognition that these techniques are necessary to free the cinematic image from "Western compositional perspective" (Brakhage's expression) and the pictorial conventions it supports.

In a piece of found footage included in Brakhage's *Murder Psalm* (1980), a cartoon animal dressed as a policeman runs directly toward the audience, while the buildings lining the street recede behind him in exaggerated lines of perspective. Suddenly a car comes hurtling out of the vanishing point, runs over him, and disappears. With cartoon logic, the animal jumps up and continues running, now angrily waving his nightstick at the departed car. In subsequent shots he is run over again, and the last time we see him, he is lying flat on his face in the street. These are only a few brief images cut into a complex and subtly nuanced film, yet it is hard not to see in them a parable of the futility of trying to flee "Western compositional perspective" by running away from its vanishing point. Not only will it attack from behind, but it leaves its victim no option but to run straight ahead, toward the open end of the visual pyramid, which is, in fact, the flat, impenetrable screen. The screen, moreover, is only the base of another pyramid whose apex is (perceptually) in the viewer's eye and (optically) in the projector's gate.

Brakhage has long recognized the irony of campaigning against "Western compositional perspective" while continuing to work with its most

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Exaggerated perspective in a found cartoon
(*Murder Psalm* , Stan Brakhage).

efficient tools. He has noted that the light between the project and the screen offers a striking equivalent to the visual pyramid intersecting the painter's picture plane. By its very nature, Brakhage has said, film emphasizes perspective and "creates this perfect tunnel" from the projector to the screen. But he also insists that this is an "artificial" situation and one that filmmakers can confront and expose by creatively using the medium against its own predilections.[38]

A good example is his own *Song XII* (c. 1966), which he has explained came about because of his extremely negative reaction to Chicago's O'Hare

airport. Being in the airport had given him a terrible headache, and he decided that the cause had been O'Hare's long, glass-enclosed corridors, which made him feel trapped in a maze of vanishing points. Subconsciously his eyes had been fighting the strong pull of the corridors' lines of perspective and their dramatically emphasized vanishing points—effects made even more disturbing by the glass walls that superimposed and reflected them *ad infinitum* . As soon as he flew out of O'Hare his headache disappeared. Later he returned to make *Song XII* .[39]

His capsule description of the short 8mm film ("Verticals and shadows—reflections caught in glass traps") indicates some of the formal elements and general theme of *Song XII* , but it only hints at the film's confrontation with

"Reflections caught in glass traps"
(*Song XII* , Stan Brakhage).

the power of perspective.[40] The film is in gray and white, with almost continuous superimpositions that not only layer one image over another but soften shapes and wash out fine details as the shots overlap, dissolve, and fade in and out. Anonymous figures (or their reflections and shadows) appear briefly and usually in slow motion amid geometrically regular lines and planes (a visual pun on "plane" is even suggested by one shot in the film that actually shows an airplane beyond or reflected in a glass wall). The superimpositions produced by the reflections are compounded by the su-

perimposition of shots, and the viewer's eye becomes trapped by conflicting cues to perspective. It is not people in an airport but seeing itself that is "caught in glass traps."

The lens of Brakhage's camera is also a "glass trap," as Brakhage would be the first to admit. But that trap is sprung by the superimpositions, the overexposure, the cuts, fades, and dissolves with which Brakhage undercuts the single and immobile, precise, and authoritarian point of view built into the camera's lens. Instead of trying to run away from perspective within its own rigid lines (like the hapless cartoon policeman), Brakhage makes the lines and planes of perspective serve his own artistic (and in this case therapeutic) need to escape the tyranny of the vanishing point.

If Brakhage defeats perspective by changing its rules, Ernie Gehr beats it at its own game in *Serene Velocity* (1970). From a fixed point of view, like that of the artist's eye in illustrations of how to draw in perspective, Gehr's camera filmed a long bare corridor lit by a row of fluorescent lights in the ceiling. The lines formed by the floor, walls, ceiling, and lights converge toward a vanishing point behind two doors at the end of the corridor. The rectilinear space and dramatically receding lines make the basic image of *Serene Velocity* a model of geometrical perspective. It is a perfect cinematic equivalent of Alberti's formula: "A painting will be the intersection of a visual pyramid at a given distance, with a fixed center and certain position of lights, represented artistically with lines and colors on a given surface."[41]

In *Serene Velocity* , however, the "intersection of a visual pyramid at a given distance" changes every one-sixth of a second. The film alternates four-frame shots of the corridor taken at different focal lengths (with a zoom lens). As the film proceeds, the disparity between focal lengths gradually increases. 50mm shots are juxtaposed with 55mm shots, then 45mm shots with 60mm shots, 40mm with 65mm, 35mm with 70mm, and so on. Because of the principles of geometrical perspective built into the lens, each change in focal length is like a change in the place at which the imaginary picture plane intersects the visual pyramid. The (invisible) vanishing point at the center of the image remains the same because the camera position remains the same, but the angle of converging lines changes: narrowing as the focal length decreases, widening as the focal length increases. It is as if the vanishing point were leaping toward and away from the picture plane six times every second. The visual effect is to make the space seem deeper or shallower and the doors farther from or closer to the viewer, as the shots alternate between shorter and longer focal lengths. The increasing disparity of focal lengths produces a cinematic image that progresses from mild pulsations to what P. Adams

An empty corridor emphasizes the lines and planes of geometrical perspective (*Serene Velocity* , Ernie Gehr).

Sitney describes as "an accordion-like slamming and stretching of the visual field."[42] The illusion of a stable three-dimensional space is thoroughly shattered by Gehr's manipulation of the very devices and conventions of geometrical perspective that were designed to produce it.

Michael Snow's *Wavelength* (1967) also exploits changes in perspectival relationships produced by changes in focal length. In Snow's film, however, the change of focal lengths (again with a zoom lens) only goes in one direction—from short to long, from wide angle to telephoto—so that an initial image of fairly deep space is slowly drained of its illusionistic depth. Like Gehr, Snow filmed a single enclosed space, a nearly empty room, from one point of view. But unlike Gehr, whose framing emphasizes the receding lines of perspective, Snow deemphasizes perspective by shooting from a high angle that centers attention on the far wall of the room, its windows, the tops of trucks passing outside, and the fronts of the buildings across the street. Although as Snow points out, "It's all planes, no perspectival space," the image retains a fairly strong impression of perspective (it could hardly do otherwise, given the optical properties of the lens) until the zoom-in has eliminated the cues to perspective and flattened the room's space against the wall and windows.[43] Then the image

can be seen for what it really is: light making "lines and colors on a given surface," in Alberti's phrase. In chapter 7 I will examine in much more detail the implications of *Wavelength's* zoom; for now, I simply add it to the list of ways avant-garde filmmakers have forced the lens to reveal what it is supposed to conceal: the problematic nature of perspective within the cinematic image.

Another way—brilliantly exploited by Sidney Peterson, most notably in *Mr. Frenhofer and the Minotaur* (1949) and *The Lead Shoes* (1949)—is the creation of anamorphic images. Anamorphosis was a direct spin-off of the development of Renaissance perspective and perhaps the first example of artists using the rules of perspective to frustrate ordinary seeing. (The best known example is an anamorphic death's head in the foreground of Holbein's *The Ambassadors* , but many other examples can be found in paintings since the fifteenth century.) As Claudio Guillén writes, "This vexing sort of visual trickery was but an extension of the illusionistic power implicit in perspective, and of the notion that the characteristics of vision could control the visible contents of the painting."[44]

In conventional perspective, the picture plane intersects the visual pyramid at an angle that is at, or fairly close to, a ninety-degree angle—like a window glass through which one views the scene outside. The anamorphic picture plane is either curved or skewed at an extremely oblique angle to the visual pyramid, which results in images that are weirdly stretched or squashed when looked at straight-on (as we look at most pictures) but will appear normal and in perspective if viewed from an oblique angle or reflected in a curved surface that matches the original point of view. The trick will work only if the artist rigorously maintains a fixed point of view and accurately reproduces the point-to-point correspondence between the three-dimensional objects and their two-dimensional images on the picture plane. An anamorphic lens applies the same mathematical rigor to bending light rays so that they strike the film at an "abnormal" angle and produce a cinematic image that looks distorted if it is projected through a normal lens but appears normal when projected through another anamorphic lens that corrects the original distortions.

Peterson's anamorphic images are intended to remain uncorrected, with the result that familiar shapes appear grotesquely elongated or unnaturally short and squat. They seem to occupy a space that is too shallow and strangely congealed (an impression encouraged by the extreme slow motion Peterson

commonly uses in his films). These images may evoke "the realm of dream, memory or a visionary state," as Sitney suggests, but first and more overtly they subvert the objective visualization of sight

that the rules of perspective are presumed to guarantee.[45] Peterson himself has said that anamorphosis is "the most subjective of all the branches of linear perspective" and hence a way of emphasizing "the subjectivity of the viewing process."[46]

To wring a subjective visualization of sight out of the objective lens is what Brakhage had in mind when he recommended using the lens "against specifications." Another example of that tactic is Ed Emshwiller's practice of filming with a wide-angle lens brought very close to his subjects. As Emshwiller's camera moves over them, parts of the body balloon out then shrink away; all sense of proportion disappears; the solid, three-dimensional world becomes an undulating field of polymorphic shapes. *Relativity* (1966) is not only the title of Emshwiller's best-known film, it is also the principle underlying these visualizations of sight: there is no single, correct representation of objects in space; all is relative to the point of view and the way the lens bends the light rays.[47] Like Peterson's "subjectivity of the viewing process," Emshwiller's relativity of the cinematic image is as prized by avant-garde filmmakers as it is abhorred and hidden by the dominant film industry— except for occasional special effects, dream sequences, and the like. The avant-garde does not need such narrative excuses to justify its rejection of the lens's objectivity.

Avant-garde filmmakers have found many other ways to break the lens's subservience to the goals of geometric perspective. The murky, stippled image in parts of Man Ray's *Etoile de mer* (1928) and the multifaceted psychedelic images in passages of Kenneth Anger's *Invocation of My Demon Brother* (1969) and a number of other films of the 1960s were produced by special lenses. But many filmmakers have found that simply by throwing an ordinary lens out of focus—"wrecking its focal attention," as Brakhage calls it—the spatial clarity of perspective will dissolve into glowing colors and mysterious, overlapping shapes. Superimposition (another tactic favored by many avant-garde filmmakers) automatically destroys the single, fixed point of view essential to perspectivist representations of space. Collage techniques and masking can produce disproportionate sizes and conflicting vanishing points within the same image. Rapid camera movement can flatten space and shatter the edges separating objects from each other and the space around them; if it is rigorously pursued, it can evoke totally new perceptions of space—as has been demonstrated in films as different as Brakhage's *Anticipation of the Night* (1958) and Snow's « (*Back and Forth*) (1969) and *La Région Centrale* (1971).

Rapid intercutting of simple images and movements also flattens the perceived space, as Léger seems to have been the first to discover while

making *Ballet mécanique* (1924).[48] If the intercutting is rapid enough and extended over a long enough period of time, as in Tony Conrad's *The Flicker* (1966) and passages of Paul Sharits's "flicker films," the flatness of the screen can give way to illusory and ambiguous perceptions of depth that have nothing to do with the depth cues of perspective. In a very different way, Duchamp's *Anemic cinéma* (1927) turns depth perception into an optical illusion by presenting rotating spirals that seem to protrude from and recede into the screen itself.

Jordan Belson exploits a similar illusion in *Allures* (1961), though in most of his films the methods are much subtler and involve coordinates and cues to perspective that are constantly changing the implied point of view of the camera. The result is a "disembodied perspective," which Sitney associates with a passage in Olaf Stapledon's science-fiction novel *Star Maker:* "But I had neither eyes or eyelids. I was a disembodied, wandering viewpoint."[49] Similar

effects can arise from contemplating the permutations of vastly intricate dot patterns in James Whitney's *Yantra* (1957) and *Lapis* (1966).

There are also avant-garde films with images that have never been subjected to the perspectival biases of the lens because they were made without cameras—such as the "Rayograms" opening *Emak Bakia* (1926), the scratched and painted films of Len Lye, Norman McLaren, Harry Smith, and Stan Brakhage, to mention a few of the best-known practitioners of these handmade effects. There is also that tour de force of cameraless films, Brakhage's *Mothlight* (1963), with its bits of leaves, grass, flowers, and moth wings taped to the surface of a clear film base.

Some of the films mentioned above will be examined more fully in later chapters. Comparable examples could be listed almost endlessly if more evidence were needed to demonstrate the avant-garde's concerted effort to challenge the perspectivist tradition and break its hold on the manufacture and conventional uses of the cinematic apparatus. Virtually all avant-garde filmmakers have contributed to and profited from this effort to make the cinematic image a fuller and much more revealing visualization of sight—no one more so than Stan Brakhage, whose campaign on behalf of what he calls the "untutored eye" has produced the most pointed attacks on and most creative departures from the conventional cinematic image. To appreciate the nature of that campaign, we must make an excursion into the history of theories of visual perception—where we will discover significant corollaries to the propositions concerning vision, perspective, and the cinematic image that we have examined in this chapter.

Chapter 3—
"The Untutored Eye"

Imagine an eye unruled by man-made laws of perspective, an eye unprejudiced by compositional logic, an eye which does not respond to the name of everything but which must know each object encountered in life through an adventure of perception. How many colors are there in a field of grass to the crawling baby unaware of "Green"? How many rainbows can light create for the untutored eye? How aware of variations in heat waves can that eye be? Imagine a world alive with incomprehensible objects and shimmering with an endless variety of movement and innumerable graduations of color. Imagine a world before the "beginning was the word."
—Stan Brakhage, *Metaphors on Vision*

The "untutored eye" is a persistent and sustaining metaphor in Stan Brakhage's visual aesthetics. It first appeared in the opening paragraph of *Metaphors on Vision* , a work that has become a declaration of visual independence for filmmakers rebelling against conventional filmmaking techniques.[1] Brakhage's statement was original and liberating for avant-garde filmmakers, but the ideas lying behind it did not originate with him, nor can they be limited to filmmaking. They have been shared by some of Brakhage's immediate (or near) contemporaries, and more important, they have played a significant role in the history of theories of visual perception. By placing the "untutored eye" in those broader contexts, I hope to clarify—and emphasize—the metaphor's importance for the visual aesthetics of avant-garde film in general and Brakhage's work in particular.

1—

Ten years before *Metaphors on Vision* , J. D. Salinger's juvenile mystic Teddy (in the story of that name) argued that if children are taught that grass is green, "it makes them start expecting the grass to look [that]

way," rather than "some other way that may be just as good, and maybe much better." Teddy concedes that children might eventually "learn all that other stuff—names and colors and things," but, he says, "I'd want them to *begin* with all the real ways of looking at things."[2] Similar notions appear in J.R.R. Tolkien's lecture "On Fairy-Stories": "We should look at green again, and be startled anew (but not blinded) by blue and yellow and red." Then, like William Blake urging us to cleanse "the doors of perception," Tolkien continues, "We need, in any case, to clean our windows; so that the things seen clearly may be freed from the drab blur of triteness or familiarity—from possessiveness."[3]

Among those who have pursued fresh perceptions of the world are Alan Watts and Aldous Huxley, both of whom used psychotropic drugs to free their vision from the "drab blur of triteness and familiarity." In *The Joyous Cosmology* , which appeared one year before *Metaphors on Vision* , Watts tells of looking at a leaf and discovering that it was "not green at all, but a whole spectrum generalizing itself as green—purple, gold, the sunlit turquoise of the ocean, the intense luminescence of the emerald." He was not experiencing hallucinations, Watts insists, but simply "changed ways of seeing." What had changed was his ability to notice colors that are always present but usually go unnoticed because "normally we do not so much look at things as over look them." When this happens, "The eye sees types and classes—flower, leaf, rock, bird, fire—mental pictures of things rather than things, rough outlines filled with flat color, always a little dusty and dim."[4]

Huxley argues in *The Art of Seeing* , "It is possible by inhibiting the activity of the interpreting mind, to catch a hint of the raw *sensum* , as it presents itself to the eyes of the newborn child."[5] In his better-known work, *The Doors of Perception* , he describes at length what he saw when mescaline "inhibit[ed] the activity of the interpreting mind." Summarizing his experience, Huxley writes, "Visual impressions are greatly intensified and the eye recovers some of the perceptual innocence of childhood, when the sensum was not immediately and automatically subordinated to the concept."[6]

The same argument in somewhat different terms appears in Rudolf Arnheim's introduction to *Art and Visual Perception:*

We have neglected the gift of comprehending things through our senses. Concept is divorced from percept, and thought moves among abstractions. Our eyes have been reduced to instruments with which to identify and to measure; hence we suffer a paucity of ideas that can be expressed in images and an incapacity to discover meaning in what we see. Naturally we feel lost in the presence of

objects that make sense only to undiluted vision, and we seek refuge in the more familiar medium of words.[7]

By invoking "undiluted vision," Arnheim joins Brakhage, Salinger, Tolkien, Watts, and Huxley in the campaign to promote the "untutored eye" and the "adventure of perception" available to minds unencumbered by "concepts," "abstractions," "types and classes," and "all that other stuff—names and colors and things."

Of course, "cleansing the doors of perception" became a catchphrase of the "Psychedelic Sixties," and affirmations of the "perceptual innocence of childhood" perfectly suited a period obsessed with new perceptual experiences. Characteristic of the period is one of Jonas Mekas's columns in the *Village Voice* (6 February 1964), which begins:

Is our eye dying? Or we just do not know how to look and see any longer? The experience of LSD shows that the eye can expand itself, see more than we usually do. But then, as Bill Burroughs says (I quote from memory), "Whatever can be done chemically can be done other ways." There are many ways of freeing the eye.[8]

Mekas goes on to quote from two reports of experiments in which flickering light on closed eyelids induced "colors and visions you were not able

to see before," and in the midst of these reports he inserts the paragraph from *Metaphors on Vision* quoted as this chapter's epigraph. The "untutored eye," LSD, and "flicker machines" might have seemed equally capable of "freeing the eye" and therefore equally true to the spirit of the times, but in reality the idea of the "untutored eye" is of different and earlier origins.

2—

The conception of the "untutored eye" derives from theories of visual perception that start with Johannes Kepler's discovery of the retinal image in the early seventeenth century. When it became apparent that any investigation of vision had to take into account the image "painted on the retina," two questions seemed inevitably to follow: (1) How can the stable, continuous, three-dimensional world we think we see be derived from an intermittent succession of two-dimensional pictures flitting over the concave surface of the retina? (2) Why doesn't the visible world seem to be in our eyes, or for that matter, in our minds, instead of "out there" at varying distances from our eyes? As John Stuart Mill puts it, "What is it we mean, or what is it which leads us to say, that the objects we perceive are external to us, and not a part of our own thoughts?"[9]

There were two fundamental answers to such questions. One (represented by Descartes and Malebranche in France and Bailey in England) simply assumed that we see a stable, three-dimensional world because the workings of the visual system automatically make the necessary adjustments in the retinal image. The Divine Intelligence that designed everything would not have had it otherwise. In Malebranche's succinct phrase, "We see all things in God."[10] In less theological terms, this is the nativist answer, which holds that innate neurological structures and processes of the brain determine what we see. In this view, we are born with the capacity to see the world as it is; therefore, there can be no pristine time before we have "learned to see" when the "untutored eye" could hold sway.

The ancestry of the "untutored eye" must be found, then, in the other answer to questions about the retinal image. This was the answer of empiricist and associationist scientists and philosophers like Locke, Molyneux, Berkeley, and Condillac in the seventeenth and eighteenth centuries and carried on by the main line of orthodox psychology in the nineteenth century (as found in the work of William James, for example), and by twentieth-century psychologists like Pavlov, Watson, Hull, and Hebb.

Their answers began with the assumption that we do, indeed, see only what the retinal image provides: in Berkeley's words, "no more than colors with their variations, and different proportions of light and shade."[11] Moreover, "the perpetual mutability and fleetingness" of those colors and shadings preclude their being seen as permanent and identifiable images. Condillac imagined that at this stage the sense of sight would "wander over a chaos of shapes, [producing] a fleeting picture, the parts of which would escape it continually."[12]

It was generally assumed that even after the discrimination of simple shapes became possible, vision still did not include depth or extension or the solidity and relative positions of objects in three-dimensional space. As the nineteenth-century physiologist Johannes Müller wrote:

The images of objects are formed in the retina in one surface, just as the retina is extended in that form. They will appear to the mind as depicted on a surface, and will excite no idea of proximity or distance, or of the actual occupation of space. However soon the child may recognize the images as things exterior to itself, they still appear to it to occupy one plane, to be all at the same distance from it: it catches at the most distant, as at the nearest object,—it grasps at the moon.[13]

Only with time and practice, Müller believed, does the child learn to see things as—and where—they really are.

In *The Art of Seeing* , Huxley recapitulates the process of "learning to see" by describing his recovery from the effects of a dentist's anesthetic:

Returning awareness began with pure visual sensations completely devoid of significance. These, as I can remember them, were not of objects existing "out there" in the familiar, three-dimensional world of everyday experience. They were just colored patches, existing in and for themselves.

Gradually the "colored patches" became associated with objects in the three-dimensional world: "That which was now being apprehended was no longer a set of mere colored patches, but a set of aspects of the known, because remembered, world." Finally: "What had been at first raw *sensa* and had then become, by interpretation, the appearances of known varieties of objects, underwent a further transformation and became objects consciously related to a self, an organized pattern of memories, habits and desires."[14]

Huxley's "raw *sensa* " are what Berkeley had called "no more than colors with their variations, and different proportions of light and shade." The classic hypothetical example of that primary level of seeing appeared in a famous letter from the English scientist William Molyneux to his friend John Locke in 1693. Molyneux argued that if someone born blind were suddenly given sight, he or she would not be able to tell the difference between a cube and a sphere simply by looking at the two objects. The person would have to touch them in order to distinguish between them.

Molyneux's argument seemed to gain clinical support when surgeons began removing cataracts from the eyes of blind people and reporting what their patients said they saw in the first hours and days after the operations. The earliest report came in 1728 from the English surgeon William Cheselden, who removed cataracts from the eyes of a thirteen-year-old boy who had been blind from birth. "When he first saw," Cheselden wrote, "he was so far from making any judgment about distances, that he thought all objects whatever touched his eyes (as he expressed it) as what he felt did his skin." Cheselden also reported that the boy at first "knew not the shape of anything, nor any one thing from another, however different in shape or magnitude."[15]

Subsequent reports of the first visual experiences of newly sighted people seemed to support Cheselden's findings. After surveying a number of these reports, Marius von Senden concluded:

The elements initially presented to [the patient's] mind constitute, at best, what Grafé describes as an *arrangement en surface* , namely a fortuitously

given ordering of various colored patches, more or less indistinctly separated off one from another.[16]

Experiences such as these encouraged the assumption that similarly fortuitous arrangements of "colored patches" are seen by everyone in infancy, and that only in the course of time do these sensations take on shape, solidity, and identity.

They do so (it was assumed) because of a learning process in which touch is the primary teacher. It seemed obvious that the visual world shared by all normally sighted people could not be derived from "colored patches" on the retina. The associationist hypothesis (as Molyneux's proposition indicates) called upon the sense of touch to supply the necessary information about objects and the space they occupy. "Touch teaches the other senses to judge external objects," Condillac asserts.[17] From touch would come data on the spatial relationships and the shape, size, solidity, and texture of the things we see. Thus we must "learn to see" by associating visual and tactile data—a process that begins at such an early age and becomes so habitual that we do not notice it. We come to experience the collaboration of the two senses as if it were the report of a single sense—sight. As Berkeley puts it, "So swift, and sudden, and unperceived is the transit from visible to tangible ideas [that is, from purely visual data to combinations of visual and tactile impressions], that we can scarce forbear thinking them *equally* the immediate object of vision."[18]

The learning process does not stop there. What is seen must be understood. It must become part of what Huxley called "an organized pattern

of memories, habits and desires." This is what a contemporary psychologist, Robert Ornstein, has described as "a suitable category system in which to sort experience consistently." Ornstein offers a neat summary of that process (with a Darwinian explanation for its success):

As we learn to construct a socially acceptable personal consciousness, we learn to consistently associate, say, the experience of light with external objects. As we mature, this correlation is reinforced. Whenever a particular pattern of excitation is produced in the nervous system, we become more and more likely to be conscious of light energy from outside events. Our world becomes relatively stable; we become able to avoid danger successfully and to manipulate objects. We survive.[19]

To "survive" requires the ability not only to "manipulate objects" but also "to construct a socially acceptable personal consciousness." A major influence on that consciousness is verbal language, which at the simplest level

provides labels for what we see and at more complex levels helps to shape the generalizations we derive from and apply to everything we perceive (hence Brakhage's invocation of a world "before the 'beginning was the word,'" and Arnheim's assertion that to avoid "undiluted vision" we "seek refuge" in words).

For the associationists, learning to see was not only necessary but good and proper. They had no notion that we might be sacrificing something valuable in order to see the world as others see it. Quite the contrary. There were constant references to the infant's being "lost" in a "chaos" of visual impressions until rescued by the sense of touch. Condillac is most eloquent on the subject:

I open my eyes to the light, and see at first only a maze of light and color. I touch, I move forward, I touch again, and as I look the chaos insensibly clears. Touch in some way decomposes the light, separates the colors, distributes them on the objects, and detaches a clear space. In this space are shapes and sizes. Touch opens before my eyes a certain distance, and shows them the way by which they may look over the far earth, and rise even to the heavens above. Touch unfurls for them the universe.[20]

Nineteenth- and twentieth-century adherents to the associationist tradition are likely to be less literal—and less eloquent—in their descriptions of the infant's visual "chaos," but they have continued to maintain (in William James's often quoted assertion), "The baby, assailed by eyes, ears, nose, skin, and entrails at once, feels it all as one great blooming buzzing confusion."[21]

3—

The associationists' premises about vision can support a very different line of argument, however—one in which "learning to see" becomes a loss rather than a gain, and the presumed "chaos" of infant vision may seem an Eden of innocent perception. John Ruskin seems to have been the first person to apply the orthodox associationists' premises in this unorthodox way.

In *Elements of Drawing* Ruskin writes, "Everything that you can see in the world around you, presents itself to your eyes only as an arrangement of patches of different colors variously shaded." Therefore, he argues, artists should seek to recover "the *innocence of the eye,* " which he defines as "a sort of childish perception of these flat stains of color, merely as such, without consciousness of what they signify,—as a blind man would

see them if suddenly gifted with sight." To illustrate his argument, Ruskin chose a familiar example—the color of grass:

[W]hen grass is lighted strongly by the sun in certain directions, it is turned from green into a peculiar and somewhat dusty-looking yellow. If we had been born blind, and were suddenly endowed with sight on a piece of grass thus lighted in some parts by the sun, it would appear to us that part of the grass was green, and part a dusty yellow (very nearly of the colour of primroses); and, if there were primroses near, we should think that the sunlighted grass was another mass of plants of the same sulphur-yellow color.

Rushkin then points out that since we have *learned* that grass is green, we tend to see it only as green (just as Salinger's Teddy feared). "Very few people," Ruskin concludes, "have any idea that sunlighted grass is yellow."[22]

From his aesthetic application of associationist theories of perception, Ruskin was able to conclude that in order to see sunlighted grass in its true yellowness, artists must surrender what they "know" to perceive what they really "see." They must allow the retina's colored patches to displace years of accumulated experience, so that they may look at things with no preconceptions about their identity, function, or meaning. Then they can rediscover the "undiluted vision" Arnheim proposes as the remedy for eyes "reduced to instruments with which to identify and to measure."

The artists who best illustrate Ruskin's theory are the French impressionists, whose goal was to reproduce, in Bernard Berenson's words, "exactly what appears to the uninformed, untutored, to the so-vaunted 'innocent eye.'"[23] Claude Monet's advice to painters perfectly complements Ruskin's:

When you go out to paint, try to forget what objects you have before you, a tree, a house, a field or whatever. Merely think, here is a little square of blue, here an oblong of pink, here a streak of yellow, and paint it just as it looks to you, the exact color and shape, until it gives you your own naive impression of the scene before you.[24]

Monet was reported to have said that "he wished he had been born blind and then had suddenly gained his sight so that he could have begun to paint without knowing what the objects were that he saw before him."[25] No doubt he would have found only praise in Cézanne's judgment: "Only an eye, but, good God, what an eye!"[26]

Cézanne believed, however, that the eye alone was not enough, that one must reflect upon what one sees. ("L'oeil ne suffit pas, il faut la réflexion.")[27] For Cézanne that was an aesthetic imperative. For others, like E. H. Gombrich, it is not only aesthetically desirable but psychologi-

cally necessary if one is to see at all, let alone paint representations of what one sees, and in *Art and Illusion* , Gombrich attempted a thorough refutation of Ruskin's arguments on behalf of the "innocent eye."

As Ruskin drew upon eighteenth- and nineteenth-century theories of perception to support his notion of the "innocent eye," so Gombrich turns to twentieth-century theories and experiments in the psychology of perception. There he finds evidence that makes him doubt "whether such an achievement of innocent passivity is at all possible to the human mind."[28] Gombrich argues that modern research proves our vision to be naturally and automatically attuned to a three-dimensional world that we can never see "innocently" or without expectations of what it will look like. In seeing, Gombrich insists, we always "sort and model the incoming messages, testing and transforming and testing again."[29] In support of his position, Gombrich quotes J. R. Beloff: "Perception may be regarded as primarily the modification of an anticipation."[30] He might have also quoted W. H. Ittelson and F. P. Kilpatrick, whose research on optical illusions led them to conclude, "Perception is never a sure thing, never an absolute revelation of 'what is.' Rather, what we see is a prediction—our own personal construction designed to give us the best possible bet for carrying out our purposes in action."[31]

That is one way of formulating the "best bet" theory of perception proposed by Adelbert Ames (to whom Gombrich refers several times in *Art and Illusion*). The theory rests on the assumption that all perceptual data is ambiguous. This is why there can be no "absolute revelation of 'what is.'" The visual system must resolve the ambiguity before anything at all is seen, and normally it will do so by assuming that "what has been most probable in the past is most probable in the immediate occasion."[32]

For example, if my retina receives the image of a ball growing rapidly larger, my visual system must choose between the possibility that the ball is actually increasing in size, or that it is getting closer. It will probably choose the latter alternative because that is "most probable." What it chooses is,

automatically, what I see. Under highly controlled, experimental conditions, I may not know anything about the actual sources of the patterns stimulating my retina; then I may make a wrong choice and see an object getting closer when it is really getting larger, or vice versa. But in the everyday world, that is not likely to happen because, as R. L. Gregory says:

Objects are far more than patterns of stimulation; objects have pasts and futures; when we know its past or can guess its future, an object transcends

[immediate] experience and becomes an embodiment of knowledge and expectation without which life of even the simplest kind is impossible.[33]

Clearly, Monet's advice "to forget what objects you have before you" cannot be followed if, as the "best bet" theory holds, "knowledge and expectation" guide all perception. In a succinct restatement of that theory, Gregory writes, "We can think of perception as being essentially the selection of the most appropriate stored hypothesis according to current sensory data."[34] This formulation makes the distinction between "percept" and "concept" untenable. It completely undercuts the associationists' assumption that the senses passively receive sensory data that higher levels of the mind translate into conscious visual perception. If, to quote Gregory once more, "all perception is theory-laden,"[35] then the visual system can provide no privileged place for Monet's "naive impressions."

For this reason, Gombrich feels sure, "Nobody has ever seen a visual sensation, not even the impressionists, however ingenuously they stalked their prey."[36] For the same reason, Gombrich finds that current theories of perception support his own theory of pictorial representation. In a crucial passage in *Art and Illusion* he relates the two theories:

It might be said, therefore, that the very process of perception is based on the same rhythm that we found governing the process of representation: the rhythm of schema and correction. It is a rhythm which presupposes constant activity on our part in making guesses and modifying them in the light of our experience. Whenever this test meets with an obstacle, we abandon the guess and try again.[37]

Given this innate and inevitable trial-and-error process of perception and representation, the "innocent eye" would seem to be, in Gombrich's words, "not only psychologically difficult, but logically impossible." Indeed, Gombrich concludes, "The innocent eye is a myth."[38]

Gombrich's conclusion finds support not only in the "best bet" theory of perception but also in certain facts about perception that were unknown or unappreciated by Ruskin and his predecessors. It is now known, for example, that the visual system degenerates if it is not stimulated by light on the retina soon after birth.[39] Therefore, the visual impressions of a blind person "suddenly endowed with sight" are a questionable basis for hypotheses about the early stages of normal human vision. "Adults with restored vision," R. L. Gregory observes, "are not living fossils of infants."[40]

Furthermore, ingenious experiments by perceptual psychologists have drastically revised the conventional assumptions about infant vision. They

have shown that even very young infants can identify shapes, objects, and even stylized drawings of the human face. Long before babies have explored their world through the sense of touch, they can see solidity, depth, motion, and relative positions of objects in space—though not necessarily "all at the same time." That is to say, they may not realize they are seeing the same object when it appears in two different places; or they may not recognize a moving object as being the same object when it is standing still; or they may follow the movement of an object and not notice when a different object has replaced the first one—that is, their attention is on the movement not the moving object. But even these visual anomalies normally disappear by the time the infant is six months old. Although infants may not see the same world adults see, their capacity to perceive the basic elements of the visual world is active—if not totally integrated—within the first few weeks of life. The Jamesian view of the infant's world as a "blooming, buzzing confusion" must surely be

rejected. As T.G.R. Bower says, "The visual world of the infant may well be overwhelming at times, but it is probably not the meaningless buzz it has long been thought to be."[41]

Finally, the actual function of the retinal image must be taken into account. Rather than a "picture painted on the retina," the retinal image is more properly thought of as energy arriving at the retina in the form of light and producing electrochemical reactions that set off millions of further electrochemical reactions along the intricate pathways of the total visual system. The end result of these reactions, combined with other sorts of impulses (from memory, emotions, and the other senses), produces that perception of the visible world we call sight.

Given this complex system of interactions, it makes little sense to talk of some kind of preliminary retinal perception that is truer because closer to the actual world that casts its images on the back of the eyeball. Those images start a process that reveals the visible world, but they, themselves, are invisible. "The eye," M. H. Pirenne writes, "is the only optical instrument which forms an image which has never been intended to be seen."[42]

Must we conclude then that the "untutored eye" is a relic of an outmoded theory of visual perception? Yes—and no. Yes, to the extent that it has become overburdened with a history of misunderstandings about the actual processes of perception and with a too literal application to the vision of infants and those few blind people whose sight has been restored. But no, in the sense that the "untutored eye" is still valid as a metaphor for actual ways of seeing and, therefore, as a source for filmmaking.

4—

To appreciate the metaphorical validity of the "untutored eye," let us return to the color of grass. In *Eye and Brain* , R. L. Gregory writes:

We call grass green, though we have no idea whether the sensation is the same for different people. Grass is a certain kind of plant found on lawns, and the sensation of colour which it gives we all call "green," but we identify grass by other characteristics than its colour—the form of the leaves, their density and so on—and if we do tend to confuse the colour there is generally sufficient additional evidence to identify it as grass. We know it is supposed to be green, and we call it green even when this may be doubtful.[43]

The "untutored eye" might be thought of as a personal, existential acceptance of the "doubtful" in perception, a refusal to let "additional evidence" make grass look green when it doesn't.

The "untutored eye" will not correct its vision when something does not look the way it is supposed to—as, for example, when "grass lighted strongly by the sun in certain directions" is yellow instead of green. Brakhage, in fact, has caught that precise perception of sunlit grass in *Film No. 6* of his *Short Films: 1975* . In a brief close-up two small plants tremor and seem to "blink"— *green-yellow-green-yellow* —like tiny signal lights. The effect is created by a time-lapse sequence of young plants shifting their positions very slightly as bright sunlight moves across them. In direct sunlight they are yellow, in shadow they are green. Because the changes in color are so rapid, the passage so brief, and the point of view so unfamiliar, the viewer has little choice but to surrender to the "doubtful" and see yellow where one would ordinarily see green. The camera-eye has caught what the human eye might miss—or misperceive as ordinary green grass.

This example of cinema's manipulation of perception suggests further that seeing with an "untutored eye" need not be a mindless registering of empirical data, despite the implication of Ruskin's phrase "childish perception of flat stains of color, merely as such." Neither is it a willful surrender to James's "blooming, buzzing confusion." It is a way of making the "doubtful" in perception yield new sight—and insight. By permitting us to see the yellow of

sunlit plants, Brakhage not only offers a fresh and accurate perception of nature's colors, he also demonstrates the metaphorical (some might even say metaphysical) powers of the "untutored eye." To see young plants as flickering beacons of light is to see them as metaphors of solar energy transformed into vegetal growth. This is a visual metaphor that both Blake and modern scientists would appreciate.

Watts and Huxley used drugs to cleanse their "doors of perception," but almost any drastic change in the way one looks at the world produces hints of what an "untutored eye" might see. Simply by looking through a small hole in a large piece of cardboard, one can see the world as colored patches on a flat plane. Because the cardboard masks the usual cues to depth and spatial relationships, objects seem flatter and bunched up in the shallow space just beyond the hole, especially if the hole is aimed this way and that, so that one does not know in advance what objects are coming into view. With practice, a window can be used in the same way—as a frame within which the three-dimensional world outside can be seen as an arrangement of flat, colored shapes on the window pane. With still more practice, one can see that each eye has its own window, framed by eyebrows, cheekbones, temples, and bridge of nose. When both eyes are open these windows overlap, producing an oval "picture window" about twice as wide as it is high. This is what the artist Jim Jackson calls the "framework of seeing," and he shows how it can be used to "frame" flat patches of color derived from the world in front of the eyes.[44]

As Jackson also demonstrates in *Seeing Yourself See* , this framework includes a great deal more than we normally allow ourselves to notice, and within its total area, only a very small part is occupied by the most focused central point of interest. As forms approach the nebulous "frame" of the eyes' "window," they become increasingly indistinct and drained of color until finally nothing is visible but light and movement. Beyond those limits, the eyes continue to detect movement, even though the thing moving (even a point of light) remains invisible. The ability to detect movement beyond the peripheries of the visual system's image-forming capacities is a kind of Distant Early Warning System that undoubtedly assists in the survival of the species. It is also evidence that at the invisible borders of vision, there is something like pure, disembodied movement to which the eye continues to respond and to which the imagination might give shape and substance—as mapmakers once gave fanciful forms to the inhabitants of terra incognita.

Although this magical terrain may be continually present to the "untutored eye," it is virtually ignored by the "tutored" eye, for which the focused center acquires a subjective importance that makes it seem much larger than it really is. For this reason, as Jackson notes, "you have a hard time seeing the focal point as the very tiny area it really is. Psychologically you resist overthrowing the accumulated power of experience of the visual center of your brain and refuse to let your eyes go back to a primal state of simple perception."[45]

It is possible to achieve that "primal state of simple perception," which is Jackson's equivalent of "untutored vision," by becoming aware of *everything* within the "framework of seeing," not just the consciously chosen center. Shifting attention from the "focal point" of vision permits the "doubtful" in perception to have the upper hand. Even familiar objects will reveal unexpected colors, textures, shapes, and relationships to each other. As objects lose their distinct "objecthood," space (as an "emptiness" around objects) tends to disappear. The world no longer stays "out there," at safe and known distances but seems to press in upon the perceiver. Under such conditions, one might indeed "grasp at the moon," or, at the very least, see the world as Monet proposed to see it: "here is a little square of blue, here an oblong of pink, here a streak of yellow."

To see in this way is to experience what James J. Gibson has called "the pictorial mode of visual perception." It is a subjective way of seeing that Gibson associates with (in his terminology) the "visual field," as distinct from the "objective seeing" of what he calls the "visual world." In *The Perception of the Visual World* , Gibson explains his distinction between "visual field" and "visual world" in terms that could be applied equally well to "untutored" and "tutored" vision. Furthermore, he shows that both ways of seeing are readily observable:

First look around the room and note that you see a perfectly stable scene of floor and walls, with an array of familiar objects at definite locations and distances. Every part of it is fixed relative to every other part. If you look out the window, there beyond is an extended environment of ground and buildings, or, if you are lucky, "scenery." This is what we shall call the *visual world* . It is the familiar, ordinary scene of daily life, in which solid objects look solid, square objects look square, horizontal surfaces look horizontal, and the book across the room looks as big as the book lying in front of you. . . . Next look at the room not as a room but, insofar as you can, as if it consisted of areas or patches of colored surface, divided up by contours. To do so, you must fixate your eyes on some prominent point and then pay attention not to that point, as is natural, but to the whole range of what you can see, keeping your eyes still fixed. The attitude you take is that of the perspective draftsman [that is, seeing that, as on a flat picture plane, "square objects" are really trapezoidal, "horizontal surfaces" are inclined planes, "the book across the room" is much, much smaller than the one "lying in front of you," and so on]. It may help if you close one eye. If you persist, the scene comes to approximate the appearance of a picture. You may observe that it has characteristics somewhat different from the former scene. This is what will be called here the *visual field* . It is less familiar than the visual world and it cannot be observed except with some kind of special effort.[46]

The "special effort" is what Jim Jackson calls "over-throwing the accumulated power of experience of the visual center of your brain." It yields a

perception so different from the familiar "visual world" that, Gibson insists, we must think of the "visual world" and the "visual field" as the results of "two different kinds of seeing."

One kind of seeing—that which produces the "visual field"—corresponds closely to "innocent" vision; the other kind—producing the "visual world"—is akin to the "theory-laden" vision that Gombrich presumes to be the only kind available to human eyes. Gibson's "visual world"–"visual field" distinction is thus doubly useful for our present purposes. Not only does it add more details to a description of what an "untutored eye" might see, but it also offers an implicit refutation of Gombrich's assertion that "the innocent eye is a myth."

For these reasons, Gibson's differentiation between the two ways of seeing is worth summarizing in detail. Gibson finds that the "visual field" has a frame: an oval boundary marking the limits of the eye's visual angle. Within that frame there is "a central-to-peripheral gradient of clarity." In contrast, the "visual world" has no frame and no noticeable center; it is "panoramic" and seems clearly focused throughout (because of the eye's constant scanning and shifting of focus). The "visual field" is instable, changing with every movement of the eyes and turn of the head, the "visual world" is stable: things stay where they are, no matter how much our eyes move about. In the "visual field" three-dimensionality is reduced. There is less distinction between "figure" and "ground," or between objects and their "interspaces." Forms "eclipse" each other, rather than seeming to be in front of each other, as they appear to be in the "visual world." Perhaps most important of all, the "visual field" evokes a self-consciousness about the act of perception itself. It is, says Gibson, "an introspective or analytic phenomenon." What we see seems less completely outside of us because we are aware of our special effort to see it. The "visual world," on the other hand, seems totally independent of our act of perceiving it. It is simply *there* . In Gibson's terms, the "visual field" derives from "our experience-when-we-introspect," and the "visual world" from "our experience-when-we-do-not."[47]

In other words, the "visual field" results from our noticing the ambiguous or "doubtful" perceptual data that our visual system normally suppresses or converts into the more "useful" and socially shared perceptions of the "visual world." Gibson even suggests that the "visual field" provides "a reasonably close correlate of the retinal image," but at the same time he insists that the

"visual field" is not a "preliminary" stage of seeing or in any sense a "basis" for the "visual world."

In his view, the "visual field" is simply "an *alternative* to ordinary perception."

5—

"Untutored" vision can be thought of then as "an *alternative* to ordinary perception," as an ability to notice deviations from visual norms, many of which have in fact been studied by perceptual psychologists. Various studies have shown that color, size, and other visual qualities are perceived differently according to different moods, expectations, and physical conditions: food looks better to someone who is hungry; desired objects may look larger to someone who lacks them. Objects of great interest cause the pupils to dilate; repugnant sights constrict them. The size of the pupil influences focusing and the perception of brightness and color saturation. The "untutored eye" may notice these changes, just as it may notice when a sudden surge of anger from deep within the brain's subcortical regions topples the carefully balanced chemistry of the cells in the visual cortex and makes us "see red." We blink more often when we are under stress, and the "untutored eye" might see the frequency with which our eyelids plunge our vision in and out of darkness.

Darkness itself can be a rich realm of vision for the "untutored eye." It reveals ephemeral shapes and patterns of light seen when the eyes are closed. Known as phosphenes, these "wispy clouds and moving specks of light," as Gerald Oster describes them, may arise spontaneously, not only when the eyes are closed but whenever "the viewer is subjected to prolonged visual deprivation," as when he or she looks for hours at a blank screen.[48] Phosphenes are also produced by physical pressure on the eyes—from the light touch of a fingertip on the eyelid, to the violent jolt produced by a fall or a blow to the head (when we "see stars"). They can result from sudden movements of the eyes after long periods in darkness, and they can be stimulated by chemical agents (from alcohol to hallucinogenic drugs), electrical shocks, migraine headaches, and various forms of damage to the eyes or other parts of the brain's visual system.

Under one condition or another, phosphenes are visible to virtually everyone, and although individuals vary in their sensitivity to them, Oster has shown that it is possible to chart and classify certain general patterns of phosphenes according to the type of stimulus producing them. For example, gentle pressure on the eyelids produces "disks or concentric circles or arcs" at one edge of the dark visual field; hard pressure on both eyelids produces "a checkerboard or a field of light in

motion"; sudden eye movements upon waking produce "a fan-shaped burst of yellow arcs."[49]

Oster finds these and other characteristic phosphene patterns in "prehistoric cave drawings and in folk art and more sophisticated works from many cultures and periods." He also finds, "Children between the ages of two and four, capable of manipulating a pencil but not of making naturalistic pictures, draw figures that have a distinct phosphene character." That these "scribblings" represent phosphenes seems all the more likely since, as Oster notes, "Children have an ability, which diminishes with adolescence, to evoke phosphenes quite easily. Phosphenes may indeed be an important part of the child's real environment, since he may not readily distinguish this internal phenomenon from those of the external world."[50] The merging of "internal" and "external" worlds may continue to be visible to the "untutored eye."

In addition to phosphenes, the visual system produces a persistent low level of grainy light often referred to as visual "noise." R. L. Gregory explains,

"There is always some residual neural activity reaching the brain, even when there is no stimulation of the eye by light," and this "background activity" presents the brain with the problem of distinguishing between inner and outer sources of visual information. In Gregory's words, "The brain's problem is to 'decide' whether neural activity is representing outside events, or whether it is mere 'noise' which should be ignored."[51] Though ignored by the "tutored" eye, this "residual neural activity" can be another rich source of seeing for the "untutored eye," precisely because it comes from within the visual system and can help to make that inner world visible.

In fact, visual "noise" may be directly responsive to emotions. This possibility is raised by Albert Rose in *Vision: Human and Electronic.* Rose found that a sudden, unexpected noise or "a tense or apprehensive emotional state" can produce a noticeable increase in the visibility of visual "noise."[52] Although such responses within the visual system are easier to see in dim light or with the eyes closed, presumably visual "noise" is always present and potentially visible to the "untutored eye," which may see the whole texture of vision change with changing emotional states.

Certainly it is possible to argue that phosphenes and various kinds of visual "noise" are not only verifiably present but produce some of the subtlest patterns in our fabric of vision. If these patterns are reproduced in children's drawings and in folk art, they may also be a source for the highly sophisticated geometry of mandalas. Lenny Lipton has proposed,

"In Tibetan mandala art, we have some of the best examples of the appreciation of the grainy perception of the eye-brain." This notion will be pursued further in chapter 6; here the point to be stressed is that visual "noise" has a close correspondence to the graininess of the projected film image. As Lipton notes, "The background [visual] noise of motion picture systems is very much like that of the eye-brain."[53]

Brakhage, too, has proposed an equivalence between the graininess of film emulsion and the "grainy field" of vision itself, but his own observations have revealed patterns of "grains" and "dots" that are subtler and more complex than those in the random dance of emulsion grains projected on the movie screen. "At first," Brakhage wrote in a letter to the Canadian filmmaker Sam Perry, "I thought that the individual grains [in vision's "grainy field"] were fairly fixed, and of a like nature, and moved only slowly, in a 'crawling' fashion. . . ." These, he suggested, are approximated "most exactly in film by the use of 'grainy' film, by emulsion grain." With longer and closer observation, he became "aware of several differing flicker dots," and of "differing SHAPES of these differently MOVING dots or grains." He even found that one variety appeared to be magnified when he held a glass before his closed eyes. He labeled these "Reich's grains," because they seemed to accord with Wilhelm Reich's descriptions of the patterns of movement of "Orgone" energy. "I find these moving shapes," Brakhage added, "coming into my closed eye vision in blue, gold, and even red, and very occasionally green, rather than only in the 'blue' Reich designated to them." Then, alluding to Perry's references to a "dot plane" in vision, Brakhage concludes:

My continued study of the WHOLE field inclines me to believe that there are NO exactly round grains thereIN it, that we tend to call "round" that which has *not* been seen inTO distinctly enough, that, thus "The Dot Plane" is ONLY an introductory term, so to speak, and COULD thus constitute a verbal (to the expense of the visual) hang-up if hung onto.[54]

Brakhage's aesthetic development of "The Dot Plane" will be one of the matters discussed in the next chapter.

His letter to Perry illustrates Brakhage's characteristic effort to discover everything he can about every aspect of seeing and then describe his discoveries in precise and evocative language—only to conclude by emphasizing the inadequacy of any verbal description of visual phenomena. As an advocate *for* the "untutored eye," Brakhage finds himself forced into using labels and concepts that as an artist *of* the "untutored eye," he does everything he can to avoid, or at best transform, through metaphor. Yet, rhetori-

cal differences aside, Brakhage's descriptions of various visual phenomena often accord quite closely with those of others—scientists as well as artists—who are engaged in exploring and explaining the less familiar and often overlooked aspects of visual perception.

For example, both Brakhage and Jim Jackson have written about what Jackson calls "light saturation." The effect can be produced, Jackson explains, by sitting in a brightly lighted room, focusing on a point directly ahead, and trying not to blink, even after the eyes "begin to sting." Jackson's description continues:

After a minute or two, your retina will begin to become saturated with light. The effect is similar to that of the afterimage, but on a larger scale. More of the retina is involved. Light areas may become mysteriously brighter, change color, spill over into dark areas, or pulsate. Objects may appear to have halos around them.[55]

This can be compared to Brakhage's account of concentrating on his wife's features as she sat before him, reading aloud. With his "eyes being freed and abstractly receiving the reader . . . all sight without thought," as he writes in *Metaphors on Vision* , he began to see "what had been backlighting" take the form of a "halo" behind her head:

And the ring of it eventually spread to contour what had been the outline of her hair, then suffused the natural brownish color until white, her facial changes keeping pace with this aging process until every shadowed area had cracked across her features into wavering wrinkles eventually isolating the paler manifestations to the impermanent shape of a skull. Fear constricted me to glances then, and each sharpening of vision forced the imagery back to what I'd recognize as "normal."

But curiosity, Brakhage says, prompted him to continue the experiment, to stop "short of normalcy, with my wife's still white hair now streaming down beyond any brown length of it, pooling at her feet, and enclosing what was once her form entirely." Then,

As features became unbelievably aged, they constricted into a more believable infant aspect, hair aura suffusing throughout the room. My mental insistence on the drama gave me the sense that dead and unborn relatives were presenting themselves thru the living organism, my wife suddenly a spaceless entity containing a timeless evolution. This thought, a devastating limitation upon happenstance, constricted all reception and stopped the process dead.[56]

Although Brakhage finds metaphorical significance in phenomena that Jackson is content to describe in purely visual terms, his account matches Jackson's in its principal visual details: the halo effect, the color changes,

the positive-negative reversal of afterimages, the pulsating and spilling over of light into areas of darkness.

Although sights such as these may occur spontaneously to anyone and, like phosphenes, be familiar to all young children, they seem totally foreign to normal or "tutored" vision. When Gombrich declares the "innocent eye" to be a "myth," he is in effect speaking for that part of the mind that refuses to accept *all* the evidence of the eyes; which treats visual "noise" and phosphenes as "problems" and interruptions of "correct" seeing; which ignores the impact of emotions on vision; which will not risk venturing from the safe, known "visual world" into the less familiar "visual field." Is there any way, then, to break down the "tutored" eye's resistance to "untutored" vision and open it to a broader and richer terrain of visual perception?

6—

Peripheral vision is, as Brakhage has remarked, "easily accessible to every person and obviously (each person can feel for him or herself) ignored."[57] Thus, developing a greater awareness of peripheral vision is a good way of introducing the "tutored eye" to "untutored" vision. But Brakhage insists that this is "ONLY a start (and for some perhaps a misleading one) because untutored vision is NOT peripheral vision. The baby of each person is always alive within anyone's being; and that 'baby' remains forEVER 'untutored.'" It

would be a mistake, in other words, to treat peripheral vision and "untutored" vision as the same thing, because the latter includes much more than what happens to fall on the peripheries of the retina. It includes all seeing that is not mediated, organized, and explained by the "tutored" part of the mind.

Since that part of the mind expects to have things explained and demonstrated, there is some usefulness in calling its attention to peripheral vision, or to the "visual field," or to the light displays of phosphenes and grainy visual "noise." This is a way of helping "tutored" vision notice what it has learned to overlook. To teach someone to see with an "untutored eye" may sound like a contradiction in terms, but what is being learned, in this case, is how to recognize that "the baby in each person" is still there and can see if permitted to do so. "I have no easy trick for making people aware of that baby in 'em," Brakhage admits, "and I suspect stark terror keeps most from ever trying to be thus aware. Ironically, stark terror is for some people the only path to that recognition; but

Artaud's methods are not for me. The films'll do it, IF they just don't get hung up on the particularities of me, my path."

It is precisely to avoid getting "hung up on the particularities" of Brakhage's path that this chapter has devoted most of its attention to other paths toward the kind of seeing Brakhage calls "untutored." In that context, Brakhage's defense of the "untutored eye" proves to be less unique than many have thought but also less naive than the Gombrich line of argument would seem to imply. To defend the concept of the "untutored eye" is one thing; to give it artistic expression is another and more demanding task. For Ruskin, the goal of the artist is to transpose "innocent" sight from eye to canvas. For Brakhage, the transposition must be to film, and as we saw in chapter 2, film is a particularly unpromising medium for the expression of "untutored vision" because its mechanical, chemical, and optical parts and processes are designed to produce equivalents of "tutored" vision. They resist the individual "particularities" of an "untutored eye."

Most resistant of all is the lens. That is so because the lens is the cinematic equivalent of what is called the "normal eye" in physical optics. As Vasco Ronchi explains in *The Nature of Light* , the physiology of actual living eyes produces many "anomalies and uncertainties" in measuring the activity of light in human vision. Consequently, optical physicists "decided to refer to a 'normal eye' or 'standard observer,' namely to a fictitious eye which satisfied certain conventions and which was invariable." Many measurements were made, Ronchi explains, so that this "normal eye" would be "as near as possible to the greatest number of real eyes, hence near to the average of them."[58]

The manufacture and use of camera lenses have followed the same line of reasoning. In fact, all parts of the camera, as well as the film that runs through it, are built-in averaging devices. Because they are made to serve the statistically average "normal eye" of optical physics, they are likely to be congenitally blind to much of what the "untutored eye" sees—unless their averaging effects can be cancelled. And that is precisely the purpose of Brakhage's recommendations to spit on the lens, to over and underexpose the film, to "use the filters of the world, fog, downpours, unbalanced lights, neons with neurotic color temperatures, glass which was never designed for a camera," to use outdoor film indoors and indoor film outdoors, and to shoot during those times "when the film labs will guarantee nothing."[59] These are ways of "untutoring" the camera eye, just as staring without blinking, or concentrating on peripheral vision, or becom-

ing attuned to phosphenes or visual "noise" can help to "untutor" the vision of the human eye.

It remains to be seen if there is artistic merit in such methods. This chapter has not dealt with questions of merit but with possibilities: the

possibility that there is such a thing as an "untutored eye" and the possibility of creating cinematic equivalents for what that eye might see. Now we can proceed to the "particularities" of Brakhage's "path"—with less chance of getting "hung up" on them. If, as Brakhage insists, "the films'll do it," what exactly will they do? And how will they do it?

Chapter 4—
"Giving Sight to the Medium": Stan Brakhage

When giving sight to the medium, "with, not through, the eye" (William Blake), with, rather than thru, machine, with any means at your bestowal (rather than disposal), with the light, and naturally then OF all these things also as in any gift, the term "moving picture giving" takes on a blessed (and necessary to me) dimension.
—Stan Brakhage, *A Moving Picture Giving and Taking Book*

The poet Robert Kelly summed up his reaction to Brakhage's film *The Art of Vision* (1965) with the phrase "mind at the mercy of eye at last."[1] Another poet, Robert Creeley, echoed Kelly's judgment: "Seeing your films," he wrote to Brakhage, "I do *see* , first of all, and 'think' later."[2] The primacy of "seeing" over "thinking" is frequently assumed to be the principal characteristic of Brakhage's films. Fred Camper, for example, writes in a retrospective essay on Brakhage, "He has, more than any other filmmaker, defined film as *visual* , freed it of extra-visual considerations, and then *used* the visual to express a totality of thought."[3] Camper's reference to "a totality of thought" is crucial to an understanding of Brakhage's visual aesthetics. Rather than putting "mind at the mercy of eye," Brakhage appeals to what he has termed an "optical mind," which is "dependent upon perception in the original and deepest sense of the word."[4] In its original sense, perception is a creative union of mind and eye, a "sensuous or mental apprehension, perception, intelligence, knowledge," as the *Oxford English Dictionary* defines the Latin origin of the word. Translating sensuous knowledge into visual art has been Brakhage's greatest accomplishment as a filmmaker.

1—

If Brakhage often speaks on behalf of the eye, it is to counterbalance what he feels to be our culture's bias in favor of the mind and our conse-

quent failure to recognize how easily the mind can imprison itself in an abstract and diminished universe of its own making. As he writes in *Metaphors on Vision:* "Even the Brains for whom thought's the world, and the word and visi-or-audibility of it, eventually end with a ferris wheel of a solar system in the middle of the amusement park of the universe. They know it without experiencing it, screw it lovelessly."[5] In contrast, Brakhage invokes an "adventuring eye" that acts in "partnership" with the mind:

My eye, again, outwards (without words) dealing with these "indescribable," "imaginary" vibrations. . . . an irresponsible gamble thwarting the trained response link between retina and brain, breaking the associational chain, this mind-eye partnership playing the game with an unmarked deck, as in the beginning, giving eye's-mind a chance for a change, yet a deck all the same, only ship-shape for exploration, not a-bottled-trophy.[6]

Without the eye's sensuous knowledge, the mind will atrophy, become a mere trophy, like a ship in a bottle, incapable of sailing out on voyages of exploration. In "partnership," however, the "mind-eye" can go exploring in a

world that is like an unmarked deck ("as in the beginning"), and it can know the world without labels and "the associational chain" that binds the "tutored" eye.

In his campaign to give "eye's-mind a chance," Brakhage has confronted two major obstacles. The first is the cultural bias that not only separates thinking from seeing but relegates seeing to a secondary or supporting role in the drama of mental life. As Brakhage has put it, "We don't know how to let the eyes think, or how to be conscious of eye-thought."[7] The second obstacle is a consequence of the first: viewers of his films, including many critics, seem to have great difficulty equating the imagery of the films with the phenomena of actual visual perception. This difficulty was exemplified for Brakhage when, as he describes it, P. Adams Sitney "refus[ed] to close his eyes and see if he couldn't see something that was related to the painting on my film." Though one of Brakhage's most insightful and sympathetic critics, Sitney seemed unwilling to grant the possibility that the sources for certain aesthetic effects in Brakhage's films might be found behind his own closed eyelids.

Whether or not the incident occurred as Brakhage describes it, the point he wishes to make is clear:

I said [to Sitney] I am the most thorough documentary film maker in the world because I document the act of seeing as well as everything the light brings me. And he said nonsense, of course, because he had no fix on the

extent to which I was *documenting* . He and many others are still trying to view me as an imaginative film maker, as an inventor of fantasies or metaphors.[8]

That is, in fact, the predominant view of Brakhage in Sitney's *Visionary Film* and in most other commentaries on Brakhage's work. Given that the title of his first and most important collection of writings is *Metaphors on Vision* , critics can hardly be blamed for interpreting Brakhage's "documentaries" metaphorically. Yet, a pervasive theme of that work is the literalness of the "eye adventures" described there. One example, quoted at length in chapter 3, is Brakhage's changing perceptions of his wife as his eyes become increasingly saturated by light. Anyone willing to accept the veracity of that and many other accounts of "untutored" vision in Brakhage's writings and lectures should not be surprised by Brakhage's claim to be "the most thorough documentary film maker in the world." Or as he put it on another occasion:

I really think my films are documentaries. All of them. They are my attempts to get as accurate a representation of seeing as I possibly can. I never fantasize. I have never invented something just for the sake of making an interesting image. I am always struggling very hard to get as close an equivalent on film as I can, as I actually see it.[9]

If poets are "literalists of the imagination," in Marianne Moore's well-known phrase, then Brakhage is a literalist of perception, striving to make equivalents of what he sees, as he actually sees it.

"Equivalent" is the crucial term. It stresses unadorned accuracy in representing what is seen but makes allowance for the mediation of the materials and processes of filmmaking. The term "equivalent" allows for the fact that not everything that can be seen can be photographed: phosphenes, for example, or visual "noise" and other sensations of light, texture, and color created by the visual system itself. Furthermore, as Brakhage noted in an interview, there are "qualities of light" for which film is "too gross or too inferior or whatever to be receptive to." This being the case, Brakhage continues:

I have to search for equivalents that will give something of the quality of what I'm seeing. Well, that takes me back to the absolute beginning—because all along, all I or anybody else have been able to do, is create by whatever means—film or any other art—an *equivalent* of what we were seeing.[10]

When Jane Brakhage, who also took part in the interview, comments, "It's a weird thing to do in the first place," Brakhage first agrees, "Yes, it

is isn't it?" then adds, "But if you think about it, it's so beautiful, because only by doing such a weird thing could you actually get involved in trying to create an equivalent for something that most people *weren't* already seeing." By stressing *weren't* , Brakhage implies that although people may not have seen

equivalents of what Brakhage sees, they could see them and would recognize them as being like their own, if they had the chance to do so. His films offer them that chance. "I mean," Brakhage adds, "you begin trying to get an equivalent that's rather close cousin to whatever anybody else is seeing."

Here is an indication of the social role Brakhage's films can play. If viewers recognize equivalents of their own seeing in Brakhage's films, they may become increasingly open to ways of seeing that do not conform to the social conventions respected by the "tutored eye" and that are not incessantly reinforced by conventional techniques of image making. As Brakhage puts it, "I really want to help people to see, to the extent I have any clear social function as an artist."[11]

To accomplish this goal, Brakhage attempts to "document" seeing that is available to everyone—not just to artists and visionaries privileged with some sort of rarefied visual acuity—otherwise his images could not communicate with the "baby" that "remains forEVER 'untutored'" in everyone.[12] This is why Sitney's "refusal to close his eyes" was so galling to Brakhage. It seemed like an implicit rejection of the social relevance as well as the perceptual accuracy of Brakhage's films.

By insisting on the documentary aspect of his work, Brakhage also challenges a common assumption about the difficulty in viewing his films. Fred Camper once described the difficulty this way: "There is no 'base' that one can approach [Brakhage's] work from," because it offers no "connection with [the viewer's] direct experience." In fact, Camper said, "One cannot understand Brakhage in terms of what you see, or the way you view the world; you must understand his work by trying to understand the way he sees the world."[13] It is true that conventional assumptions about seeing are of little help to the viewer of a Brakhage film, but that is because they place such narrow limits around the possibilities of seeing. In challenging those assumptions, Brakhage has taken it upon himself to help people see what they are truly capable of seeing; thus, it is not Brakhage's way of seeing that we must come to understand but our own. In Brakhage's words: "I am primarily concerned with making films which can be taken in*to* the viewer, in *thru* his experience of himself in the act of seeing, without his being taken in *by* the film and/or *via* his lack of experience."[14]

2—

To take film in, instead of being taken in by it, viewers cannot remain passive receivers of images. They must become engaged with film in a continual creative process of visual renewal, a typical example of which is offered by the conclusion to *Dog Star Man* (1961–64). Dan Clark's description of the closing moments of the fim is meticulous:

DSM [i.e., the Dog Star Man] chops, bare chested, in
sunlight—same as before
DSM walks through snow, looks up
daytime sky with clouds
night sky with stars
DSM chops, in b&w negative, in orange-toned color
DSM chops, in close up, medium shots, from below
flashes of a roll of film ending, orange, white
DSM chops
axe chopping roots of a dead tree
flashes, sprocket holes move slowly down frame
DSM chops
flashes
b&w roots chopped
black
orange
white

flashes
black
DSM chops
white
black
orange
b&w roots
flashes
sprocket holes
star in black sky
black
dark purple
dark green
orange
black
blue
black[15]

Although no verbal description can equal the experience of seeing the film, Clark's list of images is as accurate as one could hope to make it, given the film's extremely rapid pace (most of the images are on the

screen for only a fraction of a second). Drawing upon these images, I propose to show how visual renewal figures thematically and perceptually in the conclusion to *Dog Star Man* .

One line in Dan Clark's text clearly indicates Brakhage's method of integrating imagery and theme: "axe chopping roots of a dead tree." An axe chopping tree roots also appears earlier in *Dog Star Man* , usually in a context that seems to equate chopping with sexual intercourse. At the film's conclusion, however, the chopping is more specifically related to "cutting" film. In addition to sprocket holes, which remind us of the material strip of film itself, the images include pieces of film askew on the screen as if they were chips of the dead tree sent flying by the impact of the axe's blade. What Clark calls "flashes" are places where all film opacities seem to have been cut through, permitting pure light to burst forth.

The film contains within its own imagery the means of bringing itself to an end (as Clark notes, there are "flashes of a roll of film ending"). The act of chopping within the film cuts the film off with a few final "flashes," sputtering colors, and finally "black." The ending thus emphasizes the means of making the film, especially the editing, which can be thought of as cutting away the deadwood, eliminating the stale, familiar representations of the visual world so that new ways of seeing can have room to grow.

In its fusion of method and message, the film also joins and temporarily shapes the viewer's process of visual perception. This is its specifically perceptual significance, which emerges when Clark stops referring to recognizable objects ("axe chopping roots," "sprocket holes move slowly down the frame," and so on), and begins listing simple visual impressions ("flashes," "white/black/orange," "orange/black/blue/black," and so on). These impressions of changing light and color, combined with the quick, nervous rhythms of the editing, allow us to experience with our own eyes the intensity, the flashing and surging of energy that Brakhage has given to light moving in time. This is visual renewal, and to see film in this way is to know it sensuously and as immediately as the nervous system knows something is hot—or to use a subtler analogy and one truer to Brakhage's stated interests, as the body "knows" itself through the "movement of its own tissues," to quote Charles Olson.

In the interview preceding *Metaphors on Vision* , Brakhage refers specifically to Olson's "Proprioception," a collection of notes or "working papers" (as Olson's editor calls them) concerned with that sense of the self one derives from perceptions of one's own body: "PROPRIOCEPTION:

The Dog Star Man wanders in a maze of bare branches and superimposed streaks and flares of light in *Dog Star Man, Part 4* .

The Dog Star Man chops dead wood amid superimposed lights and sprocket holes in *Dog Star Man, Part 4* .

the data of depth sensibility / the 'body' of us as object which spontaneously or of its own order produces experience of, 'depth' Viz SENSIBILITY WITHIN THE ORGANISM BY MOVEMENT OF ITS OWN TISSUES."[16] It is a very short step from this definition and its corollary, "that one's life is informed from and by one's literal body,"[17] to Brakhage's goal of making films that must be "taken in*to* the viewer in *thru* his experience of himself in the act of seeing." While taking in the lights, colors, textures, fleeting images, and darkness that bring *Dog Star Man* to a close, one can hardly avoid an immediate and nearly physiological sense of one's own "act of seeing."

   In that sense, vision can be "proprioceptive." It can produce the opposite of the disembodied, objective "view" that Gibson labeled "the visual world" and that social convention (buttressed by orthodox studies of visual perception)

takes to be the correct and normal way of seeing. Visual renewal arises from a more direct, physiological sense of light-eye-brain interaction.

Since Brakhage's goal as a filmmaker is to create equivalents of "the act of seeing," "film is, thus, premised on physiological sense—*takes* Sense as Muse," as he wrote in an article published in 1967.[18] To Jonas Mekas, Brakhage wrote, "I find myself feeling that it is the total physiological impulse of a man must be given form in the making of a work of, thus, called, art."[19] And to Michael McClure: "I am simply here involved with a process so naturally always existent its workings have been overlooked: that the light takes shape in the nerve endings and IS shaped, in some accordance we call communication, thru physiological relationship."[20] Visual renewal is a way of looking again at that "process so naturally always existent its workings have been overlooked." It depends on the filmmaker's ability to shape light's movement in ways that not only communicate with the viewer but retain some sense of the interplay of brain, nervous system, and the eyes that receive the light of the external world.

This is why Brakhage has taken exception to William Blake's neat couplet: "We are led to believe a lie / When we see *with* not *through* the eye." For Brakhage, the filmmaker engaged in "giving sight to the medium," as he writes in "A Moving Picture Giving and Taking Book," must see" '*with, not through* , the eye' (William Blake), *with* , rather than thru, machine."[21] In Brakhage's dialectic of eye and camera, the "machine" is no more a "window" than the eye is. Both eye and "machine" *make* what is seen; hence, cinematic equivalents of seeing cannot be divorced from

the materials and processes of filmmaking, any more than human sight can be separated from the body's visual system.

It is, then, "*with, not through* , the eye" that Brakhage would have the viewer experience—not simply see depictions of—the process of visual renewal. Both the inspiration for his films and their means of communicating with the audience derive from the premise that in each moment of seeing, the world is made anew. "Everything is new to the eye. Everything at every instant is new," Brakhage has said. "Only in the long take, it begins to decay and get old. So that first impression, if fully realized, if fully lived, that is fixed for all time."[22] Equivalents of those first impressions are what Brakhage strives to fix for all time in his films: "So the whole point is, in bouncing light off things, or catching it howsomever, that everything shall be something integrally new. It will be new anyway, but if it doesn't maintain its newness then I have failed, because *I* am new at every given moment."[23]

The "flashes," brief glimpses of "white," "orange," "blue," and moments of "black" at the end of *Dog Star Man* summarize the process of seeing everything "integrally new." They produce a metaphor of vision in the most direct way possible: by making the viewer aware of seeing as a physiological, nerve-centered event before it becomes a conscious recognition of labeled and familiar objects and events. Visual renewal, in other words, restores the perceptions of the "untutored eye."

3—

New ways of seeing and of understanding what can be seen have been Brakhage's principal preoccupations for nearly four decades. Only his earliest films, as Brakhage has said, drew their inspiration from "drama" rather than from the dynamics of perception.[24] The change came with *Desistfilm* (1954), in which, Brakhage explained many years later, "I was beginning to accept my own sight."[25]

What Brakhage accepted was the jerky, discontinuous movements of the eyes themselves. For example, during the teenagers' party that is the subject

of the film, one shot begins with a close-up of a hand on the neck of a mandolin, then slides down to the other hand strumming the strings, moves up to the face of the boy playing the instrument, then darts diagonally downward to the hand of another boy holding a cigarette to his lips, and as he takes a deep drag, the camera moves upward to reveal his full face. A cut replaces that face with another boy's face, and then in the same

shot, the camera pans quickly to a fourth boy's face, edges to a tighter close-up, then sweeps back across the room, veers up to the ceiling, plunges back down again, and in a series of circular movements, zeroes in on the face of a girl who is the center of the party's tensions and desires.

The camera movements are motivated in part by the emotional intensity of the scene, but they are also evidence of Brakhage's nascent acceptance of his own sight. Catching and releasing one point of interest after another, the camera moves as the eyes do when they dart from detail to detail of an unfamiliar scene. As Brakhage quite rightly notes, eye movements are not like smooth, continuous pans: "The eyes are clutching at things. They are at times almost clawing to prevent this [smooth panning] movement." So in *Desistfilm* , the camera "goes up curtains, grabbing patterns and arrives where it does, stays there or doesn't, because that, at the moment, is either vital to me or not."[26]

Such camera movements are indeed characteristic of the way the eyes actually scan a scene. Rather than slide smoothly from point to point, they make a series of short jumps, or saccades, with intervening pauses of 1/10 to 3/10 of a second. When the eyes follow a moving object, their movement is less saccadic but never absolutely smooth. Even when "fixed" on one point, the eyes are engaged in three involuntary movements: a slow "drift" away from the point of fixation, a series of tiny saccades that flick the fixation point back to the center of the fovea (where the focus is sharpest), and a continuous high-frequency tremor. The eyes are never still, because as Alfred Yarbus explains, "Good conditions for perception cannot be obtained if the retinal image is strictly stationary."[27]

Blinking and saccades are ways of constantly renewing the perceived image. After each blink or saccade, "new signals arise from the whole retina or from certain of its parts." Yarbus found that "ordinarily, the end of a blinking movement or the end of any saccade (a very large voluntary one or a small involuntary one) is always the beginning of a new process of seeing." It is "new" because "certain signals arising from the retina are inhibited while others reappear."[28] Here is still another reason to take Brakhage literally when he says, "Everything is new to the eye. Everything at every instant is new."

During each saccade the retinal image is probably blurred, but the blurring and moments of blackness that accompany each blink of the eyelids are ignored by normal vision and rendered invisible in the conventional visual world. For Brakhage, however, they became unavoidable aesthetic considerations. "I have increasingly worked with this quality of seeing—this jumping," he says. "The problem is that most people are reading these films out

of the trained experience of the normal film. To them, my film is making the statement that the subject or person is jumping and leaping about. But what I am really stating is that the eyes jump and move about."[29] They do indeed "jump and move about," not only to renew the retina's signals to the rest of the visual system but also to satisfy curiosity, assuage fears, feed desires—in brief, to make their contribution to what Rudolf Arnheim calls the "total engagement by which the organism lives in its world, acting upon it and being modified by it."[30]

Moreover, as Arnold Gesell notes, when the eye shifts focal lengths it seems to want to "catch" and "hold" objects in its view. This leads Gesell to call

the eye "a teleceptive-prehensory organ" that "gropes and grasps" the world around it.[31] The explanation for this can be found, at least in part, in the eye's evolutionary development. The eye and the visual areas of the brain evolved in direct relationship to the increased ability of primates to see, grasp, and move about. "The forces of evolution," Gesell writes, "had to provide continuously for a harmonious inner-adjustment between eyes, hands and feet."[32] Although increased prehension and manual dexterity permitted human vision to become more "versatile" (Gesell's term), the same "inner-adjustment" continues to guide our "act of seeing." While retaining traces of their evolutionary heritage, the eyes have become the swiftest and most sensitive "limbs" of the body—and Brakhage's hand-held camera is a most appropriate means of conveying their capacity for "clutching," "clawing," "grabbing," and "jump[ing] continuously."

Like Gesell (whose classic studies of child development support many of Brakhage's personal observations and intuitions), Brakhage has argued that sight is inextricably bound to the "sense" of movement. Gesell writes, "Specific acts of vision always occur within the total unitary pattern of the organism. Mentally they have a motor basis."[33] Brakhage pursues the same notion in a letter to James Tenney:

I sense "*motion* " as the first sense, at least in the sense of "control" viewable as "response," long before either "touch," where one could make a verb of it in relation to a baby, and "seeing," where the eyes could be said to be moved.

As evidence Brakhage cites

that particularly fascinating movement of the whole infant head, wobbling forward in straighter and straighter, less and less wobbling, bee-line, zeroing-in so to speak, on the breast which does, then finally, depend upon the tactile, lips to nipple, for "the connection" so to speak. Sight does, finally, negate some of the urgency of this movement, finally putting an end to "the wobble"; but I am convinced the brain, alive center of this conscious-seeming head movement,

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must from the start BE consciously impressed by movement as prime instrument of primal search.[34]

Here, in other words, is another motivation for Brakhage's camera movement: the "primal" sense of movement itself. His hand-held camera expresses the body's integration of tactile, kinetic, and visual senses.

When Brakhage writes in *Metaphors on Vision* , "One may hand hold the camera and inherit worlds of space,"[35] or when he tells an audience, "I've trained myself to hold this camera so that it will reflect the trembling or the feeling of any part of my body; so it is an extension, so that it becomes a thing to in-gather the light,"[36] he is simply acknowledging the body's inevitable role in "giving sight to the medium." Gesell writes, "Vision is an act, almost a creative act, which requires total and detailed participation of [the body's] entire action system."[37] Brakhage would say the same thing, except he would leave out the qualifying "almost." For him vision *is* a "creative act."

By the late 1950s, in films like *Loving* (1957), *Anticipation of the Night* (1958), and *Sirius Remembered* (1959), hand-held camera movement had become one of the most pronounced characteristics of Brakhage's visual expression but never the only one. Not only are the movements tightly edited, but frequently they are augmented by other visual effects such as flares of light, superimpositions, and paint applied directly to the film surface.

In *Loving* , the camera races over the ground, rushes up tree trunks, and sweeps in blurred arcs across the edge of a forest clearing. At other times it moves only slightly, rocking and gliding in close-ups of a man and woman embracing. In one passage Brakhage intercuts blurred pans of the forest and nearly stable close-ups of the lovers. The effect is a percussive glance-*gaze* -glance-*gaze* -glance-*gaze* —a rhythm in keeping with the film's overall structure and with the camera eye's ambivalence toward its intrusions on the lovers' intimacy. Later in the film, yellowish flares encroach on and finally efface images of the woods. There follows a flickering sequence of clear frames and fleeting images of the ground and a pine branch. Like the flashes at the end of *Dog Star Man* , these flickers suggest the pulsing energy required for the "creative act" of seeing.

Sirius Remembered includes similar passages of "white blinking," one of which is composed of rapid alternations of clear leader and images of the ground partially covered with snow. Also like *Loving* , this film is constructed from conflicting movements of staring and looking away, which are repeated again and again as Brakhage's camera catches sight of, then
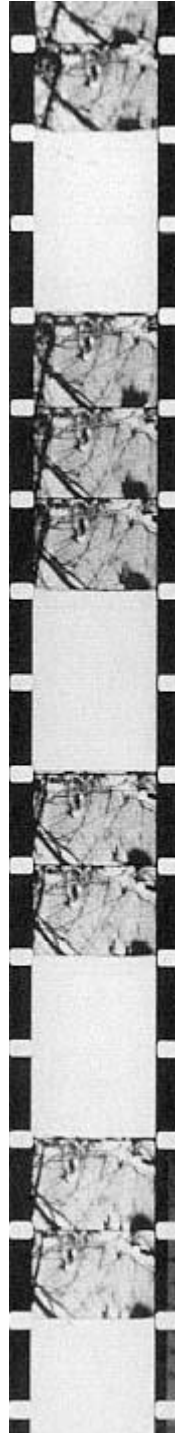
Alternating clear frames and images
of the ground produce a blinking
rhythm in *Sirius Remembered* .

veers away from, the body of a dog decaying on the forest floor. The camera compulsively returns to the dog, but always by way of editing, never by reversing its movement during the same shot (thus offering a good example of the editing eye's influence on the camera-eye's movement).

Longer than *Loving* and more complex in its camera movement and editing, *Sirius Remembered* also carries the "creative act" of seeing a step further through the introduction of dissolves and superimpositions. Treetops are moved by dissolves rather than by the wind; the bared teeth of a dog's partially decayed mouth are accompanied by faint white superimpositions; one eye of the dog stares through superimposed dead leaves and twigs on the ground; rapid tilts up to the treetops are completed in brief dissolves to the dog's body stretched out on the ground under the trees; still shots of the dog are superimposed with repeated quick pans that launch a second image of the dog toward the edge of the frame; superimpositions of quick tracking movements forward lift one image of the dog toward the viewer, while the other image continues to show the dog lying in the tall grass at the edge of the woods. In keeping with its thematic development of death, decay, and regeneration, the film's dominant impression is of unceasing movement in an environment that is superficially completely still. It is the *seeing* that is moving in accordance with what Brakhage was seeing and feeling and also in accordance with the processes of nature: the transference of energy from the decaying animal to—and through—the earth it lies upon.

Anticipation of the Night deals with physical and spiritual death, symbolized by a suicide at the end and summarized in Brakhage's view at the time that "all of childhood was just an anticipation of the night of adulthood."[38] Yet, like *Sirius Remembered* , it is intensely alive in its camera movement and editing strategies. It may be that as Ken Kelman suggests, "The pressure of death breaks down the habitual ways of seeing and makes possible absolute and direct vision of life, vision without preconception or restraint."[39] Or, in Sitney's gloomier view, the film as a whole "describes the doomed quest for an absolutely authentic, renewed and untutored vision."[40] Thematically, the quest for "untutored vision" may be doomed, but formally it succeeds—at least to the extent that camera movement can "break down the habitual ways of seeing" and achieve a more precise equivalent of the direct and immediate act of seeing.

The camera may seem to move "without preconception or restraint" in *Anticipation of the Night* , but its movements are not without meaning and metaphorical significance. A building resembling an ancient Greek temple for example, is always seen to be level within the frame and always

brought in and out of the frame by straight horizontal and vertical movements that are as classically ordered and balanced as the architecture of the temple itself. A baby crawling on the grass, however, is presented in impulsive, erratic camera movements; most shots of a sleeping child are smooth, hand-held pans quietly tracing the child's still form on a bed. The moon dances to the rhythm of the trembling camera; rows of glowing street lamps advance or recede in exaggerated or flattened perspective as the camera travels along nighttime streets; lights on carnival rides twist, turn, circle, and whiz across the screen in abstract streaks of color. Trees—in daylight, twilight, and at night—travel through the frame again and again, as they might past a car's window (one of the many suggestions of the protagonist's inexorable journey toward the "night" of his death).

Anticipation of the Night , Michael McClure writes, "*takes place inside of a man's vision* , and the spectator merely has to watch," which is something many spectators find hard to do until they can accept *this* man's vision (not necessarily *what* is seen but *how* it is seen) as equivalent to their own.[41] In addition, Brakhage's camera movements and editing involve formal and thematic considerations, as well as reflect psychological and even symbolic concerns: "When I made *Anticipation* I was of course still sunk very much in

metaphor," Brakhage points out.[42] But they also show Brakhage's increasing responsiveness to the immediate realities of visual perception. Explaining why he left out shots of a burning rosebush, Brakhage says, "The image was too myth-structured, too unreal to me, to be used in *Anticipation of the Night:* it had to be made more out of eye sources."[43]

Hand-holding the camera has been one of Brakhage's principal means of staying close to "eye sources," which means, as well, close to the body and its "entire action system," in Gesell's phrase. This strategy has distressed some critics. Parker Tyler complains that Brakhage's "racing rhythms" reveal a "crude infantile compulsion,"[44] and Annette Michelson once labeled Brakhage's camera movements "crude automatism"—though she subsequently retracted that judgment and became one of Brakhage's most astute supporters.[45] One suspects that these negative reactions, like Sitney's refusal to close his eyes to find equivalents of Brakhage's painting on film, stem from a prejudice against the body as the source of art, against "Sense as Muse," and therefore against "giving sight to the medium *with, not through* , the eye . . . *with* , rather than thru, machine." Brakhage's hand-held camera demonstrates, however, that the "machine" can gain in sensitivity and flexibility when it enters into a dialectical give-and-take with the "eye sources" from which Brakhage draws his inspiration.

4—

For Brakhage the sources of vision are not limited to what the eye takes in. They include as well the light produced within the visual system itself. "I think," he wrote to Robert Kelly, "there is some 'short circuit' of light pouring into any eye, as it 'meets' that person's out-put/memory's-discharge, and that we SEE in midst of a smoldering fire of cross-currents."[46] Especially during emotional crises, Brakhage found that he saw the scene in front of his eyes and at the same time saw "patterns that move straight out from the inside of the mind through the optic nerves. In other words, an intensive crisis I can see from the inside out and the outside in."[47]

Although the fullest possibilities of seeing combine "inside" and "outside," Brakhage has taken particular pains to describe and find equivalents for seeing that comes from inside the visual system, because it is less often noticed and much less often represented in cinematic images. Yet, like peripheral vision and saccadic eye movements, it is part of everyone's vision and therefore must be taken into account by anyone "giving sight to the medium."

For *Thigh Line Lyre Triangular* (1961), Brakhage painted on the film to produce equivalents of what came from "inside" each time he watched the birth of one of his children. In an essay published in 1971 he writes,

When I photographed the births of my children I saw that with their first intakes of breath their whole bodies were suffused with rainbowing colors from head to toe: but the film stock always recorded only the spread of reddish blotches across the surface of the skin: and so, by the time I had photographed the birth of my third child and in each occasion seen this incredible phenomenon, I felt compelled to paint some approximation of it directly on the surface of the 16mm film and superimposed, as it were, over the photographed images of the birth.

There were other visual impressions coming from "inside" that, as Brakhage goes on to explain, required a different mode of recreation in the film:

I felt free while editing this third birth film to also paint, on each 16mm frame at a time, all the visions of my mind's eye and to inter-cut with the birth pictures some images I had remembered while watching the birth—some pictures of a Greek temple, polar bears and flamingos (from a previous film of mine [*Anticipation of the Night*]) . . . images which had of course, no real existence at the time of the birth except in my "imagination" (a word from the Greek meaning: "image birth") but were, all the same, *seen* by *me* as surely as was the birth of the baby.[48]

Brakhage's statement can also serve as an implicit rebuttal to two common explanations for his painting on film: that it is motivated by purely formal, painterly concerns or by the desire to call attention to the material nature of the film medium. Although these are not irrelevant to Brakhage's intentions, they are tangential to his guiding concern with documenting what actually was "*seen* by *me* ."

When Brakhage writes in *Metaphors on Vision* , "My eye, then, inspiralling, frictioning style-wise, being instrument for striking sparks, is bequeathed visions at every illumination it's struck to create," he is not indulging in fanciful rhetorical flourishes but is seeking to evoke some literal sense of the light— phosphenes and various manifestations of visual "noise"—that is "available to any viewer willing to release his eye for comparable movement."[49]

Not only are these phenomena of "closed-eye vision" important to Brakhage because they are there and therefore essential to any complete documenting of seeing, but also because they draw attention to the internal processes of the visual system itself, to the medium of seeing within the message of sight. Brakhage puts it this way: "You are seeing yourself seeing. You're seeing your own mechanism of seeing expressing itself. You're seeing what the feedback of the mind puts into the optic nerve ends that cause them to spark and shape up like that."[50] Here, in effect, is another way of saying that we see "*with, not through* , the eye" and that behind closed eyes one can see evidence of those processes of seeing at work.

To make equivalents of the introspective awareness of seeing, Brakhage not only paints on the film but bleaches, scrapes, gouges, and even coats it with mold and crystals. He also emphasizes the graininess of the film's emulsion, most apparent in his 8mm *Songs* (1964–69) and in their more recent reprinting in 16mm (1980–86). Although the visual effects of these techniques vary tremendously, they have in common a grainy texture in constant flux. This comprises the base of what Brakhage frequently refers to as "closed-eye vision." The grains may flow evenly across the screen or swirl and hover in a tumultuous crowd, like a cloud of gnats or like silty water blocked and turning back on itself. They may produce amorphous waves of color-light-texture or cluster into patterns and recognizable though highly mutable shapes. Whatever their form, they are intended to be equivalents of what anyone might experience as "the rhythm-pattern-flashes of the eye's nerve-ends, making up the grainy shapes of closed-eye vision."[51]

In addition to phosphenes and visual "noise," closed-eye vision in-

cludes the more precise images of hypnagogic vision. Hypnagogia has long been recognized as perception experienced while falling asleep, waking up, or any time when consciously directed awareness becomes disengaged from ordinary, active intercourse with the external world. Such mental states produce visual images ranging from phosphenelike shapes and patterns to distinct faces, figures, and scenes. However it manifests itself, hypnagogic vision originates in the brain's own neurological circuitry. According to one recent theory, it begins in the so-called old brain, the limbic and reptilian systems whose functions preceded the logical and linguistic formulations imposed upon thought by the newer (evolutionarily speaking) cerebral cortex.[52] If this is true, hypnagogic images would be particularly appropriate examples of the "eye adventures" that Brakhage says are "completely beyond any linguistic expression whatsoever."[53]

Typically, hypnagogic images appear briefly, change rapidly, and seem to come and go without the conscious volition of the person experiencing them. Brakhage's films offer innumerable examples of such images, which sometimes appear alone, sometimes in superimposition with other images, and sometimes woven into the grainy textures of other forms of closed-eye vision. In a letter to Robert Kelly, Brakhage writes,

I think the mind's eye's electrical output to the backside of its optic nerve does express itself in rhythm shifts, many clusters of same per second, much as the ear's hearing-of-innards is. . . . [T]he

comparable light-beeps of eye's out-put do tend, *thru colors* (order of colors, in rapid flashes), to make the shapes of closed-eye vision which resolve into the specific details of memory's pictures.[54]

In other words, "closed-eye vision" is not limited to "abstract" patterns of grainy light and color. It may include the clear, recognizable images of hypnagogia, which emerge full blown yet seemingly unsummoned from the depths of consciousness.

No film explores this process more thoroughly than *Scenes From Under Childhood* (1967–70). During the early planning stages, Brakhage said he would explore "the possibilities of creating, and depending upon, a level of film which can occur as exclusively in the mind of the viewer as certain levels of *Dog Star Man* , etc., can only occur in the eye."[55] If *Dog Star Man* emphasizes—though certainly not exclusively—what comes "from the outside in," then *Scenes From Under Childhood* emphasizes what comes "from the inside out." Discussing the film after its completion Brakhage explicitly connects his "use of paint and material suspended in oil [and] superimpositions" with an attempt to "express something of this world

that's so alive to children: of closing the eyes and seeing explosions and dots and so on."[56] Like Gerald Oster in his study of phosphenes, Brakhage refers to Rhoda Kellogg's studies of children's art and suggests, "These drawings they were doing at the very early stage had a lot to do with closed-eye vision." Speaking more generally about the inspiration for *Scenes From Under Childhood* , Brakhage goes on:

The strangest world I think we have available to any sense is the world that occurs when the eyes are closed. And this whole work could be considered as moving in that direction, not just where I'm using dots and specks and patterns, but in fact in the memory process."[57]

The "memory process" of *Scenes From Under Childhood* begins in Part 1, with rapid dissolves of red and black—actually red and an ephemeral green-black produced by red's negative afterimage briefly retained during the subsequent frames of black. Since afterimages are created by and can only exist in the visual system itself, they offer an apt equivalent for seeing "from the inside out." They engage the viewer's visual system in a special way, since it is the viewer, not the filmmaker, who gives the black its (in this case) green overtone. In a very literal sense, as Brakhage has pointed out, producing afterimages is a way of "mov[ing] the film into the minds of the people watching it."[58]

Amid the red-(green) black alternations some orange begins to appear; then a fluttering of oranges and reds; and at some moments, an odd blinking of horizontal lines across the frame. Finally a wavering, distorted image of a small child appears among superimpositions of vague red shapes and flickers. Amid the superimpositions, blurry red shapes, and flickering colors, images of the baby's world begin to emerge: an overturned chair, passing figures of older children, polished floorboards, a door swinging open, a lamp, clothes in a closet, a donkey, the outside wall of the house, the mother picking up the baby, and the baby sitting, crawling, and struggling up to a standing position. Finally, in a shot of total clarity, a little girl tries to feed the baby, who constantly interferes by grabbing at the spoon in her hand. Part 1 ends with this clear-eyed image of conflicts arising at the juncture of instinctual desires and social roles. The tight, steady framing and sharp focus offer the first intimation that the multilayered, polymorphous visual experience of the "untutored eye" can evaporate in the heat of single-minded, task-oriented activities and the exertion of individual wills.

The red that predominates in Part 1 may draw upon what Brakhage called "the commonest type of 'closed-eye vision,' [which] is what we get

when we close our eyes in daylight and watch the moving of shapes and forms through the red pattern of the eyelids."[59] Or it may come from the way the mind's eye colors memory. All of the children are dressed in red in the early passages of Part 1. Their clothes may have absorbed the coloring of memory;

or perhaps the clothes are the source of the color memory has given to these scenes of/under childhood. Either way, the colors, like the superimpositions and various pulsations and flickers of light, engage the viewer's perception at a level "dominated by the rhythms of inner physiology," as Brakhage puts it in a letter to Bruce Baillie.

The relevant passage in that letter illustrates Brakhage's sense of how theme, structure, and imagery in Part 1 combine along a line of development from "inner" to "outer" seeing:

[I]t's coming to seem to me that "Scenes From Under Childhood" on its primary visual level IS a track of the evolution of SIGHT: thus its images flash out of blanks of color, thru fantastic distorts/twists of forms and orders (those fantasies wherein one *imagines* oneself: even suggesting those "pre-natal" fantasies wherein Freud to his despair, finally found that unanalysable nest hatching all basic neurosis), space/shape absolutely dominated by the rhythms of inner physiology, then shaking like jellied masses at first encounters with outers, the beginning of The Dance, shattering OUT of even memory's grip thru TO some exactitude of sight/light.[60]

The feeding sequence ending Part 1 could be an equivalent of the "shattering OUT of memory's grip thru TO some exactitude of sight/light." Although it retains a visual richness and nearly comic sense of sibling rivalry—over who will control the spoon—the conclusion of Part 1 presages the conclusion of the fourth and final part of the film, in which the "exactitude of sight/light" has been reduced to gray images of "organized" play—track and field sports, baseball, flying motorized model planes—and of public buildings in a flat, gray photograph. Thus the end of Part 1 seems to parallel the beginning of the end of natural, spontaneous, "untutored vision": the undifferentiated inner-outer seeing that Brakhage believes to be inherent in early childhood.

In subsequent parts of the film Brakhage introduces explicit equivalents of "seeing explosions and dots and so on." Large irregular flakes and disks of glowing white light hover, drift, and dance; swarming, grainy yellow-white specks sway like dust motes in invisible currents of air; scattered sparkles float aimlessly about or cluster in one or another part of the frame; dense showers of glittering golden flakes fall gently through the frame (producing images somewhat reminiscent of the snow in the glass

paperweight in *Citizen Kane* and conveying some of the same nostalgia for lost childhood).

Many of these manifestations of light could be described with a passage from *Metaphors on Vision* in which Brakhage describes the "non-blue" light he detects in the daytime sky: "seeing thru the so-called color of it, discovering light, now sighting it down to 'flakes,' 'God-gold,' 'falling,' 'down.' Metaphors—feathers, snow, reign, all golden."[61] (Brakhage notes in the same passage that young children may color the sky yellow in their drawings until they are taught to make it blue.) These and other equivalents of phosphenes and visual "noise" evoke the visual world of the child and the adult's mental return to childhood's mysterious and exhilarating richness of vision.

The equivalents of the "flakes" and "grainy moving particles" of light in Brakhage's films come from many photographed sources, as well as from painting, bleaching, and scratching the film and from the film's own grains of emulsion. Another equivalent, which Brakhage seems not to have recognized until the mid-1960s, is the television screen with its thousands of phosphorescent dots. In "Hypnagogically Seeing America," an essay that appeared in the *Los Angeles Free Press* in 1967, Brakhage explicitly linked the television image to the phenomenon of closed-eye vision:

The T.V. viewer becomes center-of-the-universe 1st time thru medium because the image-carrying-light comes directly at him (or, as McLuhan puts it: "The viewer is the screen") and comes en-meshed, or made-up-of, the television-scanning 'dots' which closely approximate his most private vision—his sense of his own optic nerve-end activity, seen as a grainy field of 'light'-particles when his eyes are closed, particles which seem to cluster into shapes in the act of memory and, thus, make-up the picture being re-membered as if it were a slide cast from the brain against the closed eye-lids.[62]

Some fifteen years later, in *Murder Psalm* (1980), Brakhage would use "television-scanning 'dots'" to complement painted, bleached, and stenciled equivalents of the "grainy field of 'light'-particles" in closed-eye vision. In that

film, the television screen supplies literal equivalents of the electrical activity of the visual system as well as of the brain and nervous system as a whole (which is particularly appropriate in a film that compares two kinds of massive electrical disturbances: those in nature that produce lightning bolts and those in the brain that produce epileptic seizures).

At the time of writing "Hypnagogically Seeing America," however, Brakhage's interest in the correspondences between the television image
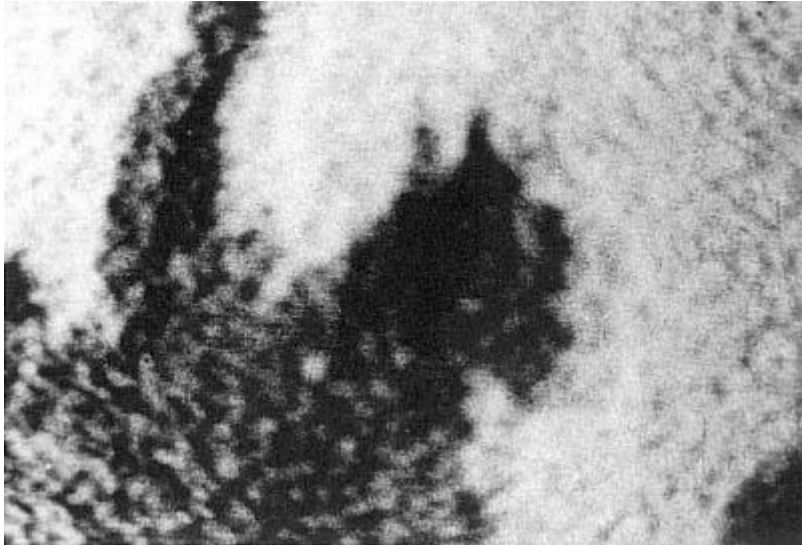
An equivalent of grainy closed-eye vision in *Murder Psalm* .

and closed-eye vision was of a different sort. What concerned him was television's power to infiltrate the viewer's memory processes:

The T.V. 'dots,' backed by the light-source and the pale blue-ish [in black-and-white T.V.] tone of it (prime color of closed-eye vision in deep memory process, blue tinting the whole grainy field when the eyes have been closed in a dark room for a long time), do pre-tend the brain of the viewer is IN THE 'SET,' a tendency that soon makes him feel as if what he's watching had always been stored in his own memory banks, as if he ought to act on instructions from T.V. as surely as he would on his own experiences as remembered.[63]

The implications of this "tendency" are especially dire considering that at the time Brakhage was writing, the United States was engaged in the Vietnam War, and television was the principle source of images of the war and the political and social events surrounding it. As a social critic, Brakhage wanted to alert people to the impact television was having on public attitudes toward the war. As an artist, however, he chose not to deal directly with the Vietnam War and its electronic extension in American life. Instead, he made *23rd Psalm Branch* (1966–67), an 8mm film about war in general and, more particularly, about his own memory's images (from newsreels and documentaries) of World War II.

The television image, as such, is not a source for *23rd Psalm Branch* , but the common ground shared by television and closed-eye vision *is* a

major visual element in the film. Some passages in the film are composed entirely of tumultuous blotches of painted colors, others of paint superimposed on photographed images. Newsreel shots of explosions are visually echoed in boiling swirls of orange and black paint; then, as if the energy of the explosion were dissipating, the painting becomes scraped and cracked and finally is replaced by orderly rows of dots gliding smoothly through the frame.

As Brakhage had emphasized in his letter to Sam Perry (see page 72), the "dot plane" of closed-eye vision includes many different sizes, shapes, and movements of dots. In *23rd Psalm Branch* they range from frenetically dancing spatters of ink and paint to rows of large round dots parading slowly across the screen. Often several sizes, shapes, and movements will be visible at the same time, such as tiny black pin-points sliding diagonally downwards while large

round dots slide in the opposite direction. This regimenting of dots occurs for the first time following footage of ticker-tape parades and a shot of Mussolini. At first the air is filled with fluttering bits of white paper, then as if under the influence of Fascism itself, the "grainy field" of white specks is converted into orderly rows of black dots superimposed on more footage of parades and public ceremonies. Subsequently, the tight rows of black dots become circles in a black grid laid over more newsreel footage.

Brakhage seems to imply that even one's "most private vision" may surrender to images of authoritarian leaders and the mass psychology they exploit. If this seems to be pushing beyond the limits of credibility—if not into the realm of paranoia—one should at least consider the fact that psychological states often have physiological counterparts. In this case the "grainy field of 'light'-particles," which permits us to "see ourselves seeing," may reveal the psychological response certain images elicit. This may be Brakhage's most despairing comment on the dangers mass-media images pose for individual sensibility.

The film ends, however, on a different note. Its closing shots of children playing with sparklers at night have been variously interpreted as hopeful and even ecstatic images of childhood innocence; as a balancing of playfulness and violence; and, most pessimistically, as allusions to "the Nazi *Walpurgisnacht* " and thus to "the seeds of war in the pastoral vision."[64] What seems clear, however, is that the sparklers offer a particularly accurate equivalent of the brilliant sparks of phosphenes, and the children in their innocent play are engaged in a ritual celebration of light as it may be seen in closed-eye vision. In the final shot of the film, sparks fly off a sparkler in the hands of a young girl who is rapturously whirling

about in a large cloak (a young priestess of light?). On closer inspection, however, the sparks appear to be superimposed on the image of the girl, which suggests that the sparklers are external equivalents of the internal sparks of the visual system itself. They are the bridge between seeing "from the inside out and the outside in."

5—

Whether the seeing comes from "inside" or "outside," its "medium" is light. Therefore, in "giving sight to the medium" of film, Brakhage works on the assumption that "what movie is at basis is the movement of light." As the moving light takes shape, it produces "what are called recognizable objects," after which "drama begins to come in, or story, or picture," but the basis, Brakhage insists, is always "the movement of light."[65]

In addition to its physiological, psychological, and cinematic significance, light has a metaphysical dimension in Brakhage's visual aesthetics. He frequently draws attention to Ezra Pound's translation of "Omnia quae sunt, lumina sunt"—"All things that are are lights" (*Canto LXXIV*)—from the writings of the ninth-century philosopher and theologian Johannes Scotus Erigena, and he often refers to the later school of English "light philosophers," in particular to Bishop Robert Grosseteste, whose treatise *De Luce* was an important source for Pound's—and hence Brakhage's—ideas about light. Drawing upon Neoplatonic thought, Grosseteste proposed that the whole universe derives from light. God is light in its purest and most immaterial form, and the visible world of things is light's outermost extension, where it takes on a material appearance or becomes most completely "corporeal," in Grosseteste's terms.

Erigena's statement "All things that are are lights," expresses what Brakhage has long believed to be "the natural condition of the film maker at the moment of making."[66] In cinema "all things that are" quite literally *are* lights moving in time; therefore Brakhage had at his disposal the ideal medium for conveying the luminosity he perceived in the world around him—except that

when "drama begins to come in, or story, or picture," viewers tend to forget about the basis of it all in "the movement of light." The challenge for Brakhage was to make light itself the film's subject, to preserve its luminosity without reducing it to purely abstract shapes.

In many of Brakhage's films, techniques such as extreme soft-focus, over and underexposure, flicker effects, negative and solarized images, flared frames, clear leader, and refractions of light in the lens have produced intermittent glimpses of light as a meaningful subject in its own

right. But with *The Text of Light* (1974), the two series of short films with roman and arabic numerals as titles (1979–82), *The Egyptian Series* (1984), and most recently *The Babylon Series* (1989–90), Brakhage has produced an impressive body of work with light as its overt and continuous subject. Although they are the films in Brakhage's oeuvre most likely to be labeled "abstract," they are more profitably viewed as concrete, literal documentaries of the physical and metaphysical light invoked by Erigena and Grosseteste.

Brakhage's comments at the time of making *The Text of Light* stress the film's equivalence with actual—if rare and hard to describe—perceptions of light:

I see light behaving in all kinds of ways that [are not] photographable with given means—that is, the given lenses and film stocks and so on. And most people don't see these things, although I've met some people who have seen them.

That light travels over the ground, that it pools—that there is a pool of luminescence which is very ephemeral, and which takes a relaxing of Western muscles in the eyes in order to be aware of. That light-streaks come down previous to rain—splitting the air—light-like phosphorescent streaks of . . . something! That I call light!

Also that where, in the Spring, before the grasses grow up and around these pools of light, there are up-shoots; it seems to be light shooting up, that shapes plant-like things, and then later plants come up there.[67]

In *The Text of Light* light does flow, pool, fall in streaks, shoot upwards, and take on innumerable forms in an ambiguous space that sometimes seems open to infinity and other times appears as flat as the screen itself. Some viewers see landscapes, cities, forests, oceans, sunsets, faces, and myriad living forms; others see chiefly light, color, texture, and rhythmical movement. A combination of both ways of seeing the film would probably be truest to what Brakhage calls the "primary impulses" of the film: Erigena's "All things that are are lights" and Blake's "To see a world in a grain of sand."[68]

Brakhage found visual equivalents of these "primary impulses" in sunlight refracted by a crystal ashtray and filmed with a macro lens held so close to the glass that it is impossible for the viewer to know how the images were created. By shooting one frame at a time as the light changed with the sun's movements, and by moving the camera very slightly between each exposure, Brakhage imparted to the camera's eye the minute shifts and tremors of a living eye and transferred that life to the images on the screen. Moreover, the glass itself gives the light a certain density or

Hints of a misty landscape in *The Text of Light* .
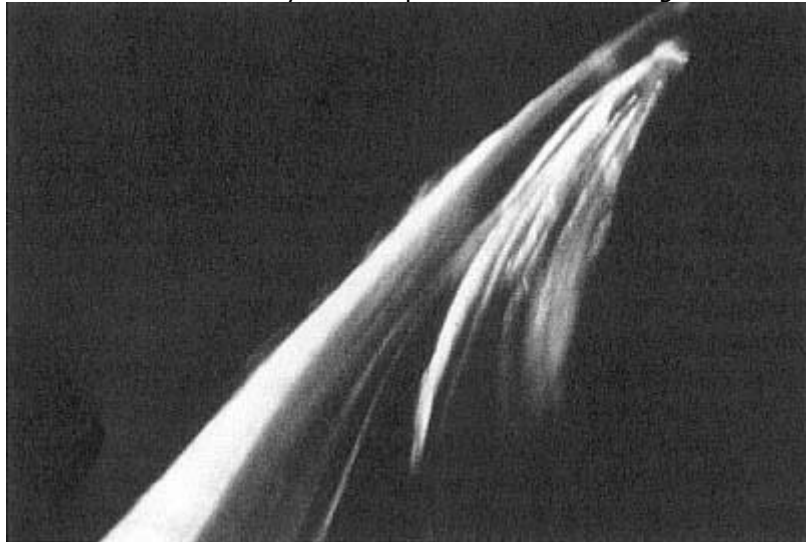
Light streaks downward through the darkness in *The Text of Light* .

"materiality," like that of physical objects. The light seems to take on the shapes, textures, movements, even the three-dimensionality, of things; yet, things in the film look like light. It is as if Brakhage were documenting the instant at which light achieves "corporeality" (in Grosseteste's terminology) but before its "glow" is extinguished in corporeal forms.

Because of these intimations of physical-spiritual relationships embodied in light, the film moves into what Brakhage calls Jordan Belson's "territory." What it means to enter that territory will be discussed in chapter 6, but it is worth noting now that as Brakhage worked on this film he carried on "a friendly argument in [his] mind with Jordan Belson":

He would say, O wonderful what it is, but why is it jerky? Or why not centered? Or, you know . . ., and to hold myself together I would say, No, Jordan, it has to be this way. So I, I owe him very much. He sustained me in that way a beautiful argument can, because it was very much in his territory. I mean this film is very much on his side of the street.[69]

So it is, but its way of conveying the perception of light is uniquely Brakhage's. The "jerky," off-centered images are not simply aesthetic preferences. They assert the physical presence of the eye/machine in even the most metaphysical contemplation of light. When Brakhage says it requires "a relaxing of Western muscles in the eyes" in order to see certain luminescences in nature, he is not implying an escape from the physiology of vision into some dreamy, other-worldly transcendentalism. He is alluding in yet another way to

"the untutored eye" and to breaking "the associational chain" that prevents us from seeing all that is available to be seen in *this* world.

The roman and arabic numeral films also occupy Belson's "side of the street." Introducing film *I* , Brakhage writes:

This begins a new series of films which ordinarily would be called "abstract," "non-objective," "non-representational," etc. I cannot tolerate any of those terms and, in fact, had to struggle against all such historical concepts to proceed with my work.[70]

Instead, he coined the term "imagnostic," to suggest a combination of image and knowledge. "Image birth is the heart of the matter for me," he told an audience at the first screening of films *I, II* , and *III* . "But that isn't sufficient," he continued. "Imago means so much more than image. Gnostic carries so much more than knowing; it carries it for example in the Biblical sense of knowing and birth."[71]

Presumably, Brakhage does not object to terms like "abstract" and "non-objective" because they imply images that are not "referential" (Brakhage's
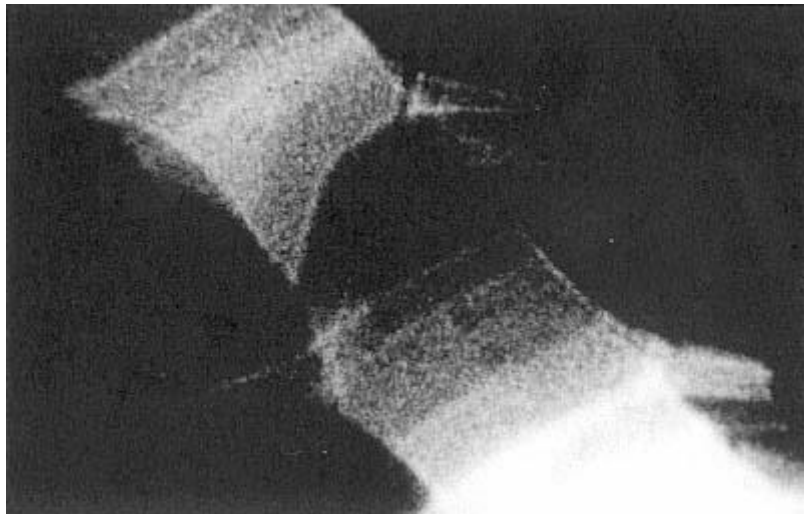
"Imagnostic" imagery in *III* of the *Roman Numeral Series* .
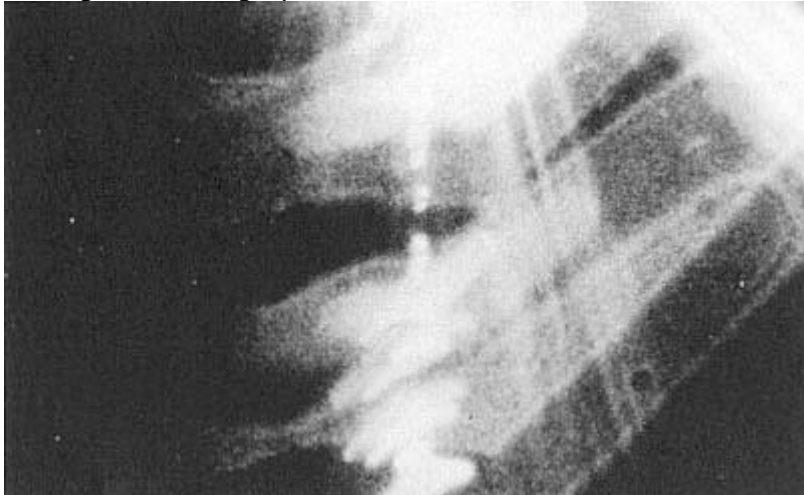
An image from the brain's "tree-of-nerves" in *14* of the
Arabic Numeral Series .

term), but because they fail to convey the intensity and physicality of "image birth." They also fail to specify the crucial contribution of the cinematic apparatus itself. These images were never seen, Brakhage says, "except in their making." Pursuing this line of argument, Brakhage explains:

I'm trying to find a place in the mind that is beyond picture or other than picture . . . some area that isn't drawing at least in any easy or recognizable sense on pictures or combinations of pictures, so that something new can be born.[72]

Although Brakhage soon dropped the term "imagnostic," he continued to draw upon sources "beyond picture" as he completed the roman numeral series and then went on to the arabic numeral films, *The Egyptian Series* , and *The Babylon Series* . Working with very soft focus, extreme close-ups or macrophotography, and innumerable unidentifiable lights and reflections, Brakhage produces a world of diffuse, mysterious shapes; misty glowing colors; piercing glints of light; and nearly total exclusion of "referential" shapes. Except for recurrent hints of light refracted through a camera lens—quivering, elongated diamonds, materializing and evaporating, hovering and sliding in and out of the frame—there is little to connect the imagery of the films to anything outside the creative meeting of the mind and the camera-eye.

Even so, despite the emphasis of these films on "mind's moving-visual-thinking," Brakhage does not forget the physiological basis of these mental processes. His persistent emphasis on trembling microrhythms and swift, dynamic juxtapositions of images (characteristic of his work as a whole) produces metaphors of the energy underlying thought's images, the electrical impulses that Brakhage envisions surging through the brain's "tree-of-nerves," as he puts it in a comment on the arabic numeral films.[73] By documenting the birth of images in the mind, Brakhage took another step along the "track of the evolution of SIGHT" he followed in making *Scenes From Under Childhood* .

In fact, from the moment he decided to "accept [his] own seeing" in *Desistfilm* , Brakhage committed himself to following that track—wherever it might lead. From open-eyed engagement with the light of the world; to closed-eye visions of dots, sparks, grainy fields of light, and hypnagogic images; to intimations of the electrical patterns of thought itself—Brakhage has pursued the implications of that early, crucial decision. In the process, he has remained true to "Sense as Muse" by gathering light and giving it forms that communicate with other "optical minds" and their own "moving-visual-thinking."

Chapter 5—
"Working in Light": Kenneth Anger

Never did eye see the sun unless it had first become sunlike.
—Plotinus, *The Enneads*

—*from* Rabbit's Moon

I see the lights! I see the party lights!
—Claudine Clark, sound track of Scorpio Rising

In the final moments of Brakhage's film *Creation* (1979), rays of prismatic color flash into the image from the top of the frame. It is sunlight falling through the high branches of a forest, striking the edge of the camera's lens and dispersing into a spectrum. That crystalline spray of light is Brakhage's homage to the source of creation in nature *and* cinema. Kenneth Anger honors the same source in the form of Lucifer, the angel whose name means "light-bringer." "Lucifer is the angel of light, a sunbeam," Anger has said. In Anger's personal

hagiology Lucifer is also "the patron saint of movies, the light behind the lens."[1]

"I'm an artist working in Light, and that's my whole interest, really." Any number of avant-garde filmmakers might have said that, but only Kenneth Anger would add, "Lucifer is the Light God, not the devil, that's a Christian slander. The devil is always other people's gods. Lucifer has appeared in other of my films; I haven't labelled him as such but there's usually a figure or a moment in those films which is my 'Lucifer' mo-

ment."[2] Coming shortly after the release of *Invocation of My Demon Brother* (1969), those comments mark a significant change in Anger's way of "working in Light": from an implicit expression of light's visionary powers to an explicit illustration of a mythology of light, in which Lucifer is the reigning deity.

As interesting as Anger's presentation of Lucifer may be, it is his pre-Lucifer films that offer the best examples of his skill at manipulating light's movement in time. In these films the special power of light manifests itself directly, without the mediation of Lucifer or the signs, symbols, and rituals of his worship. They offer abundant evidence that long before Lucifer became the personification and visual correlative of light, Anger was aware of light's peculiarly powerful influence on perception and used it for what he would call "magickal" effects. I would prefer to call them moments of heightened perception when the viewer experiences light's power—power that does not depend upon Anger's personal mythology or the esoterica of Aleister Crowley and the occult traditions he espoused. Without doubting Anger's indebtedness to Crowley—evidence of which abounds in interviews, in Anger's notes on his films, and in the films themselves—it is still possible to argue that Anger's most "visionary" images of light are not for the initiated only.[3] They are for everyone whose eyes are open to the light of the films, and whose mind is open to the visionary traditions of art and religion that both East and West have harbored.

1—

At the heart of those traditions is what Aldous Huxley calls "preternatural light," by which he means a special luminosity of objects seen during a visionary experience. Huxley describes and explores the implications of preternatural light in *Heaven and Hell* , his sequel to the better-known *Doors of Perception* .[4] Whereas the latter concentrates on Huxley's own experiences under the influence of mescaline, *Heaven and Hell* transposes his personal experience to cultural and historical levels. Drawing his evidence from reports of experiments with sensory deprivation and hallucinogenic drugs, as well as from the testimony of seers, mystics, poets, and visual artists, Huxley makes a comparative study of visionary experiences and finds that such experiences have certain visual features in common. Since the same visual features appear in Anger's films, I propose to approach Anger's treatment of light by way of Huxley's account of the visionary experience.

"First and most important," Huxley writes, "is the experience of light. Everything seen by those who visit the mind's antipodes is brilliantly illuminated and seems to shine from within" (75). In the writings of visionaries, Huxley notes, this "preternatural light" is commonly expressed through references to gemstones, pearls, gold and silver, crystal and glass; in other words, to those materials in our normal, nonvisionary world that are most luminescent, most intensely glowing with color, and therefore most like the "self-luminous objects" seen by the visionary. As a characteristic example, Huxley quotes from the Hindu *Ramayana* : "The country all around is covered

by jewels and precious stones, with gay beds of blue lotus, golden-petalled. Instead of sand, pearls, gems, and gold form the banks of the rivers, which are overhung with trees of fire-bright gold" (83). A Biblical counterpart to this vision of the Other World is found in the Book of Ezekiel: "Thou has been in Eden, the garden of God. Every precious stone was thy covering, the sardius, topaz and the diamond, the beryl, the onyx and the jasper, the sapphire, the emerald and the carbuncle, and gold. . . . Thou hast walked up and down in the midst of the stones of fire" (84). On the evidence of passages such as these Huxley concludes that "precious stones are precious because they bear a faint resemblance to the glowing marvels seen with the inner eye of the visionary" (86).

Furthermore, Huxley argues, "Whatever, in nature or in a work of art, resembles one of those intensely significant, inwardly glowing objects encountered at the mind's antipodes, is capable of inducing, if only in a partial and attenuated form, the visionary experience" (87). Hence the gleaming altars and glowing stained-glass windows in the cavernous gloom of medieval cathedrals; hence the gold and silver, the bejewelled and pearl-encrusted art and artifacts at shrines throughout the world. "Polished metals and precious stones are so intrinsically transporting," says Huxley, "that even a Victorian, even an Art Nouveau jewel is a thing of power. And when to this natural magic of glinting metal and self-luminous stone is added the other magic of noble forms and colours artfully blended, we find ourselves in the presence of a genuine talisman" (88).

Kenneth Anger, who once remarked that filmmaking "is like making a painting out of real gold and jewels," creates cinematic equivalents of the "talismans" Huxley so eloquently describes.[5] The basis of that equivalence is light: light with the gemlike intensity of a visionary experience.

Anger's most literal association of light with the vision-inducing power of precious stones and metals appears in the opening sequence of *Inauguration of the Pleasure Dome* (1954, revised 1960, 1966, 1978). From a

glowing horizon, soft beads of light climb slowly upward. Then, as the focus sharpens, the lights are revealed to be a string of diamondlike gems rising from the floor to a bed. Supine on the bed, Lord Shiva (as Anger identifies his protagonist) slowly wraps the string of gems around his hand. After langorously selecting several sumptuous rings from his bedside table and slipping them on his fingers, he lowers the dangling gems into his mouth and swallows them.

This strange opening is echoed three times in the film. Lord Shiva subsequently swallows a large crystal pendant, a pearl, and a gold-link snake—gifts ceremoniously presented to him by his guests. In his description of the film, Anger identified each gift as a "talisman," which calls to mind Huxley's description of a Victorian or Art Nouveau jewel as a "genuine talisman." For Anger, as for Huxley, the source of this talismanic power is light. The softly focused opening of *Inauguration of the Pleasure Dome* makes the gems look like a string of small lights. By sharpening the focus as the shot continues, Anger cinematically transforms the lights into precious stones. Although he hardly belabors the point, Anger has opened his film by demonstrating the source of the gem's potency (in terms that Huxley's discussion makes even clearer) and has provided a clue to the symbolic significance of swallowing the string of gems, the crystal pendant, the pearl, and the gold snake. In material forms resembling the "self-luminous objects" of the visionary experience, Lord Shiva is ritually ingesting light itself.

These rituals suggest a Eucharistic ceremony, and in a headnote to one of his descriptions of the film, Anger quotes Aleister Crowley:

A Eucharist of some sort should most assuredly be consumed daily by every magician, and he should regard it as the main sustenance of his magical life. It is of more importance than any other magical ceremony, because it is a complete circle. The whole of the force expended is completely re-absorbed; yet the virtue is that vast gain represented by the abyss between Man and God. The magician becomes filled with God, fed upon God, intoxicated with God. Little by little his body will become purified by the internal lustration of God.[6]

Through this association of the jewels with the Eucharist, Anger implies that it is not enough to possess and contemplate these "talismans" of light. They must be consumed if their vision-inducing power is to be realized. Then Lord Shiva may be "purified by the internal lustration of God."[7]

Anger intended the film as a whole to have a comparable Eucharistic effect on the audience. In an interview published in 1967 he describes his

Donning a sequined black dress in *Puce Moment* .

goal: "[I] wanted to create a feeling of being carried into a world of wonder. And the use of color and phantasy is progressive; in other words, it expands, it becomes completely subjective—like when people take communion; and one sees it through their eyes."[8] The effect is "progressive" in the sense that the frenetic rhythms and multiple superimpositions of the film's hallucinatory climax represent the cumulative "subjective" effect of the lush colors; the exotic costumes; the Beardsleyesque jewelry, draperies, and candles; and the somnolent movements and ritualized gestures of the hieratic characters in the first two-thirds of the film.

If Lord Shiva's ingestion of gems suggest that preternatural light may be taken internally, so to speak, then there is evidence in other films that it may be administered externally as well. It may be put on the body and worn, like the rings Lord Shiva puts on before swallowing the string of gems or the three large silver rings the protagonist of *Scorpio Rising* (1963) chooses for himself before going to the motorcyclists' party. Other motorcyclists cover themselves with vision-inducing ornaments, as Anger memorably records in the "Blue Velvet" sequence of *Scorpio Rising* —a sequence that may be more fully appreciated if we first examine the dressing scene in Anger's early film fragment *Puce Moment* (1949).

That film begins with a parade of elaborately sequined dresses. As each dress is held up to the camera, it passes in and out of focus, and as it does so its sequins turn into dancing dots of light against colored backgrounds.

The effect is most striking when the last dress appears: a black gown whose sequins flicker and gleam like a myriad of stars in a black sky. This is the dress the film's heroine puts on. She raises her arms above her head and laughs ecstatically as the dress descends, enveloping her in a sheath of glittering lights. To don the dress is to enjoy a "transporting" experience—as the pop songs on the sound track clearly announce: "My mind will listen to the stars . . . my mind is in the air," and, "Yes, I am a hermit, my mind is not the same. Yes, I am a hermit, and ecstasy is my game." Parts of *Puce Moment* appear in the superimposed material at the climax of *Inauguration of the Pleasure Dome* , which further suggests that the dresses are "talismans" of "preternatural light."

In *Scorpio Rising* the clothes of the motorcyclists take on a similarly visionary significance. Against black leather and blue jeans, the silver studs, chains, buckles, amulets, and trinkets shine with exceptional brilliance, and in some shots they flash their reflected light directly into the eyes of the audience. During this "dressing adagio," as Anger has called it,[9] camera movement and montage supported by Bobby Vinton's sinuous rendition of "Blue Velvet" meld the slow, studied gestures of the men into a continuous flow. The result is a mood that rises above mere sensuality and self-indulgence. It suggests reverence for these light-bearing garments.

The same mood and movement accompanies Anger's presentation of the objects most radiant with "the natural magic of glinting metal": the motorcycles themselves. A chain becomes linked lights in velvety darkness. The rounded edge of a gas tank reflects brilliant rays of light. The bars, tubes, and cylinders of polished chrome gleam like intricate jewelry. In the nighttime streets, the motorcycles not only glitter with reflected light but shine their headlights directly into the camera and, therefore, into the viewer's eyes.

"I see the lights! I see the party lights!" sings Claudine Clark as Anger introduces a close-up of a motorcycle's front wheel with blinking lights entwined in its spokes. Decorated like a sacred effigy, the motorcycle presides over the rowdy gathering that Anger calls a "cycler's Sabbath" and a "Walpurgis Party."[10] It is also—though the participants may not be conscious of it—a celebration of the motorcycle as a "light-bringer." Appropriately, "I see the lights!" resonates with religious and mystical implications. Anger is a master at evoking unexpected meanings from the seemingly banal lyrics of popular songs, and in this case he implies that those watching the film should be able to "see the lights" as well. In fact, the audience has been seeing them since the film began. Throughout
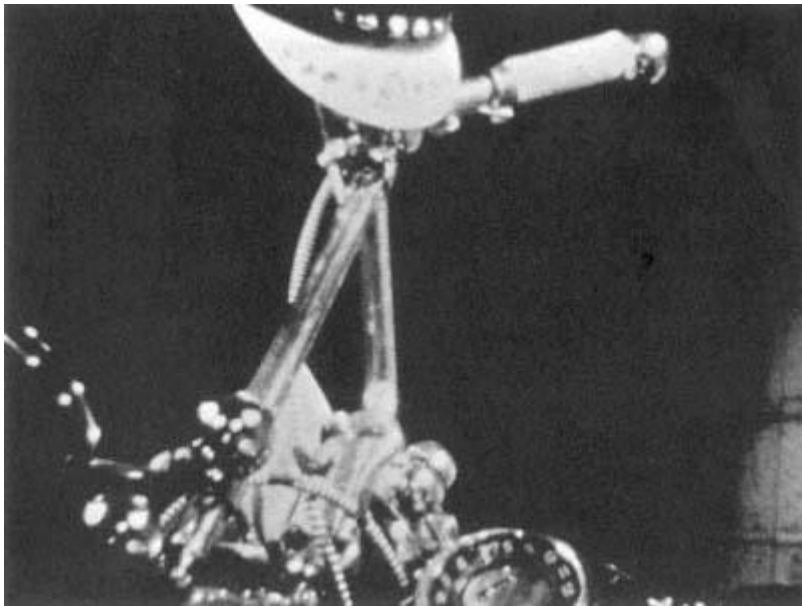
The motorcycle as talisman in *Scorpio Rising* .

Scorpio Rising , the motorcycle is shown to be a "genuine talisman" and "a thing of power," not because of its size, noise, or horsepower, nor because of its popular association with speed, gangs, and violence, but because of the gleaming luster with which it hints at "the glowing marvels seen with the inner eye of the visionary."

If *Scorpio Rising* hints at the supernatural power in gleaming metal, *Kustom Kar Kommandos* (1964) dwells on it. If preternatural light is glimpsed against the darkness of deep-shadowed garages, black leather, and night in *Scorpio Rising* , it boldly and steadily shines forth in *Kustom Kar Kommandos* . If parts of the motorcycles are sometimes jewel-like, the customized car is itself a single, complete jewel. It is placed on display in a clean, well-lighted

room and attended by a blond young man in pristine blue who worshipfully dusts it with a feathery white puff. Then he climbs inside, encasing himself in an interior of polished chrome and red leather seats. While the whispery voices of the Parris Sisters sing about a "dream lover" and their longing to "know the magic of his charms," Anger's gliding camera movements and smoothly articulated montage turn the car's polished surfaces into silvery streams of light, leaving no doubt that the car is a "dream lover" *and* a magical "charm."

In *Heaven and Hell* Huxley complains that modern technology, advertising, and the mass distribution of manufactured goods have made intense light, gleaming surfaces, and brilliant colors so commonplace that they have lost their visionary power. Our sensibilities have been dulled by the omnipresence of glass, chrome, stainless steel: "Metal surfaces wink at us in the bathroom, shine from the kitchen sink, go glittering across the country in cars and trains. . . . What was once a needle of visionary delight has now become a piece of disregarded linoleum." (95) But Anger understands that even the products of modern technology can be transformed into vessels of preternatural light. By carefully capturing their brilliant flashes of reflected light, Anger turns them into visual equivalents of precious stones and metals. Then, to make the "precious" become "preternatural," he gives the light a life of its own, and while the viewer's attention is drawn to the sensuous beauty of sequined dresses, studded black leather, and chromium motor parts, the light they emit reaches "the antipodes of the mind," in Huxley's phrase, where all experience is visionary.

The work that most completely exemplifies this process is *Eaux d'artifice* (1953). Here water is the principal medium for preternatural light, and a "Water Witch" (Anger's designation) is its personification. The film's blue tinting turns every shadowed area into a rich, dark blue "setting" for the gemlike light reflecting off the water and the sequins in the Water Witch's gown. In effect, the tinting turns the strip of film into a blue stream from (or through) whose surface preternatural light gleams and flashes into viewers' eyes as they follow the mysterious bright figure who emerges from the plumed jet of a fountain at the beginning of the film, journeys through the glittering garden, and returns to the down-flowing watery light at the end. Anger's editing reinforces the water-light metaphor by joining most of the shots with dissolves that carry one image into the next like water flowing over shiny stones.

"Pour water on thyself: thus shalt thou be a Fountain to the Universe. Find thou thyself in every Star! Achieve thou every possibility!" Taken from the writings of Crowley, that is the epigraph for Anger's notes on *Eaux d'artifice* .[11] The film pours light on its viewers, so that they may find a "Star" in themselves. The visionary quality of light in the film is nicely captured in the Homeric term "splendor," which, as Michael Bernstein points out, "is one of the standard Homeric epithets appropriate to water, especially when the reference is to a scared fountain or temple district." As an example Bernstein quotes from the *Iliad* (II, 307): "whence did flow splendid water."[12]

"Splendid water" glazes a stone face in *Eaux d'Artifice* .

Although the brief flash of chartreuse light emitted by the Water Witch's fan might seem to be the "Lucifer moment" of the film, I would argue that there are many and more splendid moments provided by the water itself. Fountains, pools, streams, and falls glitter in the deep blue shadows of the garden, and even stone steps and carved faces gleam as the "splendid water" glazes them with liquified light. In one particularly elegant sequence, slow motion transforms thin sprays of water into streaks and beads of light that glitter like gems strung across the deep blue darkness. It is a triple transformation: from water to light to gems. These gems could, indeed, be swallowed by Lord Shiva, but they are consumed by the viewer's eyes instead.

Similar images appear in close-ups of the motorcycles in *Scorpio Rising* , the customized car in *Kustom Kar Kommandos* , and the black-sequined dress in *Puce Moment* . The flow of light in *Scorpio Rising* and *Kustom Kar Kommandos* follows the intricate structure of mechanical parts. In *Eaux d'artifice* and *Puce Moment* the light is less tightly patterned, but in every case the flickers and gleams shine out against a blue-black background—not like immaterial, abstract designs, but like patterns of energy shimmering with a peculiar, mercurial solidity. They are the purest and most autonomous expressions of preternatural light in Anger's films.
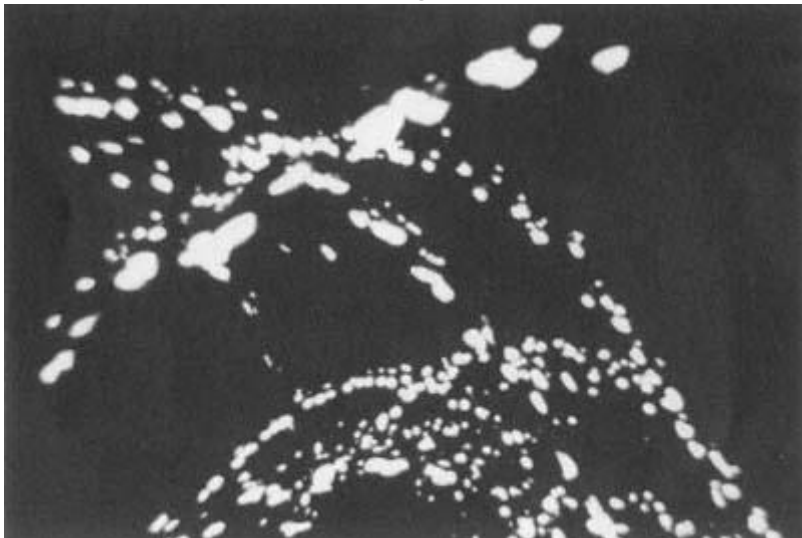
Slow motion transforms a fountain's spray into
beads and streaks of light in *Eaux d'artifice* .
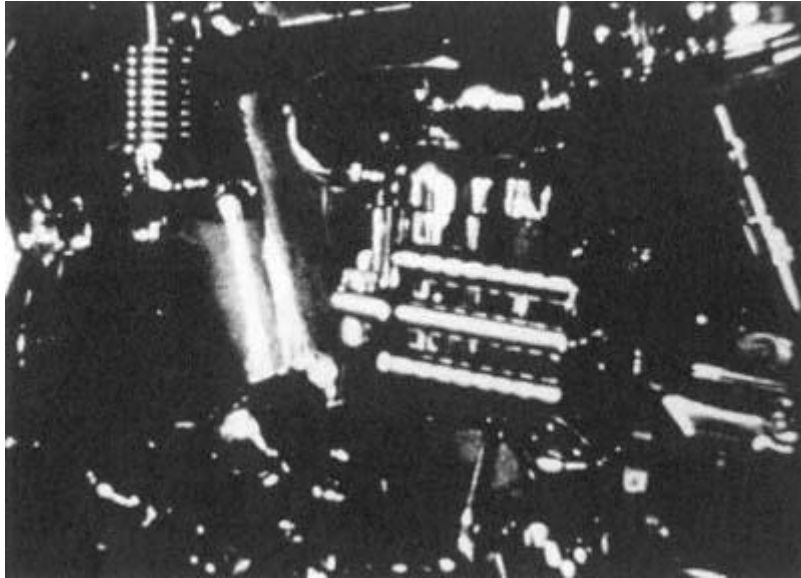
A motorcycle glows in the dark in *Scorpio Rising* .
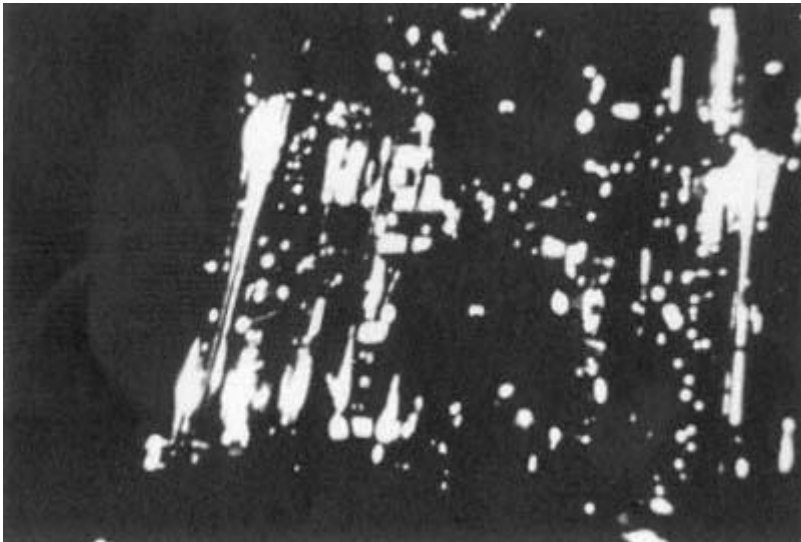
Preternatural light gleams from the polished
engine of a customized car in *Kustom Kar Kommandos* .

2—

Anger's images of preternatural light are not there simply for visionary delight. They also support a major and recurrent theme of Anger's work: the deep yearning to unite with the light, to swallow it, wear it, ride on it, or enter and become one with it. To demonstrate the pervasiveness of this theme in Anger's work, it will be necessary to examine some films in which Anger's thematic concern with light is not always translated into images that work so directly on the viewer's perception. Two such films—*Fireworks* and *Rabbit's Moon* — dramatize light's potency and magnetic attraction without emphasizing preternatural light at the most immediate level of perception.

In *Rabbit's Moon* (shot in 1950, released in 1971, revised in 1980), Pierrot repeatedly and fruitlessly grasps at *his* source of light, the moon. "The moon is his mama and woman and illusion ill met by moonlight," Anger writes in an informal synopsis-analysis of his film.[13] But there is another source of light in the film: a magic lantern, which Anger identifies as "my art."[14] The magic

lantern produces three cabalistic drawings: a star, a crescent moon, and the sun with an eye in its center (of which more will be said later). It also produces—or reveals—the lovely Columbine, who proves to be just as unattainable as the moon. She rejects Pierrot in

favor of Harlequin, and the film ends with Columbine in Harlequin's arms, while Pierrot's body plummets to the ground as if flung down by the moon it/herself.

The sugary pop songs on the soundtrack reinforce (as they simultaneously mock) Pierrot's longing. "There's a thrill in my heart I never felt before. O, darling, where have you been?" accompanies Pierrot as he reaches toward the moon and as a drawing of the moon seems to draw nearer through a series of zoom-dissolves. Since the film is set in a moonlit woods (an effect enhanced by the film's blue tinting), Pierrot's longing for the moon is equivalent to longing for the source of light itself. As Marjorie Keller perspicaciously observes, "The light is the object of desire, the source of all energy (the sun), its reflected principle (the moon) and its earthly manifestation (the magic lantern, the projector)."[15] The new sound track of the more recent, shorter version of the film makes the same point succinctly if ironically: "Give him a light" is sung as Pierrot looks longingly at the moon.[16]

In *Fireworks* (1947) the protagonist, played by Anger himself, also "goes out in the night seeking 'a light,'" as Anger writes in a program note for the film.[17] The phrase carries sexual connotations, which are reinforced by the film's overt treatment of homosexual longing and (temporary) fulfilment. But there are other and more interesting connotations as well. Unlike Pierrot, the protagonist of *Fireworks* succeeds in his search for "a light." First he gets a light for his cigarette from a muscular sailor whose match is a flaming bundle of sticks. (That image is echoed in *Inauguration of the Pleasure Dome* when the Great Beast magically produces a flame in his hand and uses it to light the cigarette of the Scarlet Woman, and in *Scorpio Rising* when separate shots of Scorpio and Marlon Brando are intercut to suggest that in lighting their own cigarettes they are also lighting each other's.) Then, the protagonist finds—or, more precisely, is found by—a sailor-lover whose penis is a Roman candle ejaculating sparks and balls of fire. The protagonist's response is to enter wearing a sparkling Christmas tree on his head. A flaming candle tops the tree. At the end, as the lover lies in bed, a corolla of light (scratched by Anger into the film's emulsion) surrounds his head. From head and loins comes evidence that this is, indeed, the bearer of light sought by the protagonist.

The handmade corolla suggests that this may be one of the "Lucifer moments" Anger incorporated into his earlier films. Many years later Anger told Jonas Mekas, "The last shot in 'Fireworks' is me in bed, and there is another boy in bed but his face is all bursting with white flames, or

light. This is the Lucifer brother, you see, the Unknown Angel side. In my own drama as an artist, I am always looking for him, that angel side."[18]

In the image of a "Lucifer brother"—and lover—the sexual and the visionary themes of the film combine and reinforce each other. It is a mutual reinforcement with many precedents in the history of magic, mysticism, and the more esoteric practices of some religions—from the Eleusinian mysteries of ancient Greece, to tantric yoga, to the sexual magic of Aleister Crowley. To pursue the sexual aspects of the visionary tradition—as Huxley pursued its visual aspects—would take us far beyond the intentions of this chapter, but one specific detail is directly relevant to *Fireworks* in particular and the light-motif of Anger's work in general. In *The Doctrine of the Subtle Body* , the great scholar of mystery religions G.R.S. Mead writes:

Hidden in the seed of the tree is the principle (*ratio, logos*) of the tree. This is the formative power (*virtus, dynamis*) in the seed, the spermatic principle, which is called symbolically in Greek *spintherismos* . . . [which] means, literally, "emission of sparks," "sparking." "Light-spark," or "light-emanation" . . . is used by a number of Gnostic schools as a symbolic expression for the "germ" of the spiritual man.[19]

The seventeen-year-old who made *Fireworks* may not have known about the esoteric doctrines Mead writes of, but he seems to have had an intuitive grasp on the mystical equation of the "spermatic principle" and "light-emanation."

The sexual-visionary theme of *Fireworks* first appears in the overheated prose of a prologue spoken by Anger:

In *Fireworks* I released all the explosive pyrotechnics of a dream. Inflammable desires dampened by day under the cold water of consciousness are ignited at night by the libertarian matches of sleep, and burst forth in showers of shimmering incandescence. These imaginary displays provide a temporary relief.

Anger later replaced the spoken prologue with a flash of lightning. Perhaps that was his way of balancing the weight more evenly between the visionary and sexual implications of his search for "a light." Since the revised version opens the collection of his works called "Magick Lantern Cycle," that flash of lightning suitably announces the visionary theme of Anger's work as a whole.

It is a theme expressed through the ecstasy of donning a shining black dress in *Puce Moment* and in the consumption of gems in *Inauguration of the Pleasure Dome* . It underlies the more sinister mixture of preternatural light and the death wish in *Scorpio Rising* and the young man's surrender

to his gleaming "dream lover" in *Kustom Kar Kommandos* . It also motivates the invocations of Lucifer in Anger's most recent films.

By the time he made *Invocation of My Demon Brother* , Anger's "light" had become explicitly *the* Light, Lucifer, and the theme of yearning to unite with the light had become the worship of the "light-bringer" himself. Although Anger says that the angel invoked in *Invocation of My Demon Brother* is "the Dark One," the conclusion of the film suggests otherwise.[20] Instead of going out in the night to find an incandescent sailor to be his "Lucifer brother," Anger performs a magical ceremony to invoke a smiling Lucifer with moirélike patterns of light playing over his naked torso. One notes, however, that Anger's manic expressions and frantic movements (produced by an undercranked camera) convey none of that serene sense of fulfilment that accompanies the images of preternatural light in the pre-Lucifer films. Moreover, the light is not preternaturally intense. Like the Roman candle and scratched-in corolla of light in *Fireworks* , it symbolizes Lucifer's light-bearing nature but does not express it as directly as the sequined gown of *Puce Moment* , the polished metal of *Scorpio Rising* and *Kustom Kar Kommandos* , and preeminently the water of *Eaux d'artifice* . It is more conceptual than perceptual.

There are only two instances of preternatural light in *Invocation of My Demon Brother* . A procession is led down a staircase by a woman wearing a hooded red robe and carrying a wand tipped with a large, clear jewel. Possibly she is the "Scarlet Woman" of a Crowley-inspired ceremony (see note 7). As she turns and passes offscreen, the gem emits a brilliant blue-white flash of reflected light. The flash is reminiscent of the sudden gleam of chartreuse light from the Water Witch's fan in *Eaux d'artifice* , but it is more intense and gemlike. Preternatural light also emanates from Anger himself as he performs his magical ceremony under spotlights on a darkened stage. Light reflects brilliantly off the glitter on his face and the sequins of his robe, and as he reaches the climax of his ceremony, superimposed rays of light stream from his forehead.

To invoke the Light, one must become like it. Becoming like it, one may unite with it. That seems to be the Neoplatonic message of the film. "Never did eye see the sun unless it had first become sunlike," to repeat the quotation from Plotinus at the head of this chapter.[21] The same message is symbolized in the diagram of the eye in the sun that Anger includes in *Rabbit's Moon* . That sun-eye, rather than the more familiar Eye of Horus (which appears in *Invocation of My Demon Brother* and *Inauguration of the Pleasure Dome*), would seem to express most precisely Anger's sense of the ultimate possibilities of visual perception.

Light shines from the forehead of Kenneth Anger as
the magus in *Invocation of My Demon Brother* .

While working on *Lucifer Rising* (1966–80), Anger said, "I am trying to find the angel again, the Angel of Light."[22] But in finding Lucifer, Anger seems to have lost preternatural light. Although several sequences take place at "sites of sun worship," they do not reveal "the Light" directly.[23] Instead, an eclectic collection of deities and priests invoke and worship "the Angel of Light," who materializes in the thoroughly mortal form of a young man with "LUCIFER" and the seven colors of the spectrum decorating the back of his satin robe. Only one gem is presented with visionary intensity. Extreme close-ups of a deep red ruby are intercut with a ceremony of blood sacrifice, for which the inspiration would seem to be two lines from Aleister Crowley's "Hymn to Lucifer": "His body a blood-ruby radiant/With noble passion, sun-soul'd Lucifer."[24] But the closest approximation to the preternatural light of the pre-Lucifer films comes in brief reflections of sunlight on golden staffs that Isis and Osiris repreatedly raise in a ritual gesture that brings forth flashes of lightning. Despite its symbolic and visual richness, *Lucifer Rising* is less concerned with *revealing* light than with constructing an allegory of light, which stands between the viewer's eyes and light's preternatural powers.

At the other extreme is *Eaux d'artifice* , with its direct revelation of preternatural light and its triumphant fulfilment of the yearning to become one with the light. As the figure merges with the light, so the

viewer's perception may undergo a similar union between personal vision and preternatural light. Huxley suggests that contemplating the "glinting metal and self-luminous stone" of a beautiful jewel can transport us "towards the Other World of Vision." Perhaps contemplation of Anger's cinematic jewels can lead in the same visionary direction. At the very least, these cinematic manipulations of light are more convincing evidence of Anger's much-vaunted skills as a "magician" than are his displays of magical symbols, ritual invocations of Lucifer, and ominous references to film as a "magick weapon" for "capturing people" and "casting a spell."[25]

How susceptible one may be to Anger's "talismans" and how far one may be induced to go into "Other Worlds of Vision" depend on each viewer's susceptibility and willingness to follow Anger's lead. But even a viewer unsympathetic to visionary aspirations should find the concept of preternatural light useful in understanding Anger's work. It helps to explain the interconnected meaning of images that range from jewels, to objects that seem jewel-like in the intensity of their reflected light, to images of "pure" light. It connects those images to the visionary theme of Anger's work as a whole and helps to explain how he has been able to break through the invisible wall of the film medium and communicate directly with the minds of his audience. It

specifies the particular juncture of light and visual perception that most unequivocally demonstrates Anger's skill as "an artist working in light."

Chapter 6—
Making Films for the Inner Eye: Jordan Belson, James Whitney, Paul Sharits

Suppose the Vision of the saint and the artist to be an increased ability to see—vision
—Stan Brakhage, *Metaphors on Vision*

. . . look into your eye, go down into your own eye—and going—
—Oskar Fischinger, notes on *Radio Dynamics*

Kenneth Anger has said that he would prefer to "project images directly into people's heads."[1] Stan Vanderbeek once called his "Movie Drome" (in which viewers lay on their backs to watch a mosaic of images on a domed ceiling) "the closest thing to mind theater. . . . I'm trying to get, literally, right inside your head."[2] In an "Expanded Arts" issue of *Film Culture* Jonas Mekas enthusiastically endorsed an "absolute cinema, cinema of our minds":
For what is cinema really if not images, dreams, and visions? We take one more step, and we give up all movies and we become movies: we sit on a Persian or Chinese rug smoking one dream matter or another and we watch the smoke and we watch the images and dreams and fantasies that are taking place right there in our eye's mind. . . . This is the ultimate cinema of the people, as it has been for thousands and thousands of years.[3]
A futuristic counterpart to Mekas's evocation of an "ultimate cinema" appeared a few years later in *Canyon Cinema News:* "Eventually cathode ray tubes may be hooked up directly to brain wave analyzers and the

cinematographer of the future might only have to think his film to see it."[4] Robert Breer, with characteristic humor and common sense, once remarked, "I'd really like to have my films go 'Fvoom!' just like that—one split second. You wouldn't have to pay; you'd come in and go out. But somehow, that's not the way perception works."[5] Nor is it the way film works; yet all of these comments express a similar desire to bypass the material demands of the medium and make direct contact with the minds of viewers.

The three filmmakers in this chapter demonstrate most forcefully that the dialectic of eye and camera cannot be evaded even when the goal is an "ultimate cinema," a cinema of and for the mind's eye. More specifically, what Jordan Belson, James Whitney, and Paul Sharits have in common is their use of the cinematic apparatus to evoke states of mind that lie beyond the boundaries of materialist and rationalist modes of thought. Where they differ is in the ways they have chosen to get there. For Belson and Whitney, it is with imagery derived from inner vision and from philosophical and religious traditions that use images to visualize—or help induce—deep states of meditation. For Sharits, it is with manipulations of flickering light that disorient the perceptual system and turn it back upon itself. Despite the differences in method and imagery, and despite the common practice of placing Belson and Whitney among "West Coast abstract" filmmakers and Sharits among "structural" filmmakers, the three belong together in a study of how film artists can use the medium of film to awaken dormant perceptions and encourage viewers to discover new sites of vision within themselves. Each in his own way has accepted Oskar Fischinger's challenge to "look into your eye, go down into your own eye—and going—."[6]

Fischinger's open-ended way of putting it should serve as a reminder of the peculiar temptation artists of the inner eye must resist. It is the temptation "to go beyond Art," as Bruce Baillie once expressed it to Brakhage, who heatedly responded:

This, for an artist, is tantamount to saying: 'I want to die!' Religion (ANY Religion in this century's time) does act on Western sensibility ALWAYS in terms of 'Beyond' . . . AND, as such, 'Religion' has proved THE most destructive force against artist sensibility.[7]

Despite its excessive language, Brakhage's argument should be taken seriously; for, as James Whitney recognized, there are always "those who seek to go beyond any language. Those are the people whose eyes and ears are really open." But such people, Whitney continued, "won't have the energy to remain within that confine of art. . . . The artist, in a sense,

must keep a lot of ignorance. To stay in the world you have to preserve a certain amount of ignorance."[8] Jordan Belson casts a different light on the same problem when he says that upon finishing *Samadhi* , "I felt I should have died. I was rather amazed when I didn't."[9]

Belson, Whitney, and Sharits are among the artists who have gone down into the eye but have been able to "stay in the world" and make inward voyages visible to eyes accustomed to seeing only the external world. They have been able to communicate the "increased ability to see" invoked by Brakhage in *Metaphors on Vision:*

Suppose the Vision of the saint and the artist to be an increased ability to see—vision. Allow so-called hallucination to enter the realm of perception, allowing that mankind always finds derogatory terminology for that which doesn't appear to be readily usable, accept dream visions, day-dreams or night-dreams, as you would so-called real scenes, even allowing that the abstractions which move so dynamically when closed eyelids are pressed are actually perceived. Become aware of the fact that you are not only influenced by the visual phenomenon which you are focused upon and attempt to sound the depths of all visual influence.[10]

Besides recognizing the inner eye's contribution to "untutored vision," here Brakhage indicates how the more visionary aspects of seeing and filmmaking can be understood and discussed without recourse to incommunicable experiences of the Beyond. Like Huxley's discussion (and Anger's use) of preternatural light, Brakhage's grounding of "Vision" in "an increased ability to see" keeps the visionary within the realm of visual perception—as I propose to do in the discussion that follows.

1—

When the Western mind turns inward it often turns Eastward as well. This is especially true of Belson and Whitney, and only somewhat less true of Sharits. It is important to note, however, that their attraction to Eastern ways of thinking did not produce an attitude toward vision that is fundamentally different from Brakhage's assertion that it takes a "relaxing of Western muscles in the eyes" and a frame of mind that is "as non-reflective as possible" to see the subtle and ephemeral luminescence of the world around us.[11]

Readers of Carlos Castaneda will recognize similarities between Brakhage's "relaxed" seeing and the nondirected, unfocused seeing with which Castaneda learned to break the "bubble of perception" and "pick out details which were too fleeting for normal vision."[12] Ludwig Wittgenstein

writes of withdrawing his attention from specific objects of vision so that he could become attuned to his own consciousness:

It was a particular act of gazing, but *not* at any point or object. My eyes were wide open, the brows not contracted (as they mostly are when I am interested in a particular object). No such interest preceded this gazing. My glance was vacant; or again *like* that of someone admiring the illumination of the sky and drinking in the light.[13]

In *The Art of Seeing* Aldous Huxley writes of "rid[ding] one's mind of any over-anxious desire to see." One sees better by not *trying* to see, he argues:

"Efforts on the part of the conscious 'I' defeat their own object. It is when you stop trying to see that seeing comes to you."[14] Or, in James Broughton's words, "Looking is a grasping act. Seeing is a receiving act. . . . Looking is an avarice, a hostility, a problem-making. Seeing is an adventure, a discovery, an acceptance."[15]

As Brakhage, Castaneda, Wittgenstein, Huxley, and Broughton recognize, the first step toward "an increased ability to see" is to abandon goal-oriented "looking" in favor of open, receptive "seeing." The next step is to turn seeing inward, to reduce the outer world's visual stimuli so drastically that images of the inner world begin to take their place. This means allowing, in Brakhage's phrase, "so-called hallucination to enter the realm of perception."

Although, as Brakhage notes, the term *hallucination* often carries derogatory connotations, in its basic sense it simply refers to perceptions that do not arise from external stimuli. Scientifically speaking, "Hallucinations are directly related to states of excitation and arousal of the central nervous system, which are coupled with a functional disorganization of the part of the brain that regulates incoming stimuli." That definition comes from a study of hallucinations by Ronald Siegel, who adds that under such conditions, there is "an impairment of the discrimination normally based on external stimuli and a preoccupation with *internal imagery* " (my emphasis).[16] Hallucinations may be experienced through any of the senses, but for obvious reasons, the visual forms of this "internal imagery" are most relevant to a discussion of films for the inner eye.

As Siegel points out, a classic study begun in 1926 by Heinrich Klüver showed that four basic geometrical patterns persistently recur in mescaline-induced hallucinations. One pattern has the quality of a grating, lattice, honeycomb, or fretwork; a second resembles cobwebs; a third takes the form of tunnels, cones, funnels, or alleyways; and a fourth appears in spirals. Klüver and later researchers found that these

images can accompany many changes in ordinary consciousness besides those induced by hallucinogenic drugs. The list now includes some of the conditions also associated with hypnagogic vision: waking up and falling asleep, migraine headaches, fevers, dizziness, epileptic seizures, sensory deprivation, electrical and photo stimulation, and crystal gazing.

Although the immediate circumstances of hallucinations and hypnagogic vision may differ, their "internal imagery" is surprisingly similar. Not only do the same geometrical patterns appear, but often their appearance follows the same two-stage development. The first stage, represented by simple geometrical patterns, may be succeeded by a second stage in which more complicated patterns and even full-scale scenes become visible. In addition, as Siegel points out, "religious symbols and images" are frequently found in the second stage (a point to be taken up a little later).

Siegel's own study of subjects under the influence of LSD and other hallucinogens showed that hallucinations can be codified according to eight forms ("random, line, curve, web, lattice, tunnel, spiral, and kaleidoscope"), eight colors ("black, violet, blue, green, yellow, orange, red, and white"), and eight patterns of movement ("aimless, vertical, horizontal, oblique, explosive, concentric, rotational, and pulsating"). One could hardly ask for a better breakdown of the basic elements of most abstract films! Not all visual elements are included in Siegel's code; there is nothing, for example, about texture and brightness. But it certainly offers a workable paradigm for depicting as well as describing abstract forms in motion. Moreover, the elements in this paradigm do not derive from the purely formal considerations of visual artists but from the brain's own image-making system.

The first-stage hallucinations of Siegel's subjects not only had geometrical patterns in common but tended to follow similar lines of development: from randomly moving dots and amorphous shapes in black and white (which anyone can see in the dark or with eyes closed), to geometric forms, a

pulsating rhythm, and hues of blue (comparable, it would seem, to the "blue-ish tone" Brakhage calls the "prime color of closed-eye vision in deep memory process" and Paul Sharits has referred to as "the 'blueness' of inner vision").[17] As time passes, lattice-tunnel forms become more and more pronounced; the colors shift toward red, yellow, and orange; the pulsating movements become "more organized, with explosive and rotational patterns." The expanding and contracting, spiraling and tunneling forms often duplicate themselves, combine, or become superimposed. When the second-stage images appear they are usually seen "as overlying the lattice-tunnels and situated on the periphery of

those images." As well, during the second stage, "The images [are] often projected against a background of geometric forms," and even when the whole image is made up of non-geometrical shapes, the images themselves usually appear "in lattice-tunnel arrangements and moving in explosive or rotational configurations."

   The imagery in the two stages of hallucinations quite possibly have different sources. The more "representational" or iconic images of the second stage may derive from memories of previous experiences, which are released, perhaps as they are in dreams, when the input of external stimuli is reduced. The geometrical patterns that constitute the first stage and supply the "background" patterns and movements of the second stage, may originate in phosphenes and other perceptions of light produced within the visual system itself. As noted in chapter 3, phosphenes also have characteristic shapes, colors, and movements, and under certain circumstances (migraine headaches, for example) take on brilliant colors and fairly complex patterns. They could easily supply many of the basic elements of first-stage hallucinations. It has been found that certain constellations of cells in the visual cortex will produce phosphenelike colored lights, lines, stars, and other geometrical patterns when electrically stimulated. Even the free-floating, grainy fields of visual "noise" might be raw material for geometric patterns in the first stage of hallucinations, assuming they can be shaped by organized sequences of electrical activity in the brain. Certainly the brain is capable of producing vivid perceptions of intricate geometric patterns of light, whatever the sources of the light may be. These patterns may well reveal some of the underlying organizing principles of neural activity in the visual parts of the brain, and it is this activity that is perceived by the inner eye.

   If, as Gestalt psychologists have argued, our visual system is predisposed to recognize and take pleasure in a few simple forms that are found within the vast diversity of visual stimuli in the world around us, then Siegel's code might be thought of as a catalogue of those forms, as a description of what inner vision "projects" on the outer world, so to speak. To the degree that artists capture the elemental operating principles of this inner seeing, they not only permit us to "perceive where the inner world and outer world meet and overlap," as James Broughton puts it, but show us visual equivalents of the process that causes the meeting and overlapping to take place.[18]

   Presumably the wiring of all human brains is essentially the same. So it is no wonder that certain patterns occur over and over again, not only in hallucinations but in the arts and crafts of the world. Just as Gerald Oster

found phosphene-inspired shapes and patterns in folk art and children's drawings (see chapter 3), so Siegel finds equivalents of the abstract geometrical patterns of hallucinations in the art of "primitive peoples." As examples he reproduces four samples of Huichol Indian embroidery, each a variation of zigzag lines integrated into an overall lattice-work design. Interviewing members of the Huichol tribe during their peyote ceremonies, Siegel and his associates found that the visual imagery they reported was virtually identical to the "symmetrical repeating patterns found in Huichol weaving and art."

Siegel also notes the striking similarities between the basic elements of hallucinations and an archetypal form like the mandala. Although the word in Sanskrit means "circle," the mandala's visual representations often combine squares, rectangles, and triangles, as well as circles and other geometric forms in intricately interlocked symmetries like those of the yantras used in meditation. In their most elaborate forms, mandalas combine (first-stage) geometric patterns with (second-stage) iconic imagery—clouds, flowers, animals, humans, deities, and so on. Thus one might argue that despite the mandala's specific significance within particular cultural and religious practices, its visual origins are universal: they are to be found in hallucinations anyone might experience.

The mandala is also one of the earliest recurring shapes in children's art. It is, according to Rhoda Kellogg, "a key part of the sequence that leads from abstract work to pictorials. The child proceeds from Mandalas to Suns to Humans."[19] This sequence of development in children's art roughly parallels the first and second stages of hallucinations and thus extends over time what the mandalas of Eastern art bring together in the space of each elaborate design.

Of course there is no absolute proof that children two and three years old try to draw their "internal imagery." They may simply make shapes that please them. Nor can one be sure that the stylized and symbolic art of mandalas represents hallucinatory perceptions. It may simply illustrate religious and philosophical concepts. That it shares basic forms with the art of young children, with folk art around the world, and with the imagery of hallucinations may be purely coincidental. Furthermore, it remains to be proved that the mechanisms producing phosphenes and visual "noise" are the source of light for the geometrical patterns of hallucinations. Yet, it is hard to ignore the correspondences among these various forms of visual expression and visual perception.

Certainly it would seem that hallucinations are as true to certain perceptual processes that begin within the mind, as perceptions of the external

world are true to processes that begin with light falling on the retina. (Indeed, some studies have suggested that purely mental images and ordinary visual perception share some of the same neural pathways in the brain.)[20] Similarly, one may call inner imagery "abstract," but the perception of it can be as concrete as the perception of the outer world. In matters of visual perception, it is best to avoid making hard and fast distinctions between inner and outer, abstract and concrete—and, for that matter, East and West, except in the sense that the West has been more inclined to insist on these distinctions than the East has been.

By collapsing these distinctions, one can begin to understand how inner vision can be a literal and communicable "increased ability to see." In addition to the physical light of the external world, there is a perceived light produced by the central nervous system. Equivalences of the colors, forms, and movements of this inner light appear in many kinds of visual art. Therefore, there is no reason they could not be translated into the art of light moving in time.

2—

Jordan Belson has said, "The hallucinatory aspect of imagery is certainly inherent in my work and in the ideas relevant to my work."[21] He has also insisted on the solid, perceptual reality his films recreate: "I first have to see the images somewhere, within or without or somewhere. I mean I don't make them up."[22] Belson made that statement in the late 1960s, shortly after he had completed *Samadhi* , whose title (from Mahayana Buddhism) refers to the

total union between the mind and its object of contemplation, a mental state that can be achieved only in the most advanced stages of meditation. In a later interview, Belson said, "[*Samadhi*] is intended to be a real documentary representation, as accurately as it was possible to make, of a real place and a real visual phenomenon that I perceived—just as I am looking at you right now."[23] More recently he explained that he emphasized the "documentary" reality of the images in his films of that period because meditation and the visual phenomena it generates were still new to him. He was excited by the discoveries of his inner eye and by his ability to "trap them on film." Since the early 1970s, however, his films have been more consciously shaped by his concerns with "art making," as he puts it.[24] They have also revealed an increased interest in imagery of the outer world, or as Belson said in 1978, "The distinction between an external scene perceived in the usual way and the scene perceived with the inner eye is very slight to me."[25]

Four films made between the early 1960s and the early 1980s illustrate the shift in Belson's emphasis from purely "inner image, inner space," to combinations of inner and outer imagery—though the meditative inner eye always serves as the ultimate reference point and shaping influence on the overall form and content of the films.[26] These films—*Allures* (1961), *Meditation* (1971), *Light* (1974), and *Infinity* (1982)—also demonstrate the range of filmmaking techniques Belson has adopted in response to the dialectic of (inner) eye and camera as he understands it: "I've always considered image-producing equipment as extensions of the mind. . . . The mind has produced these images and has made the equipment to produce them physically. In a way it's a projection of what's going on inside, phenomena thrown out by the consciousness, which we are then able to look at."[27]

The film that according to Belson "relates more to human physical perception than [his] other films" is *Allures* .[28] The basis of that relationship is the imagery of hallucinations. Indeed, *Allures* might almost be a textbook illustration of many of the elements Siegel isolates in his study of hallucinations. Points of colored light cluster into circles and spirals wheeling in empty space. Light travels across the screen in lattice- and weblike structures and forms grids and various geometrical shapes in two and three dimensions. The single most common shape is the circle, whose center corresponds with the center of the screen and whose peripheries become concentric rings or spirals of radiating dots and lines. Sometimes these mandalas of light are geometrically precise constellations of tiny glittering dots; at other times they are pulsating disks and halos of misty, glowing colors. Their movements nearly always follow what Siegel calls "explosive and rotational patterns."

Although metaphors of outer space frequently influence descriptions of the film ("a centrifugal starburst," "a pulsating sun," "another glimmering galaxy"),[29] hallucinations offer more precise equivalents of the film's imagery. Belson implies as much when he calls *Allures* "a trip backwards along the senses into the interior of the being."[30] Combining complex animation techniques with superimpositions and other special effects, Belson creates equivalent journeys of perception for the film viewer.

Compared with *Allures, Meditation* places greater emphasis on the spiritual significance of the mind's journey inwards, as is indicated by two quotations Belson included in his program notes for the first screening of the film: "By diving deep through your spiritual eye you will see into the fourth dimension, aglow with the wonders of the inner world. It is hard to get there, but how beautiful it is! (Yogananda)," and, "I saw a shining
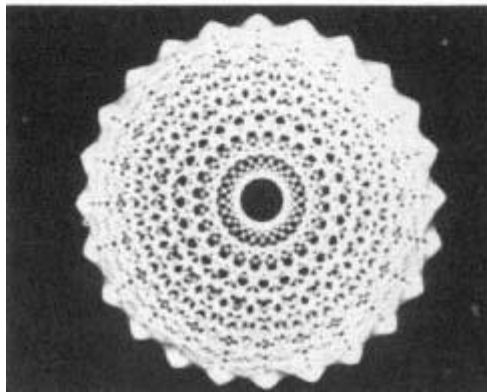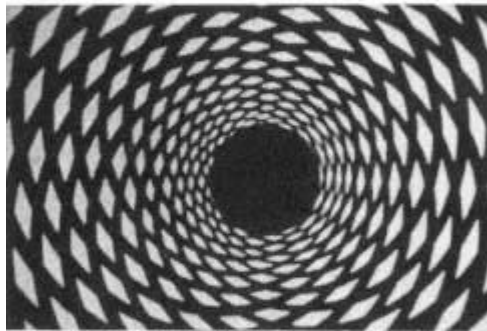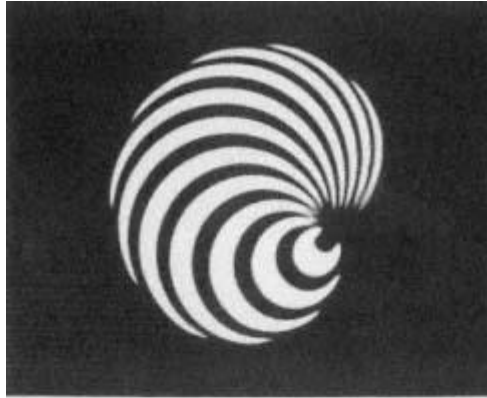
Hallucinatory imagery in *Allures* .

ocean, endless, living, blissful. From all sides luminous waves, with a roaring sound, rushed toward me, engulfed and drowned me; I lost all awareness of outward things. (Ramakrishna)."[31] Like Anger quoting Aleister Crowley, Belson uses the words of sages and mystics to establish a frame of reference for his film, and more specifically, to alert viewers to the thematic significance of the film's form and predominant imagery.

As *Meditation* begins, phosphenelike dots of white light surge upward in a field of deep blue-violet. At first their movements seem random, but as more of these minute light specks appear they form symmetrical patterns that rapidly change shape as they move upward through the frame. Then misty clouds of gray-green and violet fill the screen and dissolve into waves, surf, and flying spray. Mists and water merge and swirl, and suddenly a diver plunges into the water precisely at the center of the frame. The water churns, boils, and begins to spread outward in misty circles of deep lavender. More circles fade in and out until a small solid circle of light fills the center of the screen and starlike dots of light stream past it. The plunge inward has become synonymous with a rocketing outward through the universe.

Circle motifs, with their center corresponding to the center of the frame, continue to dominate the film until a large disk of light releases myriads of

white dots that flow downward to meet a tumultuous surf rising from the bottom of the frame. The dots fade out, the surf rises higher and then dissolves into blowing mists that fade into darkness, bringing the film to an end.

Meditation is an extended visual metaphor of a mind in meditation. Its strength does not lie in the accuracy with which it represents specific details of meditative states—the "shining ocean," "luminous waves," "diving deep through your spiritual eye," and so on—but in its fidelity to the forms light is given by visual processes within the central nervous system. The specks of light and misty, glowing colors, the symmetry and circles, the mutating forms, are characteristic of hallucinations of many kinds—though they seldom achieve the organic unity of *Meditation* —and they recur in many variations throughout Belson's work as a whole.

Another recurring image in Belson's films is a "cosmic eye," formed by concentric circles defining an iris surrounding a pupil at the center of the frame. In *Meditation* its most striking appearance is in a passage near the end of the film: a star-filled night sky surrounds a bright iris in whose pupil more stars are visible. Then the iris fades and the whole screen becomes an endless space of stars and galaxies revolving around the still point at its center. For the "cosmic eye," distinctions between inner and

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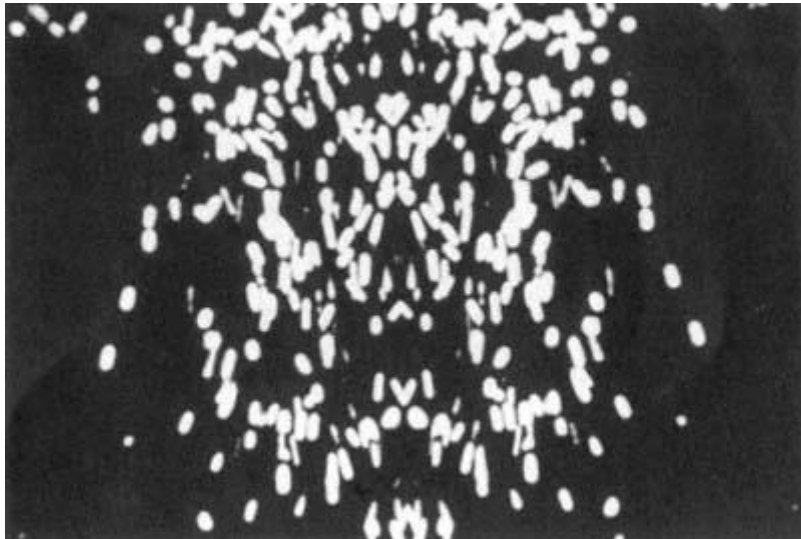
A symmetrical pattern of lights begins to take shape in *Light* .

outer, center and peripheries, closed-eye and open-eye vision do not exist. Its point of view is, in T. S. Eliot's phrase, "more distant than stars and nearer than the eye."

Belson's increasing tendency to minimize distinctions between the physical light of the outer world and the mental light of the inner world is especially apparent in *Light* . "The film," he says, "portrays light simultaneously as both a spectrum of physical phenomena and as corresponding states of consciousness. It is an expression of light as a physiological and psychological substance."[32]*Light* begins with an expanding blue rectangle containing a yellow circle with a dark blue center, like the iris of an eye surrounding the pupil. When this "cosmic eye" fades out, the rectangle turns deep purple, shrinks, and disappears. It is replaced by softly focused red and yellow lights flowing above a yellow "horizon." The effect is like an animation of Turner's most abstract seascapes, or a slowed down and smoothed out passage from Brakhage's *Text of Light* (which was completed the same year as Belson's *Light*). Soon a brilliant sun rises through the frame and is followed by a second sun that stops in the center of the frame and gradually turns into a glowing orange penumbra with a deeper orange center and a surrounding green ground. The center then turns green as the ground turns orange, and the film continues with a series of changing circles and grounds.

Light rays flash from the center of a circle in *Light* .

Subsequent images of light include long thin lines of blue light and wider sprays of colors swirling out from the center of the frame, masses of gold dots floating in dark space (reminiscent of the golden "flakes" of light in *Scenes From Under Childhood*), white specks flowing from the edges of the frame to the center in complex symmetrical patterns, and a circle of light within which four rays of light shine out from a small nugget of light in the center of the frame. As always, circles predominate and most movements are around, into, and out of the center of the frame, recreating a variety of "explosive or rotational configurations" that conform to the basic patterns of hallucinations cataloged by Siegel.

To treat light as "both spectrum of physical phenomena and as corresponding states of consciousness," Belson created images that are seen *as* light, not as objects upon which light falls. This is why Brakhage felt he was invading Belson's "territory" when he made *The Text of Light* . Brakhage's film, however, retains more of light's "corporeality" and gives more emphasis to its impact on the physiology of perception; hence the "jerky" and uncentered imagery that he knew would exasperate Belson. For both artists, the perception of light is physiological and psychological, but Brakhage's techniques tend to emphasize the former and Belson's the latter.

Their differences are also indicated by Belson's preference for geometri-

cal, symbolic, and archetypal forms that are seen in their purest state by the mind's eye. Brakhage is more inclined to discover them in the cluttered and informal imagery of the everyday world. Even Belson's representational images—such as the diver and waves in *Meditation* , the sun in *Light* , a naked female figure holding a hoop of light in the opening of *Cycles* , an airplane and a spinning dancer in *Music of the Spheres* —are withdrawn from external reality and made to seem like images evoked in the mind.

A case in point is one of Belson's most recent works, *Infinity* .[33] The beginning shows a lake containing a small island and hills rising beyond it. Yellow sunshine falls on green foliage. The sun appears between branches extending from each side of the frame. Snowlike white dots fall in front of bare branches. More sun-shapes appear as the spume of waves flies up in the foreground. Mists swirl and yellow shafts of sunlight fall into the interior of a cathedral. At the half-way point, a sun hovering above the horizon shrinks to a glowing dot that spins and sprays out rays of light. For the rest of the film, abstract imagery prevails. Clouds of light whirl around a central point; starlike lights form a glittering sphere; shafts of light cross and interweave in lattice patterns that gradually turn into a sphere of light, which in its turn becomes a

blue circle on a purple ground. The film ends as two circles of light appear next to each other and fuse into a horizontal figure eight, the symbol of infinity: ¥ .

As the film's structure suggests a movement from the finite to the infinite, so its imagery suggests a comparable movement from outward perception to inward hallucinations. As the sun becomes a spinning ball of light, it marks the transition between what Belson calls "an external scene perceived in the usual way and the scene perceived with the inner eye." In a sense, the scene has not changed, only the way of seeing it—but for Belson, that makes all the difference.

3—

Like Belson, James Whitney began making films for the inner eye by using equivalents of the light-dots of closed-eye vision and the abstract geometric forms of hallucinations. Although his early collaborations with his brother, John, culminating in *Five Film Exercises* (1943–45), seem to have been devoted entirely to exploring spatial-temporal relationships between simple abstract shapes, his own independently made films venture into a much richer terrain of imagery and ideas. All of Whitney's subsequent work was influenced by his interest in "Ramana Maharshi,
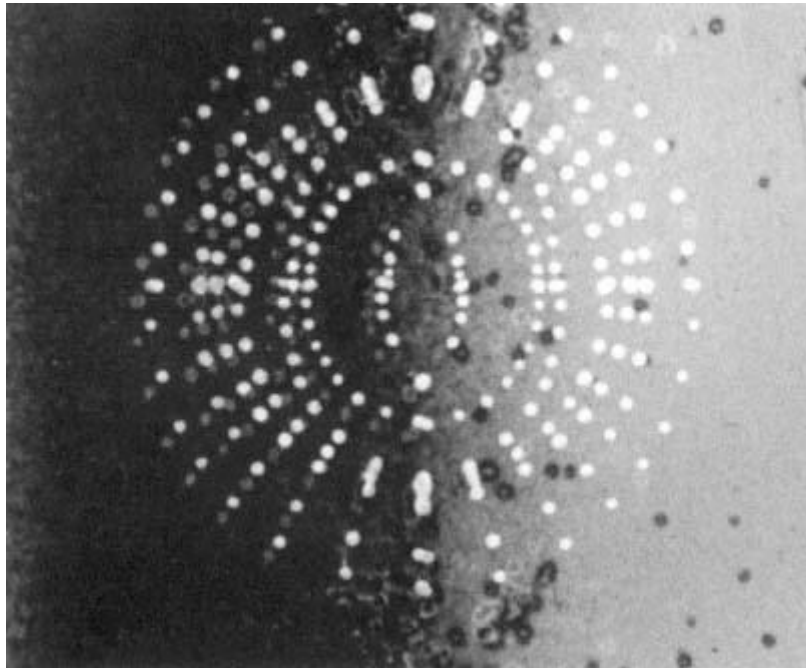
A simple mandala shape in *Yantra* .

Jungian psychology, alchemy, yoga, Tao, quantum physics, Krishnamurti and consciousness expansion," but those interests expressed themselves differently in different films.[34] For that reason, and because Whitney has attracted less critical attention than any of the other filmmakers in this book, all of his films will be included in the following discussion, though greater emphasis will fall on the films that mark significant stages in Whitney's development as a film artist. Taken together, Whitney's films reveal—beneath their differences in imagery and technique—a single-minded dedication to uniting "cosmic happenings and inner psychic happenings," as Whitney says of his first major film, *Yantra* .[35]

Preceding that film, however, was a short, *Yantra Study* (1949), based on a series of mandala paintings done by Whitney in the late 1940s. Though extremely simple structurally (static shots of the paintings are linked by dissolves), the film is quite rich visually. The mandalas are composed of rapidly

sketched lines, rough brush strokes, and dribbles of paint in the abstract expressionist style of Jackson Pollock. Under Whitney's guiding hand, however, they reproduce the circles, rectangles, and
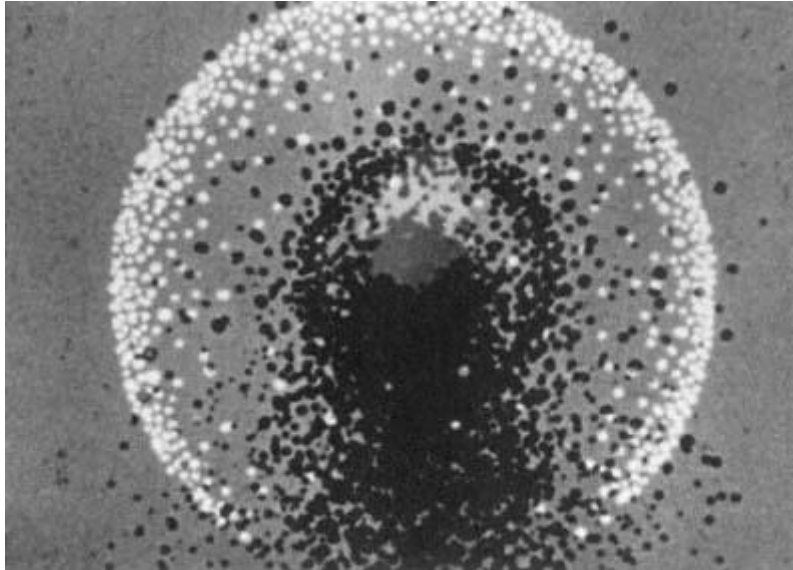
Light dots form a sphere in *Yantra* .

other geometric structures of the mandala-yantra tradition. Whitney's painterly interest in color, texture, and formal design is clearly evident in the mandalas of *Yantra Study* , but one can also sense in them the effort to give archetypal form to patches of light and dark that are like the flecks of light and streaks of color in closed-eye vision.

Whitney's next step was to translate those perceptions into "dot-patterns" (as he called them), which became the basis of his two best-known films, *Yantra* (1957) and *Lapis* (1966). He specifically equated his "dot-patterns" with the breaking up of forms as he perceived them in meditation and with "a quality which in India is called the *Akasha* , or ether, a subtle element before creation like the *Breath of Brahma* , the substance that permeates the universe before it begins to break down into the more finite world."[36] In *Yantra* the swirling masses of colored dots coalesce into lines, waves, fountains, comets, and many circular and spherical designs. Although Whitney's comments on the film explicitly link its imagery to mandalas and other visual expressions of Eastern mystical traditions, it is not necessary to be familiar with those esoteric subjects to appreciate Whitney's accomplishment. That is not only because Whitney uses shapes, rhythms, and formal structures made familiar by modern abstract art but also because equivalents of the films' "dot-patterns" occur in
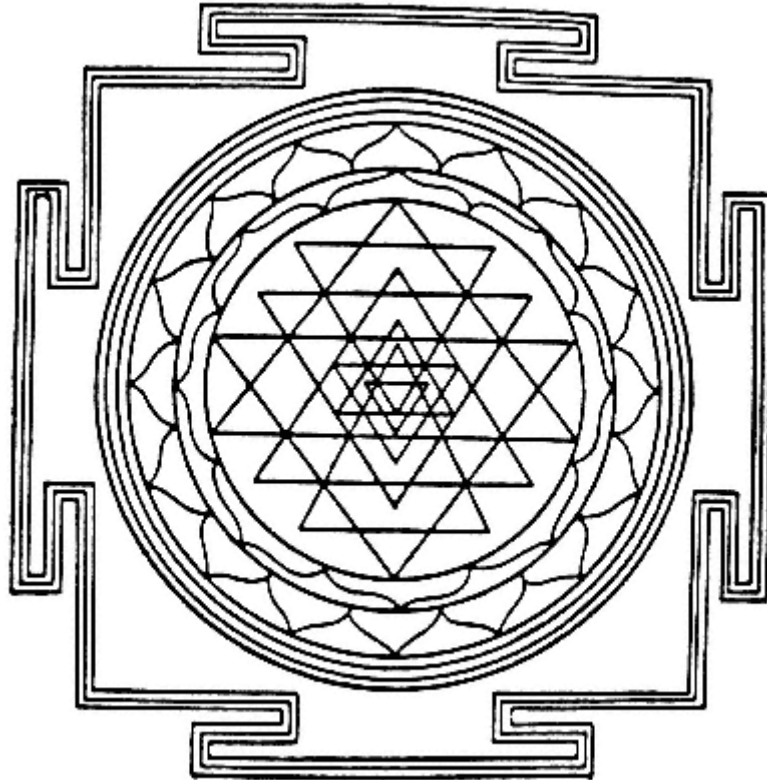
Shri Yantra, a device for meditation.

everyone's inner perceptions—though rarely so beautifully distilled from the visual "noise" and mental distractions that usually hide them.

The traditional function of yantras is to aid meditation. By concentrating all attention on the patterns of the yantra, the meditator eliminates extraneous perceptions, thoughts, and feelings in order to achieve something like a mental-perceptual unity with the design itself. The pattern, as Heinrich Zimmer puts it, "becomes reproduced by the worshipper's visualizing power."[37] Or, as I argued earlier in this chapter, the yantra may help the meditator recognize patterns that are already present in the visual system but remain unnoticed until the steady stream of external stimuli is cut off by techniques of meditation or by other physiological and psychological conditions that cause hallucinations. Whitney's *Yantra* not only displays some of the archetypal patterns perceived un-
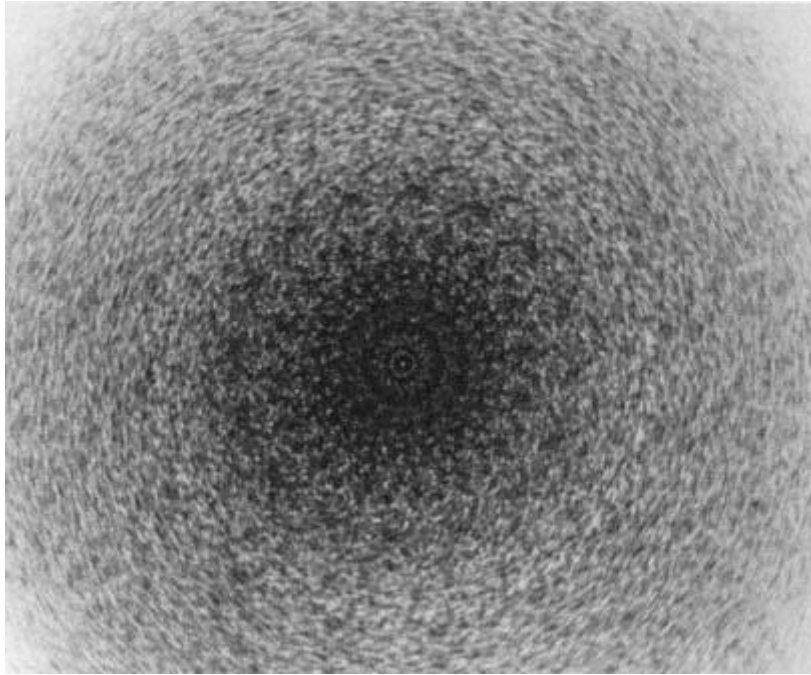
A "space/time mandala" taking shape in the opening sequence of *Lapis* .

der those conditions but reproduces the mind's process of creating or discovering them.

In *Lapis* , which Whitney calls a "space/time mandala," the "dot-patterns" of closed-eye vision form even more elaborate designs. The film begins with masses of grayish beige grains drifting around the edges of an empty white field. Slowly the grains draw together in a revolving mandala of exceedingly intricate geometrical patterns. A close-up reveals the patterns to be made of pulsating dots of colored light that seem to follow their own independent trajectories yet constantly move into and out of elegant geometrical formations. They suggest galaxies (or subatomic particles) engaged in a stately cosmic dance.

Although Whitney's description of the film draws upon the language of physics and meditation—"a totally balanced opposition of stasis and flow, holding the paradox symbolically through wave and particle, pointing to a still center of emptiness"—the terminology Siegel applies to hallucinations works equally well: "lattice-tunnel arrangements . . . moving in explosive or rotational configurations." More speculatively, one might describe the
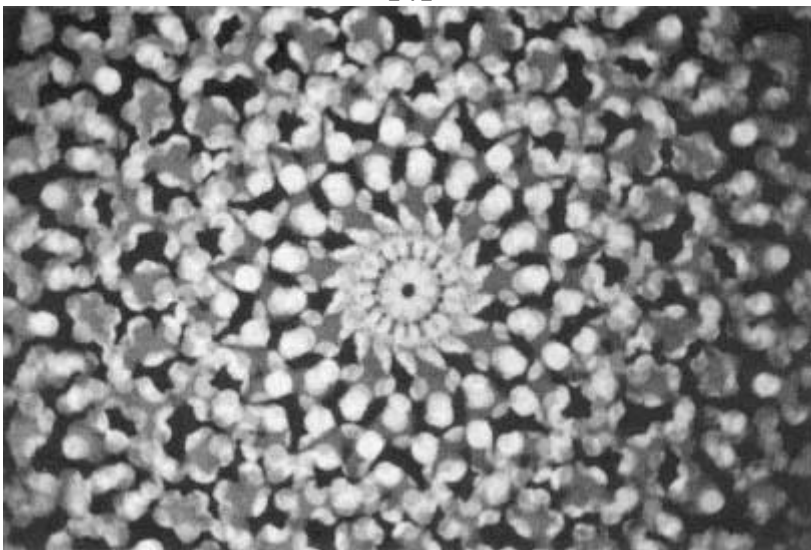
A close-up of the colored dots of light that produce the intricate designs of *Lapis* .

film as a vast metaphor of neural activity in the visual system of the brain. Its sequences of crystallizing and dissolving mandalas are like spacial-temporal maps of brain cells firing during the process of meditation.

Other, less elaborate treatments of "dot-patterns" appear in *High Voltage* (1958), a short film Whitney contributed to a "Vortex Presents" evening at the San Francisco Art Institute.[38] More of a study than a full-fledged work, *High Voltage* includes flowing streams of grainy colors and pebbly, mosaiclike suns and mandalas, as well as a new motif of vibrating, crenellated lines similar to one of Siegel's hallucinatory forms or some of the designs commonly found in the rugs, blankets, and pottery of Southwest Indian cultures. Most striking, however, is Whitney's extensive use of solarization, a technique also present but much less emphasized in passages of *Yantra* . In *High Voltage* the solarizing greatly intensifies the film's grainy texture and creates fleeting shimmers and shifts of light and color. These approximations of the elusive and delicate patterns of light perceived in closed-eye vision would not be exploited fully, however, until Whitney made *Dwija* .

Completed in 1976, *Dwija* ("twice-born" in Sanskrit) is based on eight drawings of a mandalalike jar or alchemical vessel. Like the paintings in *Yantra Study* , the images of the vessel in *Dwija* emerge from mingled

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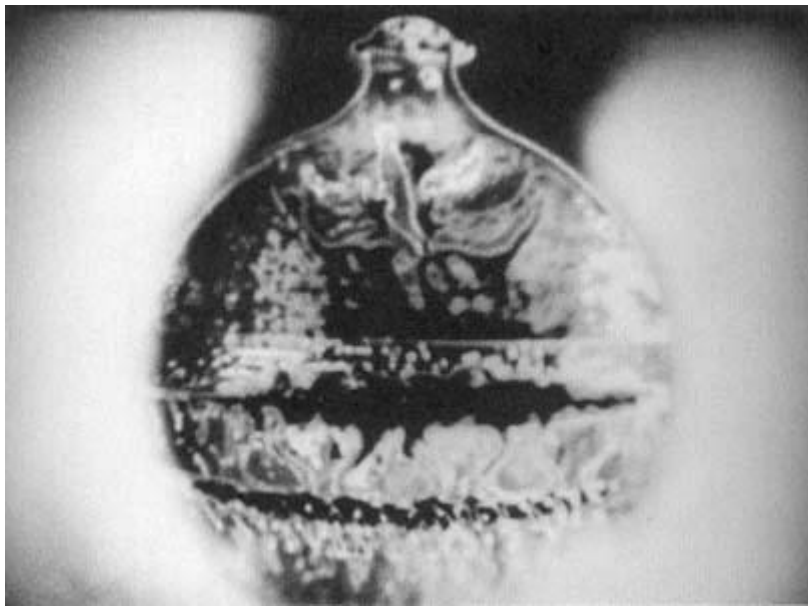
The alchemical vessel in *Dwija*
(Courtesy La Cinémathèque Québécoise).

lines, shapes, textures, and colors. In this case, the effect is not due to the style of the original drawings but to Whitney's filmic techniques. Whitney began with a loop of the eight alchemical drawings, which he then solarized, rephotographed, and superimposed in continuously changing combinations. He also hand-processed his footage in order to introduce further subtle variations in hue, texture, brightness, and density. The result is a vivid yet mysteriously insubstantial image of an alchemical vessel dissolving and materializing again and again within a pulsating stream of colored light.

The subtly mutating image of the vessel finally disintegrates into pulsating circles of light, while a ghost-image of the unbroken vessel remains in faint superimposition. After this point there are long passages of nearly pure white light with no intervening images of the vessel, but just when it seems that the vessel has totally dissolved into light, it returns, shimmering like an object seen through water or heat waves. It retains its molten, glowing lines to the film's end, but in the meantime the shape of a descending bird in the design of the vessel is reversed and ascends from the vessel: "The bird escapes leaving the

broken shell of the bottle," as Whitney describes it. The bird's ascent would seem to symbolize the

soul's rebirth after passing through many trials of fire and light, but it could also stand for the perceptual renewal each viewer can experience through his or her own visual immersion in the film's flowing light.

In keeping with its theme of transformation and renewal, the film alludes directly to the practice of alchemy and more indirectly to the techniques of firing glazes for Raku pottery. By showing the vessel repeatedly dissolving and reforming in the flamelike stream of light, Whitney creates a cinematic equivalent of the lengthy and repetitive processes through which alchemists tried to transform base metals into gold. As the alchemist must go through a long series of steps to bring about this transformation, so Whitney painstakingly combined different techniques such as hand-processing, solarizing, and superimpositions to transmute the physical base of the medium into its essence: "an experience of pure light in immanent flux."

Making Raku pottery had become Whitney's principal creative activity after the completion of *Lapis* . He found that it offered "an amazing direct relationship to materials in terms of clay, glazing, firing, and smoking. The whole process was very enjoyable," he said, "because the mind moved freely into materials, and the transformation process was totally fascinating." Whitney explicitly related the imagery of *Dwija* to the "experience of looking into the kiln peephole to see the fire glistening over the glazes, the colors luminescent," but it seems clear that his whole approach to making the film—including processing the film himself—was in keeping with the "direct relationship to materials" he enjoyed in his pottery work.

Although *Dwija* is unique in its allusions to alchemy and pottery as models for filmmaking, it is like *Yantra* and *Lapis* in its use of "pure light in immanent flux" to create new visual forms. Although the imagery of the earlier films can be compared to the abstract geometry of hallucinations, *Dwija* conveys something closer to the grainy fields of light and the vivid but ephemeral images of hypnagogic vision. Whitney's direct engagement with the material of the medium gives *Dwija* an almost tactile immediacy that is more like Brakhage's equivalents of closed-eye vision than those of Belson's or Whitney's earlier films. If *Yantra* and *Lapis* concentrate on the imagery of inner seeing, *Dwija* gives more attention to the processes that produce the imagery.

In fact, during the time he made *Dwija* Whitney found himself seeking to get beyond images altogether. Much like Brakhage, who was "trying to find a place in the mind that is beyond picture or other than picture" in the roman numeral series, Whitney remarked while working on *Dwija* , "My primary concern now is to discover whether there is or is not something

that is not put together by thought, which is memory. Ultimately, I see this as leading to silence and imagelessness; seeing without an image—hearing without a sound." Although this hints at a surrender to the Beyond, it proved not to be so, as *Dwija* and Whitney's next film, *Wu Ming* (1977), convincingly demonstrate.

"Silence and imagelessness" is implied by the title *Wu Ming* , which means "no name." Early in the film the Chinese characters for "No name is the beginning of Heaven and Earth" are vertically superimposed on a sphere of tiny shimmering black and white squares. Formally, this thematic statement (taken from a Taoist text) is represented as a vertical line through a circle, representing the basic organizing concept of the film: the "binary" relationship of "0" and "1," according to Whitney. Nothingness and oneness, circle and line, make the simplest form of mandala, which reappears in the film as a gleaming shaft of light in front of a fluid oval of dots. Flowing dot patterns and mandalas are major components of the film's imagery, but much of the time (in Whitney's words) "clear projection light dominates."

This image of "imagelessness" is most striking in the concluding five minutes of the film. A large blue circle containing horizontal layers of lighter blue vapors slowly shrinks to a solid black dot in the center of a white field of light. As the dot shrinks, the effects of its afterimage become increasingly prominent: the dot seems to become brighter and the screen darker as negative afterimages are mentally superimposed on the film's positive images. Every eye movement makes the afterimage slide off its source on the screen, producing two dots and two screens continually shifting position. What is "on the screen," as distinct from what is "in the eye," becomes increasingly hard to distinguish. When the dot finally disappears into the center of the screen, its afterimage continues to hover and gleam on an ambiguous gray-white plane somewhere between the screen and the viewer's eyes. Meanwhile, concentric gray rings appear at the center and slowly expand to the edges of the screen and disappear, leaving nothing but "clear projection light" at the film's end. As Whitney describes it, "A very slow collapsing solid black hard-edged circle disappears in a pure white field. . . . From this disappearing point, an entirely different kind of energy radiates in expanding wave rings, IN as particle OUT as wave." Light is composed of particles and waves, and it is light's direct impact on the viewer's visual system that produces the powerful final effects of the film. At the end, the film's images are made to seem less important than the "imagelessness" of pure, unobstructed light.
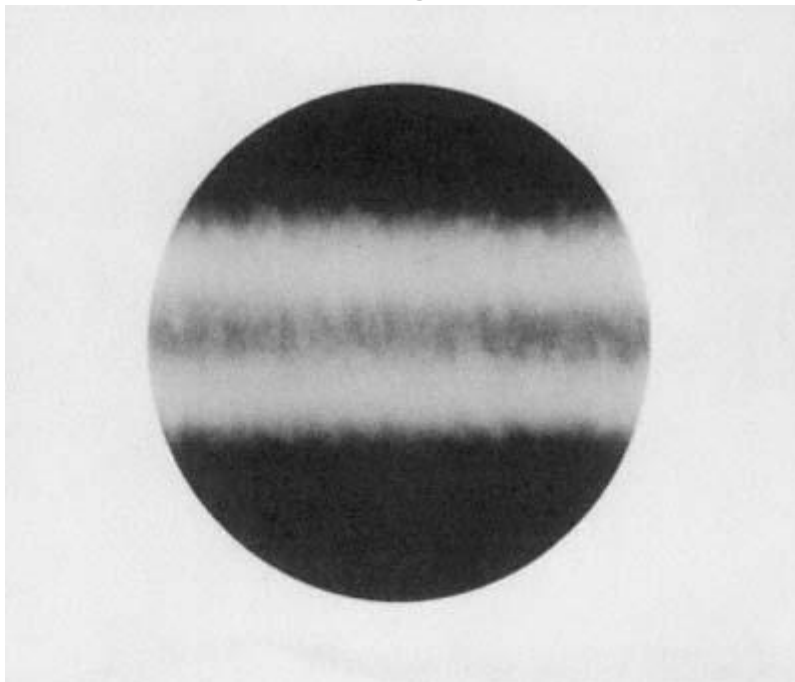
A blue, vapor-filled circle will shrink into a tiny black dot before disappearing in a pure white field in *Wu Ming*
(Courtesy La Cinémathèque Québécoise).

The goal of seeing without images is expressed in the title of Whitney's last film, *Kang Jing Xiang* , which was nearly completed at the time of his death in 1982. The title means "like an empty mirror," but the film itself is not as "empty" as its title implies. Instead, it reiterates some of the most striking visual motifs of Whitney's earlier films: solarization, an alchemical vessel containing a butterfly, mandala-circles, and elegant "dot-patterns." More intriguing are Whitney's plans for *Li* , a film he did not live to make. It appears that he was hoping to achieve "imagelessness" by using the "dot-patterns" of closed-eye vision in a new way.

William Moritz, who worked closely with Whitney in his last years, describes the intentions for *Li* as follows:

[*Li*] was to have consisted entirely of writing "random" dot fields from which the eye (and mind) would create its own transitory patterns and meanings, as Dr. Bela Julesz discusses in *The Foundations of Cyclopean Vision* . "Li," the Chinese word for "organic grain pattern" as in wood, stone, etc., symbolized for the Taoists the natural, irregular, a-logical, fluctuating order of things.

At times, James also called this film *Wu Wei* ("no-resistance"), the Taoist principle of flowing with the rhythms of nature and chance.[39]

Julesz's experiments with computer-generated random dot patterns were designed to help identify the processes used by the visual system to combine binocular data into a single, unified image of the visual world. In the course of his work, Julesz found that perceptions of depth and of simple shapes can be derived from totally random patterns of dots, if the patterns are viewed stereoptically, that is to say, if they are slightly displaced and shown to each eye separately like the pairs of photographs used in old-fashioned stereoscope viewers. The perceived depth and shapes are not, in other words, "in" the dot patterns, but "in" the brain's processing of the patterns.[40]

The connection between Julesz's experiments with random dot stereograms and the Taoists' contemplation of "organic grain patterns" may be rather tenuous, but for Whitney it seems to have reinforced his feeling that "dot-patterns" can appeal to the basic form-making processes of the human mind. Even more than the shrinking black dot of *Wu Ming* , the "writhing 'random' dot fields" of *Li* would require audience participation: the viewer's own visual system would have to give form to the film's equivalent of amorphous visual "noise." Although the imagery in all of Whitney's films was designed for the mind's eye of the viewer, the "dot-patterns" of *Li* would have been purely stimuli for each viewer's inner vision.

4—

In their vigorously metrical montage and their disconcerting effects on the viewer's perception, Paul Sharits's flicker films may seem diametrically opposed to the elegant and slow-paced films of Belson and Whitney (though, in fact, flicker effects occur in some of their films as well). What Sharits has done, however, is pick up where the planning for *Li* left off—not chronologically, since he had begun to make flicker films some fifteen years earlier—nor formally, since his films are based on alternating frames of solid color, not "writhing 'random' dot fields." But in conceptual terms, Sharits went in the direction Whitney had taken when he decided to make an imageless film that would stimulate the viewer's own image-making capacities.

Although at one level Sharits's flicker films continue to depict inner perception, at another level they set new perceptual processes into motion. As he explains in a statement for the Knokke-le-Zoute experimental film

festival of 1967, "In my cinema flashes of projected light initiate neural transmission as much as they are analogues of such transmission systems," and his description of *Ray Gun Virus* could be applied to his other flicker films as well: "Light-color-energy patterns generate internal time-shape and allow the viewer to become aware of the electrical-chemical functioning of his own nervous system."[41] The same could be said of other flicker films, such as Peter Kubelka's *Arnulf Rainer* , Standish Lawder's *Raindance* , Tony Conrad's *The Flicker* , Keith Rodan's *Cinetude* 2, and Pierre Hébert's *Around Perception* , as well as passages in films by Robert Breer, Kee Dewdney, Michael Snow, Brakhage, Belson, and Whitney (to mention a few of the many avant-garde filmmakers who have used flicker effects).

Strictly speaking, flicker effects are not in the film at all; they are merely stimulated by it. Alternating frames of black and white, for instance, will evoke perceptions of an ephemeral and slightly pulsating gray. Alternating red and blue frames produce a comparably vivid, yet insubstantial, violet. The

perceived color and the rapid pulsations are created by the viewer's visual system in response to the order and frequency, as well as the brightness and hue, of the alternating frames. As the light continues to flicker, the whole image may seem to expand and contract and even lift itself off the surface of the screen and hover disconcertingly in some ambiguous plane that is impossible to fix in space. In fact, it is not "in space" at all. It is "in" the temporally organized firing of brain cells. It is quite literally an "internal time-shape," as Sharits calls it, created by "the electrical-chemical functioning of [the viewer's] own nervous system." The same might be said of all seeing, but usually there is a fairly strong resemblance, or iconic relationship, between the external stimulus and the internal representation of the stimulus. The viewer of a flicker film, however, sees things that are very different from what is in the film itself. For this reason, one might argue that flicker is the filmmaker's most effective means of generating images directly inside the viewer's mind—as Anger, Vanderbeek, Mekas, and others had sometimes hoped to do, though by other means.

By their very nature, then, all flicker films take advantage of the fact that perception of rapidly alternating patterns of light and dark can have powerful physiological and psychological effects. Among the more unpleasant effects are headaches, nausea, and even, for a very small number of people, epileptic seizures. For that reason, the following disclaimer at the beginning of *The Flicker* is only partially tongue-in-cheek:

WARNING. The producer, distributor and exhibitors waive all liability for physical or mental injury possibly caused by the motion picture 'The Flicker.'

Since this film may induce epileptic seizures or produce mild symptoms of shock treatment in certain persons, you are cautioned to remain in the theater only at your own risk. A physician should be in attendance.

On the other hand, as Conrad knew perfectly well, flicker can produce a broad range of pleasurable and even exhilarating effects. Experiments have shown that when a strong light flashing five to ten times per second is directed on closed eyelids, most subjects perceive constantly changing patterns of color.[42] In *Heaven and Hell* , Huxley compares these subjective perceptions to the visionary experience, and in an "Expanded Arts" issue of *Film Culture* , Jonas Mekas treats them as examples of "expanded" vision, quoting as evidence a particularly vivid account of the effects of a homemade "flicker machine":

Visions start with a kaleidoscope of colors on a plane in front of the eyes and gradually become more complex and beautiful, breaking like surf on a shore until whole patterns of color are pounding to get in. After a while the visions were permanently behind my eyes, and I was in the middle of the whole scene with limitless patterns being generated around me. There was an almost unbearable feeling of spatial movement for a while, but it was well worth getting through, for I found that when it stopped I was high above earth in a universal blaze of glory. Afterwards I found that my perception of the world around me had increased very notably.[43]

Although the precise reason for these effects is still unknown, there is no doubt that flicker can produce perceptions comparable to some of those experienced in hallucinations, meditation, and visionary experiences ("I was high above earth in a universal blaze of glory"), and is, therefore, an appropriate basis on which to construct films for the inner eye.

Some evidence to support such a claim was supplied by a series of experiments conducted in the early 1970s by Edward Small and Joseph Anderson. They found that watching a short film of alternating white circles and black frames "induced the perception of symmetrical, geometric, colored patterns which were strikingly similar to many of the mandala forms reproduced in various works."[44] Producing flicker with a circle rather than with full, rectangular frames undoubtedly encouraged perceptions of the mandala's circular shape, but when Small and Anderson asked their subjects to make drawings of what they saw while watching the film, most made circles containing "symmetrical, geometric" patterns characteristic of mandalas (even though, as the investigators were careful to determine, most of their subjects had never heard of mandalas and knew nothing of their traditional forms in other cultures).

Among avant-grade filmmakers who have made flicker films, Sharits is not only noteworthy for his persistence in exploring the aesthetic possibilities of flicker effects but also for his understanding of their relationship to visionary forms like the mandala. Because he realized that flicker was a cinematic technique capable of producing equivalents of visual experiences generated by mental processes alone, he specifically designed his flicker films to be "occasions for meditational-visionary experience," as he explains in his statement for the Knokke-le Zoute film festival in 1967.

Not surprisingly, mandalas play a significant role in the way Sharits conceptualized and attempts to describe his films. In addition to *Piece Mandala/End War* (1966), which Sharits calls a "temporal mandala" (and to which I will return for a more thorough discussion), there are also *Razor Blades* (1968), which begins, in Sharit's words, "as a mandala . . . [that] is visually sliced open"; *N:O:T:H:I:N:G* (1968), where the "color development is partially based on the Tibetan Mandala of the Five Dhyani Buddhas"; and *T,O,U,C,H,I,N,G* (1968), which Sharits describes as "an uncutting and unscratching mandala." It is not the esoteric symbolism of mandalas that interested Sharits; rather, it is their "strong, intuitively developed imagist power," as he puts it. His flicker films exhibit some of that same power to stimulate and help shape the imagery of inner perception.

Piece Mandal/End War can serve as a concrete example of flicker films in general and the "meditational-visionary" experience aimed for by Sharits's flicker films in particular. A flickering dot at the beginning of the film introduces the flicker effect itself and at the same time embodies what Sharits calls the "circularity and simultaneity" that are the mandala's "tools for turning perception inward." Sharply perceived yet curiously tenuous, shadowy yet bright, the dot engages the viewer's perceptions in the temporal flow of the film while simultaneously revealing the discrete units of which that flow is composed. Rather than "IN as particle OUT as wave," as Whitney describes the concluding sequence of *Wu Ming* , the flicker-dot opening of *Piece Mandala/End War* is "particle" (the projector's discrete impulses of light) and "wave" (the fluttering persistence of the dot in the viewer's perception) at the same time.

Formally, thematically, and perceptually the film as a whole, like all flicker films, rests on the paradox of discontinuous continuity, separateness and union. In *Piece Mandala/End War* , Sharits extends that paradox from flickering fields of color to flickering black and white frames composed of still photographs of a couple making love. These few separate frames (showing the man on hands and knees above the woman and crouched to perform cunnilingus) go through innumerable repetitions and
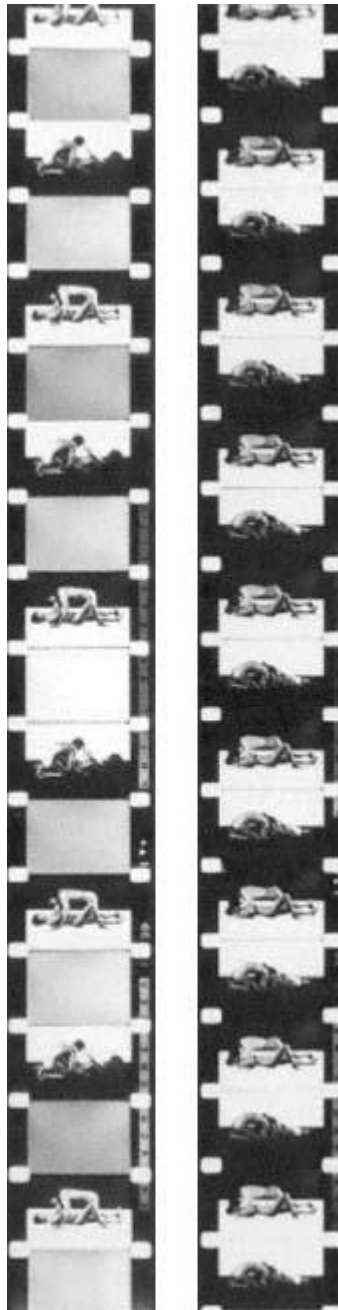
Sequences of discontinuous images produce flicker
and illusory movement in *Piece Mandala/End War.*

permutations. When the lovers' heads are oriented toward the left, the background is black in the top half and white in the bottom half; when the lovers' orientation is reversed, the background reverses to white at the top and black at the bottom. When shots from opposite sides of the lovers alternate frame-by-frame, the background flickers grayly or almost seems to spin vertically while the lovers' bodies appear to whirl horizontally and, at the most rapid rate of flicker, fuse into a single-double body with heads, arms, and legs at both ends. At some moments the black and white images of the lovers are suffused with subtly vibrating hues contributed by interjected frames of solid colors. In Sharits's description: "Blank color frequencies space out and optically feed-fuse into black and white images of one love-making gesture which is seen simultaneously from both sides of its space and both ends of its time."

Simultaneity of sequential moments may be a contradiction in terms, but the flicker effect gives it a kind of perceptual logic. The brain is forced to blend

images that are not only temporally and spatially distinct but even mutually exclusive (such as figures facing left and right at the same time). Flicker breaks down such dichotomies as black/white, color/noncolor, left/right, bottom/top, beginning/ending, female/male.

In the middle of the film, however, the "circularity and simultaneity" is broken by flickering static images of a man (Sharits) raising a pistol to his head and pulling the trigger. The "bullet's" trajectory is traced in white animated dashes that hit the man's temple and then retreat back into the pistol's barrel; whereupon the man lowers the gun again. This doing and undoing of self-destruction is like a vertical line bisecting the "temporal mandala" of the film as a whole. At the same time, this seemingly intrusive image may be taken as an allusion to the perceptual violence of the flicker effect itself—indeed, of the whole process of projecting flickering light at viewers' eyes. While making his flicker films, Sharits was acutely aware of this form of violence. "The projector is an audio-visual pistol," he wrote in a note on *Ray Gun Virus;* "the retinal screen is a target. Goal: the temporary assassination of the viewer's normative consciousness."

In normal film-viewing situations, the projector-pistol also fires discontinuous impulses of light at the viewer's eyes but usually at a sufficiently rapid rate to disguise their discontinuity. (This is one of the projector's major contributions to the "grand scheme" of the camera-eye, as discussed in chapter 1.) What projectors are designed to hide, the flicker effect restores to visibility. It prevents the smooth fusion of frames normally perceived during film projection. Through this rupture in the normal perception of the cinematic image, one can catch a glimpse of the

discontinuous and mechanical processes that underlie the seemingly continuous and natural flow of images on the screen. The projector continues to operate at normal speed, but the rhythm of contrasting frames of color (or black and white) produces an equivalent of the projector's own flicker.

The flicker effect thus depends on a three-stage process involving the film's separate frames, the projector's conversion of those frames into discontinuous impulses of light, and the eye-brain's neural response to that attack of light-impulses. Sharits's artistry lies in his ability to produce visual equivalents of that process itself. This is the basis of his reputation as an analytical filmmaker who, in the words of one critic, "demand[s] that the relationship between screen, image, projector, film, and viewer be considered."[45] Certainly Sharits's flicker films are concerned with the material base and self-referentiality of the medium. But his engagement in the dialectics of eye and camera led him to integrate the medium and the mind's own image-making processes. Sharits frees those processes from cinematic equivalents of the outer world, so that they can create perceptions comparable to the inner world of hallucinations. This is the "temporary assassination of the viewer's normative consciousness" Sharits speaks of.

His flicker films enter the realm of the inner eye by attacking the "retinal screen," but once inside the visual system they lose their violence. In fact, their rhythms of often approximate the alpha rhythms of the brain when it turns off external stimuli to concentrate on its own internal perceptions. Studies of electrical currents in the brain have shown that alpha rhythms (eight to twelve cycles per second) tend to appear even when the eyes close briefly; whereas long and deep meditation is, in Robert Ornstein's phrase, "a high-alpha state."[46] Using an electroencephalograph, Small and Anderson found "considerable alpha-like activity" in the brain-wave patterns of subjects watching their film of flickering white circles.[47] Although the projector shows twenty-four frames per second (and in fact each frame is flashed on the screen two or three times), the *perceived* light impulses may be much slower than that, depending on the degree of contrast from frame to frame. Paradoxically, then, flicker's violent attack on the retina can produce quite opposite effects farther along the visual system. As the rhythmical firing of visual cells spreads

through the brain it may produce, not epilepsy, nausea, dizziness, or other disagreeable effects, but the internal peace of the "meditational-visionary experience." With flickering light as the link between the mechanics of the cinematic apparatus and the physiology of the visual system, Sharits produced versions of the Beyond that are perhaps the most concrete and down-to-earth to be found among films for the inner eye.

Chapter 7—
Balancing Eye and Mind:
Michael Snow

I like to have ecstasy and analysis.
—Michael Snow

"All about seeing," a phrase Michael Snow used to describe his best-known film, *Wavelength* (1967), might be applied to Snow's work as a whole.[1] This chapter will not cover all of Snow's films, however, nor all of the ways they are about seeing. It will concentrate on three films and two cinematic techniques that most explicitly demonstrate Snow's integration of seeing and cinema. In addition to *Wavelength* , the films are « (*Back and Forth*) (1969) and *La Région Centrale* (1971); the techniques are the zoom shot and camera movement. Taken together, they show how and why Snow's most original and significant contributions to the visual aesthetics of avant-garde film derive from his most thorough explorations into the dialectic of eye and camera.

That dialectical relationship deeply interested Snow from the time he began making films, which came some ten years after he had established himself as an important painter and sculptor.[2] Around the time he made *Wavelength* he remarked, "When you narrow down your range and are looking through just that narrow aperture of the lens, the intensity of what you see is so much greater."[3] Some years later he pointed out that the photographic, sculptural, and mixed media works in his major exhibition of 1979-80 demonstrated a common concern with "the kinds of effects the camera has on perception," and specifically, "the focusing concentration involved with the camera."[4] Still more recently Snow has commented, "[C]ameras both intensify and diminish aspects of normal vision, and they 'set apart' those aspects for possible examination."[5] To analyze and make art out of what cameras do to "normal vision"—that is the basis of Snow's visual aesthetics.

By exploiting the limits as well as the intense, concentrated seeing imposed by the frame of the camera-eye, Snow has been able to reveal

much more than the camera normally permits to be shown. He has done so while continuing to accept the camera's mechanicalness and its differences from the human eye. Instead of "humanizing" the camera, as Snow believes Brakhage has done, Snow is dedicated to pursuing "the 'machine-ness' of it."[6] This does not mean that human perception is irrelevant to Snow's concerns but simply that the richest visual experience provided by Snow's films comes from his manipulation of the "machine-ness" of cinema. The same manipulation produces the paradoxical union of "ecstasy and analysis" announced in the epigraph to this chapter.

In an essay published in 1980, Bruce Elder states that Snow's films "elicit an analytic rather than ecstatic response."[7] Two years later, in a published

conversation with Elder, Snow insisted, "I like to have ecstasy *and* analysis" (my emphasis). He then added, "An ecstasy of analysis is an odd state all right! And an analysis of ecstasy seems a waste of good time. Or is film the only occasion for this meeting?" Leaving his rhetorical question unanswered, Snow went on to describe the "meeting" of ecstasy and analysis as a "dual state (simultaneous or oscillating fast or slow from 'one' to 'the other') [which] is provoked by all my films in different ways."[8] To analyze some of those ways and specify the nature of the "meeting" they provoke will be the principal concerns of this chapter.

The critical consensus grown up around Snow's work has tended to emphasize "analysis" at the expense of "ecstasy" and to concentrate on the conceptual aspects of Snow's films without giving comparable attention to the perceptual experience they produce.[9] In fact, when P. Adams Sitney declared "structural film" to be "cinema of the mind rather than the eye" and called Michael Snow "the dean of structural film-makers," he neatly marked off the limits for most critical discussions of Snow's work.[10] Like Sitney, David James places "structural films" in the tradition of art designed to "subordinate the retinal to the intellectual."[11] A similar eye/mind or retinal/intellectual dichotomy underlies the distinction Annette Michelson has made between "the disjunctiveness of the perceptual Now" experienced by viewers of Brakhage's films, and the unified and temporally extended "observation and cognition" produced by the films of Snow.[12] Among other critics the terms of the dichotomy have varied—abstract expressionist versus minimalist, poetic versus philosophical, personal versus impersonal, perceptual versus conceptual, romantic versus modernist, modernist versus postmodernist. But the underlying assumptions (that films for the eye and for the mind are fundamentally different and that Brakhage and Snow must be distinguished by their championing

of the eye and the mind respectively) have persisted in most critical discussions of avant-garde film since the late 1960s.

Snow's films have been readily assimilated into the "anti-visual discourse" to which I referred at the beginning of this book, and they have been especially prized for their examination of cinema's "materials and language" (in David James's phrase). Consequently, their contribution to the visual aesthetics of avant-garde film has not been given the attention it deserves. It seems especially appropriate, therefore, to end this book with a filmmaker who is widely assumed to make "cinema of the mind rather than the eye," but who, in fact, uses the visual means of cinema to address both eye *and* mind.

1—

In Snow's visual aesthetics the work of art engages the spectator in a perceptual balancing act, "a balancing of 'illusion' and 'fact,'" as he once put it. Pursuing this line of thought in an interview, Snow explains that *Wavelength* "attempts to balance out in a way all the so-called realities . . . involved in the issue of making a film." He then compares his own intentions with "the way Cézanne, say, made a balance between the colored goo that he used, which is what you see if you look at it that way, and the forms that you see in their illusory space."[13]

Analogous to Cézanne's "colored goo" is cinema's projected light falling on the flat surface of the screen. From that fact comes the illusion of solid forms in three-dimensional space. Snow's goal is to bring the spectator to the fullest possible recognition of both qualities of the cinematic image: its referential nature as representation of the visual world and its essential nature as, in Snow's words, "projected moving light image."[14] From that recognition on the part of the spectator comes the "dual state," or balance, of "ecstasy and

analysis" Snow desires. Nowhere is it more fully realized than in the "demonstration or lesson in perception" provided by *Wavelength* .[15]

Although Regina Cornwell is right in saying that *Wavelength* "hinges on the zoom as does all discussion of it," one must not forget the rich visual texture of the film as a whole.[16] Extreme changes in exposure, flares and flash frames, negative footage, flicker effects, superimpositions, ephemeral spots and gleams of light (reflected off gels held in front of the lens), and innumerable shifts in the color and density of the image recur throughout the film like playful improvisations within the stern and unvarying structure, or shape, imposed by the zoom.

Such effects (which one would be inclined to call painterly were they not more characteristic of Snow's photographic works than his actual paintings) are both perceptual and conceptual. With their many brief and unexpected changes in light, color, and texture, they engage the viewer's perception in the moment-by-moment experience of the film (the "perceptual Now" that Michelson ascribes to Brakhage's films but ignores in Snow's). At the same time, they act as "intimations of other ways of seeing," as Snow has put it.[17] They subvert the conventional "illusory space" of the cinematic image by calling attention to the filmmaker's equivalent of the painter's "colored goo." They encourage the viewer to look *at* the image as well as *into* it, and they complement the countless small but clearly visible shifts in focal length through which the zoom calls attention to itself and, simultaneously, draws the viewer deeper and deeper into its own unique realm of perception.

That perception is unique because it is only possible through the mechanical eye of the zoom lens. Like any zoom-in, *Wavelength's* zoom does three different things at the same time. It narrows the camera's angle of vision; it "flattens" the "illusory space" perceived on the screen; and it keeps whatever is in the center of the frame when the zoom begins, exactly in the center for the full duration of the zoom.[18] The third of these characteristics is the least noted in discussions of the zoom, yet it is basic to both the perceptual and conceptual experience evoked by the film.

Snow framed his shot so that the center of the projected image on the screen is occupied by the photograph of waves pinned on the far wall of the room. Throughout the zoom, the photograph holds its central position, and as it expands toward the borders of the projected image, everything around it gradually disappears. By minute increments, the camera's angle of vision narrows until finally the photograph fills all the available space on the screen. In this way the mechanical and optical functions of the zoom lens determine the formal structure and perceptual limits of *Wavelength* .

It is instructive to compare *Wavelength* with Albie Thoms's *Bolero* (1967), a film made in the same year as *Wavelength* and shown in the same Knokke-le-Zoute festival at which *Wavelength* won the Grand Prize. *Bolero* is a single-take, fifteen-minute tracking shot made in a nondescript back street. To the accompaniment of Ravel's music, the camera creeps past buildings, yards, parked cars, garbage cans, and so on until it arrives at an extreme close-up of the eyes of a young women who is sitting at the end of the street. Thoms was specifically interested in "observing the effect of movement on perception."[19] It is true that the visual effect of his tracking camera approximates what one might actually see

while walking through the narrow street and directly up to the seated woman. The principal difference between Thoms's tracking shot and Snow's zoom shot is that the former has equivalents in ordinary perceptions of the visual world; the latter does not.[20]

In *Wavelength* the mechanical eye of the zoom lens creates a perceptual experience that cannot be duplicated by the human eye. By imposing its narrowing angle of vision on the space of the room, the zoom makes the wall

seem to approach the viewer, rather than the viewer approach the wall. The wall seems to come forward exactly as the buildings across the street seem to advance until they look like flat images pressed against the windows of the room. This is the inevitable result of the zoom's flattening effect. At the same time, whatever remains visible on the screen seems to be growing bigger. What becomes biggest and flattest of all is the photograph of waves.

Presumably this is why Snow has said, "From the beginning the end is a factor. In the context of the film the end is not 'arbitrary'; it is fated."[21] It is "fated" because the end—that is, the photograph—is visibly present in the beginning as a gray spot precisely in the center of the projected image, and there is no choice but for it to become increasingly apparent as the photograph increases in size. When the photograph is the only thing left on the screen, the beginning can be said to have become the end. What was present, in miniature, at the beginning is still there, grown large, at the end.

As *Wavelength* permits us to perceive the interpenetration of beginning and end, so it also makes visible the interpenetration of time and space: the viewing time of the film expressed as a center-to-peripheries expansion in space. With the passage of time, every minuscule change in the lens's focal length marks another expansion of the center toward the borders of the frame. As the film's time gets longer, its space gets flatter and its central image larger. The paradox of a center expanding to its own peripheries and a beginning containing its own ending is potentially present in every zoom shot, but the zoom in *Wavelength* make that paradox visible and invests it with metaphysical significance.

When the borders of the photograph disappear beyond the borders of the projected image, the perfectly flat, rather dense, and uninteresting photograph suddenly reveals what manufacturers of lenses like to call "infinity." Up to this crucial point, however, the film seems to be leading toward the opposite perception. The deep space of the room has become steadily shallower, until the flatness of the photograph and the flatness of the screen seem to be one and the same. Then the flatness evaporates, and the viewer
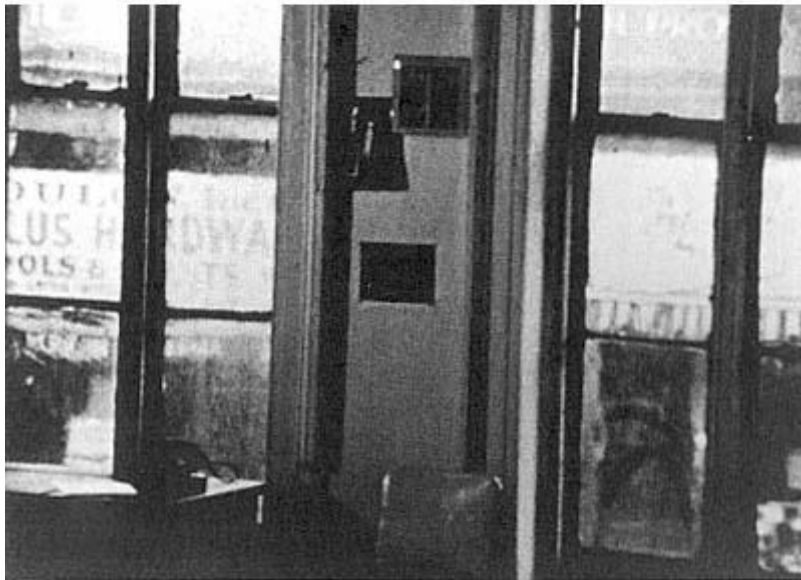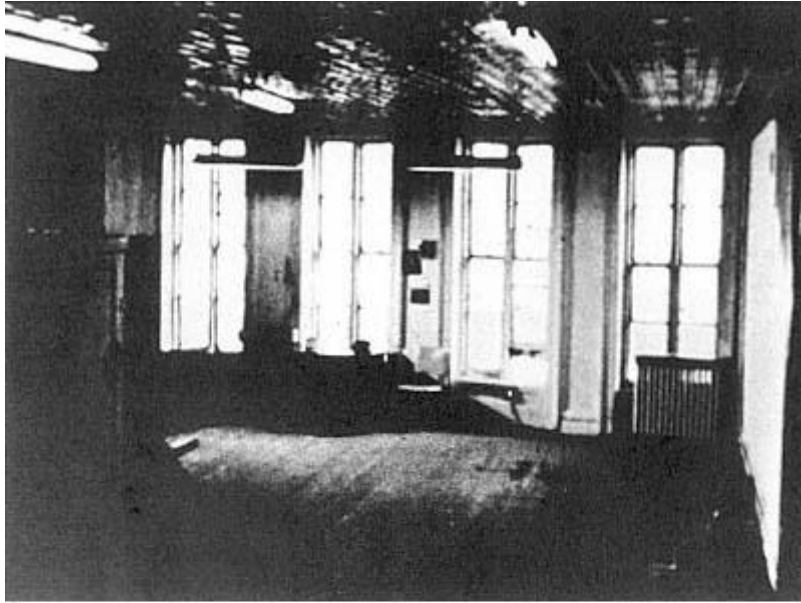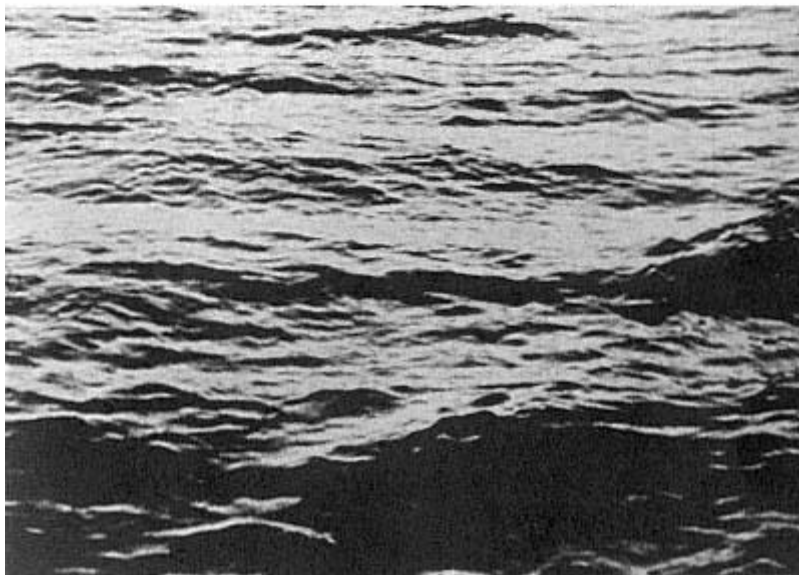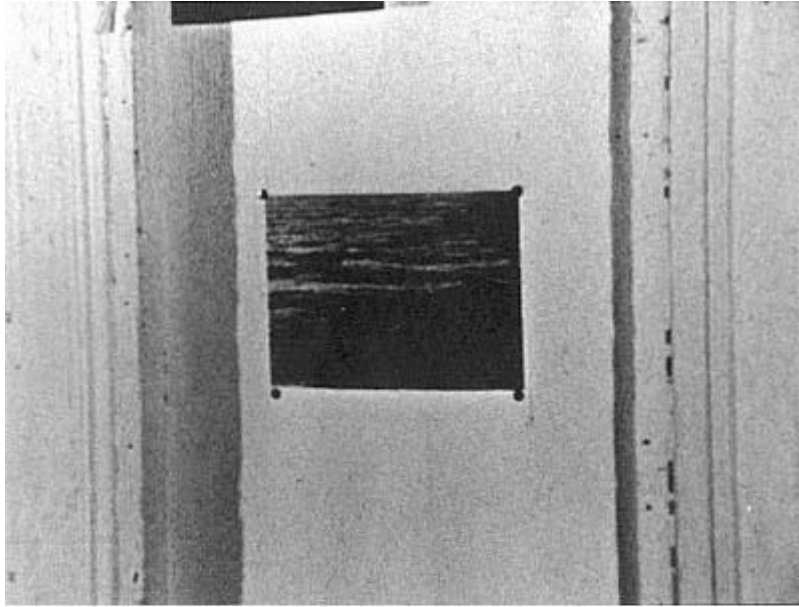
Progressive stages of the zoom in *Wavelength* bring the photograph of waves forward until it completely fills the screen.

perceives depth again. But the depth in the photograph is not like the depth in the room. It cannot be "flattened" by the optics of a zoom lens. This explains why the zoom finally gives up. It briefly shifts back to a slightly wider angle, as if it were gesturing toward its beginning. Then the whole image goes out of focus and fades into white: the clean slate of a new beginning.

Although there is nothing more the zoom lens can show us, the film does not end on a dead center of exhausted perception. Its affirmation of the flatness of the photograph/screen produces a new and qualitatively different sense of depth, one that could not be experienced so long as the wall provided a ground for the photograph and prevented our perceiving the photograph's "*infinity* ." By the same token, the film affirms yet goes beyond the materiality of the image on the screen and the means of putting it there. From the very thoroughness of its "analysis" arises the experience Snow calls "ecstasy": the flattening effect of the zoom (analysis) leads to the viewer's perception of infinite depth (ecstasy). Where the film ends, the imagination carries on, free of material constraints. Or, as Snow remarks, "And past the end it should have ripples."[22]

As Snow envisions the film's development, there is a perceptual change from the camera/eye to the screen/mind: "The space starts at the camera (spectator's) eye, is in the air, then on the screen, then is within the screen (the mind)."[23] It is in the final minutes of the film, as the photograph of waves and the film screen become congruent, that what was *on* the screen can be said to appear most completely *within* it, and therefore within the mind.

A different way of conceptualizing the perceptual journey from space to screen to mind is suggested by Snow's remarks on frames and windows. Snow has said that a projected film or anything "put on a wall with a frame around it" encourages the viewer to feel as if he or she is "looking out a window." Snow then goes on to say, "It's amazing how windows are influential. They seem like metaphors for the eyes in the head; when you're in the house you're looking out the eyes and we are the brains. That was one thing I was thinking about in making *Wavelength* ."[24]

For much of the film, the viewer shares the brain's point of view from within the room/head and can look out the windows/eyes at the end of the room. At the same time, the viewer is sitting in a darkened room watching the projected image on the screen as if *it* were a window. When the windows of the room are eliminated by the zoom, the photograph serves as another sort of window, revealing a vista quite different from the one visible through the windows that face onto the street. Because of the flattening

and enlarging effects of the zoom, the photograph-as-window and the screen-as-window become one and the same. If both windows are also eyes, then what they show/see is brought right up to the portals of sight, where a new kind of perception converts flatness into "infinite" depth. That conversion occurs "in the house" where "we are the brains." The mind carries on when the materiality of the film medium and the optics of the zoom lens can go no further. This is the beginning of the "ripples" that extend "past the end."

2—

In *Metaphors on Vision* Brakhage urges filmmakers to liberate the camera from the built-in restraints of the tripod by taking it in their own hands and letting it move as freely as the human eye: "One can hand hold the camera and inherit worlds of space." For Snow, however, the opposite approach has proved to be more fruitful. As Snow discovered in making « and *La Région Centrale* , the "illusory space" of the cinematic image can be radically transformed by a moving camera firmly attached to a tripod. What Brakhage regarded as a mechanical limitation, Snow recognized as a potentially liberating technique if pushed beyond its conventional limits. In that sense, Snow's approach is not so different from Brakhage's. He also uses the machinery "against specifications" and in total defiance of the conventions respected by the dominant cinema. By exaggerating its "machine-ness," he forces the apparatus to produce new ways of seeing that fully satisfy Brakhage's own criteria for "eye adventures." This is what Snow did with the zoom lens in *Wavelength* and what he went on to do with a moving camera on an ordinary tripod in « , and with the camera on a much more elaborate version of a tripod in *La Région Centrale* .

Snow has said that he wanted the camera movements in « to make viewers conscious of their own act of perception: "exactly what your eyes and mind are doing when you're watching that."[25] The result would be, he hopes, a "kind of demonstration or lesson in perception and in concepts of law and order and in their transcendence."[26] By "law and order," Snow presumably means the very strict rules he imposed on the recording of the image: one location; fixed camera position; no movement except perfectly horizontal pans; and, later in the film, absolutely vertical tilts, and no variation in the distance covered by each pan and tilt.[27] The mechanical regularity of the camera's movement is given further emphasis by a sound track composed of a

continuously running motor and a sharp *pop* marking the end of each camera movement.

Throughout the film the same space is shown again and again as the camera pans back and forth, then tilts up and down. In the film's coda, which Snow has likened to a memory of the earlier parts of the film, both movements appear simultaneously in superimposition. This represents a kind of "transcendence" of "law and order," but another and more powerful transcendence arises from the one significant variable in the filming process: the speed of the camera's movements back and forth, up and down.

After a few introductory pans across the outside wall of a ground-floor classroom, the camera takes its permanent position inside the classroom and begins to pan slowly across a wall that has four windows opening onto a lawn and street beyond. As the film progresses, the physical limitations of the room are "transcended" through camera movement, just as a comparable room becomes transformed through the optical effects of the zoom lens in *Wavelength* . Also as in *Wavelength* , the camera's position relative to the wall is crucial to the perceptual effects of the film. The camera is placed so that at its farthest swing to the left it takes in the end of the room where there are some desks, a green chalkboard, and a door opening to the outside. On its rightward swing, the camera stops just short of the other end of the room. The relationship between the arc of the pan and the space of the room produces an asymmetrical image on the screen. The pan to the left ends with an image of much deeper space than does the pan to the right, and when the arc of the pan is at its midpoint, the wall is still at an oblique angle to the "picture plane" (the plane defined by the screen itself). Only when it is close to the rightward extremity of its pan does the camera face the wall directly and bring it into a parallel relationship with the screen's picture plane.

At slow panning speeds, this asymmetry is not particularly striking. One sees a stable, three-dimensional space that the camera slowly scans back and forth, just as one might do by turning one's head repeatedly left and right. (Snow has remarked that the film "involves one's neck as well as one's mind-eyes.")[28] When the panning speed increases, however, the movement seems to be transferred from the camera to the room. The space itself seems to be sliding back and forth across the surface of the screen. At the same time it retreats and advances as its perceived depth changes with every swing of the camera to the left (deep space) and right (shallow space). At still faster panning speeds, the three-dimensional room becomes a blurred two-dimensional plane that not only jerks back and forth but also seems to bulge and bend at the middle, or to see-saw toward and away from the viewer as the pan leaps between deeper and shallower space. By now, the camera's very rapid movements generate a mixture of ambiguous and contradictory

A portion of the pan from one end of the
classroom toward the other (left)
and the tilt between floor and ceiling (right) in «
(Courtesy National Gallery of Canada).

perceptions that totally "transcend" the limits originally imposed by the space
of the room and the mechanical regularity of the pans.

At the height of its panning speed, the camera suddenly switches to
equally rapid tilts, figuratively crossing the horizontal double-headed arrow of
the film's title with a vertical equivalent. Now the image on the screen not only
pumps up and down but rocks in and out as the camera tilts between the floor
and ceiling and over a window that changes shape with each upward and
downward passage of the camera. The camera angle makes the window appear
trapezoidal, like a rectangle receding in space. Because the trapezoid-rectangle
changes shape as the camera changes angles, the whole wall appears to swing
toward and away from the picture plane in a movement that complements the
horizontal rocking of the wall during the panning sequence. Gradually the
speed decreases, and as it does so, the viewer's perception of the space

returns to normal. Then a uniformed policeman approaches the window from outside and peers into the room—as if to verify its return from "transcendence" to "law and order."

The appearance of the policeman is only one of a number of human events that briefly divert attention from the camera's movements. Even those diversions, however, allude to the film's thematic implications by introducing paired opposites, such as in and out, left and right, male and female, coming and going, give and take. The policeman is outside looking in. Early in the film a man washes the outside of the windows with back and forth movements of a rag. A little later he sweeps out the inside of the room with short forward movements of a push broom. He sweeps from right to left, toward the open door, then is glimpsed outside as he walks past the windows from left to right. Subsequently a man draws a double-headed arrow on the chalkboard. A woman sitting at a desk shakes her head from side to side. A man and woman embrace. Another man and woman toss a ball back and forth. A voice is heard saying, "Back and forth, to and fro, hither and thither, hither and yon." During a party scene two men exchange blows in a playful fist-fight, after which a voice says, "It's a draw."

Though momentarily arresting, these scattered events are ephemeral in comparison to the camera movement and its accompanying whir and repeated *pop* . Like the "illusory space" they occupy, the human activities disappear when the camera's oscillations increase in speed and rhythmic intensity. Only an occasional skip or jump in the pans and tilts, or a missed beat on the soundtrack momentarily break the rules Snow imposed on the production of the film's image and sound. The cumulative effect is of "law and order" carried to such an extreme that it finally transcends

itself to produce perceptions of a new and higher order. Here, in other words, is another version of the reciprocal relationship of "ecstasy and analysis."

"In various philosophies and religions," Snow has said, "there has often been the suggestion, sometimes the dogma, that transcendence would be a fusion of opposites. In « there's the possibility of such a fusion being achieved by velocity."[29] From a quantitative change in the speed of the camera's movement comes a qualitative change in perception. From a mechanical repetitiveness comes a very unmechanical experience for the eye and mind.

The viewer completely absorbed by the sound-image repetitions of « may experience a "transcendence" comparable to that brought about by chanting a mantra, or contemplating the interlocking geometrical patterns of a yantra, or surrendering body and mind to an endlessly spinning dance and repetitive chant such as Sufi "whirling dervishes" perform. These spiritual exercises have a physiological basis (aural, visual, and kinetic) like that of Snow's film. Like them, « subjects the brain to repeated stimuli in such unrelenting abundance that it cannot translate them into normal perceptions of the world. Unlike those other modes of attaining nonordinary perceptions, however, Snow's film is a work of art, which continues to insist upon its own integrity *as* art. Instead of carrying perception from the mundane to the transcendental, it moves back and forth between the two, balancing "transcendence" with "law and order," "ecstasy" with "analysis," the "Beyond" with the here and now of the filmmaking process and the craft of the filmmaker.

As the coda approaches its end, the soundtrack falls silent while superimposed pans and tilts crisscross each other at dizzying speeds, and the whole image glows with soft blue light. Suddenly this transcendent image is replaced by solid red, then by a grainy green (suggestive of the green chalkboard in the classroom or green film leader). At the same time the silence is broken by the applause of an anonymous audience. With that characteristically wry and self-reflexive gesture, Snow brings the film down to earth, restores its balance, and implicitly declares (like the voice heard earlier in the film), "It's a draw."

3—

La Région Centrale comes closer to declaring a victory for "transcendence," despite its even greater dependence on the mechanicalness of the camera-eye and the camera's tripod-body. "The camera itself is a ma-

chine," Snow explains in discussing *La Région Centrale* , "so attaching it to another, personally designed machine, seemed a way of augmenting its possibilities."[30] Snow's "personally designed machine" was, in effect, a super-tripod. It could be controlled by electronic sound waves transmitted from a distance and was so intricately constructed that it could start and stop the camera and adjust its zoom lens, as well as make the camera pan, tilt, twist, turn, and wheel about in every direction and on "every plane of a sphere," as Snow puts it. It could execute these movements without photographing the super-tripod itself, thus never revealing the central point upon which the camera turned. That invisible point is the "central region" of the film's title. Snow has called it "the absolute centre, Nirvanic zero, being the ecstatic centre of a complete sphere." Such comments suggest, quite properly, that *La Région Centrale* , like *Wavelength* and « , has affinities with visionary films for the inner eye.

By exploiting "the physical effect on the eye-mind of the projected moving light image," Snow reaches the inner eye by way of outer imagery. "*La Région Centrale* ," he explains, "isn't only a documentary photographing of a particular place at various times of day but is equally and more importantly a source of sensations, an ordering of eye movements and of inner ear movements." Although the same might be said of « , the earlier film does not so thoroughly reorient the visual sense of balance ("inner ear movements"). In « the camera traces and retraces the same horizontal and vertical coordinates within the closed space of the classroom. In *La Région Centrale* the camera is outdoors, and its movements follow all possible arcs on a sphere whose circumference is "infinity" and whose center is the camera-eye itself.

The two films are alike, however, in their use of rapid camera movement to flatten the illusory space on the screen. Both films also shift the viewer's perception of movement from the moving frame of the camera eye to the movement of space within the frame. Snow succinctly describes the subjective effects of these two kinds of perceived movement: "If you become completely involved in the reality of these circular movements [of the camera], it's *you* who is spinning surrounded with everything, or, conversely, you are a stationary centre and it's all revolving around you." This relativity of perception arises from Snow's efforts to equate the camera's mode of recording an image with the image as it is seen by the audience: "I wanted to make a film in which what the camera-eye did in the space would be completely appropriate to what it saw, but at the same time, equal to it." Then, echoing his remark about Cézanne's balancing of "colored goo" and "illusory space," Snow continues, "Certain landscape paintings have

achieved a unity of method and subject. Cézanne for instance produced an, to say the least, incredibly balanced relationship between what he did and what he (apparently) saw." *La Région Centrale* is a landscape film that accomplishes the same "balanced relationship" between what the cameraeye "did" and what it "saw."

In the most literal sense, what it "saw" was a boulder-strewn mountaintop, the surrounding mountainous terrain, and the vast canopy of sky. No houses, roads, power lines, or other evidence of human presence are visible. As Snow puts it, "There are no other people but you (the machinery?) and the extraordinary wilderness." The scene not only excludes all references to human activities but offers little that the human eye would find picturesque.

An unlikely subject for a picture postcard, it is a landscape resistant to human sentiment or pathetic fallacies. In this landscape, as Regina Cornwell notes, "Nature does not look back at man. It does not weep."[31] Snow himself states the issue in more ideological terms: "I recorded the visit of some of our minds and bodies and machinery to a wild place but I didn't colonize it, enslave it. I hardly even borrowed it." To the extent that it could not be appropriated by human sentiment, this landscape offered an especially suitable mise-en-scène for a film centered on "Nirvanic zero."

The soundtrack is another element that helps to dehumanize the mise-en-scène. Instead of windy silence punctuated by an occasional distant birdcall, the soundtrack duplicates the sine waves and electronic pulses that controlled the camera's movements. It creates what Snow calls a "sound space" that is "equivalent, and synchronous to the eye space." Ranging from high, quick beeps, to long, low sonorous drones and tinny hums and buzzes like a ringing in the ears, the soundtrack refers directly to the filmmaking machinery and its sonic guidance system. It draws the viewer's attention away from the landscape per se and toward the means through which it becomes a "projected moving light image."

The dehumanization of the landscape is most fully developed through camera movements and the formal structure of the film as a whole. The opening section begins with very slow pans around the ground closest to the "absolute centre." As the soundtrack quietly hums and beeps, the cameraeye methodically scans the hilltop's stony, tundralike surface. (It also catches glimpses of the shadow cast by its super-tripod, which is the closest the film ever comes to identifying the physical support for its invisible center.) Very gradually the camera-eye shifts upward, the circles widen, and more and more of the surrounding landscape comes into view. Eventually the circling pans take in the full 360 degrees of the horizon, and
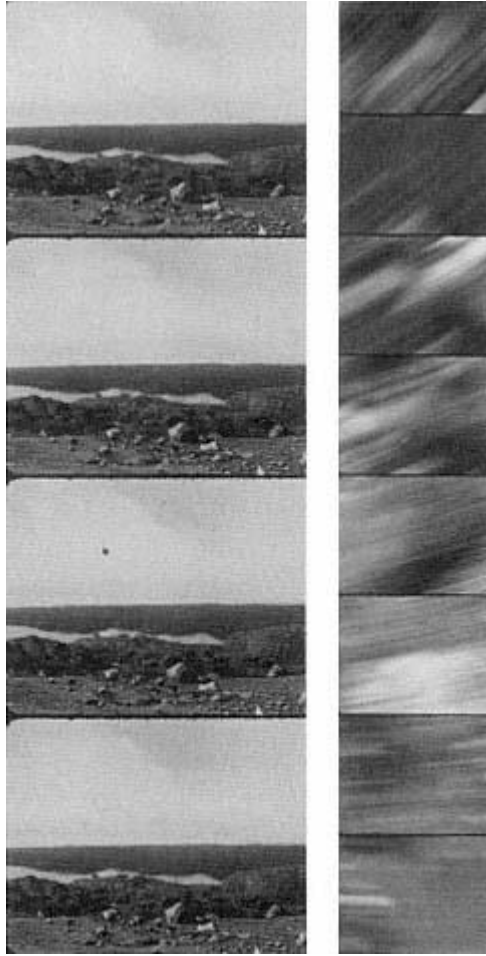
Left, the vista of sky and rocky terrain as the camera slowly circles
the horizon early in *La Région Centrale*
(Courtesy National Gallery of Canada).
Right, as seen from "the ecstatic centre of a complete sphere,"
earth and sky race across the screen during the camera's most
rapid and unpredictable movements in *La Région Centrale*
(Courtesy National Gallery of Canada).

continuing upward, circle around the bright blue sky. Since the final section of the film also ends in the sky, one could argue that the opening section establishes the general movement and structure for the film as a whole: from earth to sky, from down to up, from solid, rocky presence to airy transcendence.

After the long, slow establishing shot that constitutes the opening section of the film, the camera-eye breaks free from its earthbound point of view. It begins to survey the landscape from every possible angle and without regard to the horizontal-vertical coordinates of the normal visual world. In Snow's words, "It starts out *here* , respecting the gravity of our situation but it more and more sees as a planet does. Ups downs up, down ups down, up ups up."

Up and down, sky and earth, figure and ground become relative to the camera's movement—or to the perceived movement of the space within the frame of the camera-eye: "[T]he frame is very important as the image is continually flowing through it. The frame is eyelids." The horizon line may suddenly whirl diagonally through the frame; the earth may drop down into the frame from above, reversing the usual figure-ground relationship of earth and sky; or the horizon may turn on an invisible axis within the frame, carrying sky and earth around and around with it. When the movement becomes sufficiently rapid in any direction, depth disappears and distinctive shapes blur into curved

planes of textured color whizzing through the frame. Approximately midway through the film, the image grows dark, the white disk of a full moon passes and repasses against a blue-black sky. At one point, it even performs a little circular dance around the edges of the frame. Then, as the camera relentlessly pans around and around the horizon, the sky slowly reddens behind looming black silhouettes that turn into solid boulders as the morning light returns.

With the end of the film approaching, the velocity of the camera's movements and the unpredictability of their direction increase noticeably, until the camera is making all of its possible movements at its fastest possible speed. Great sweeping "wipes" (as Snow calls them) cross the frame from every direction.[32] Suddenly a rainbowlike curve of prismatic color appears and disappears near the left side of the frame. The camera's movement decelerates rapidly and the screen becomes a bright misty white. A pale disk of light—the sun or a refracted image thereof—slides into the frame. Then a larger light moves to the center of the frame. It fades and returns as another white ring of light appears in the upper left. The lights disappear but the whole frame continues to shine with white

light until flared frames of red-orange announce the film's conclusion. Thus *La Région Centrale* culminates, much like *Wavelength*, in an affirmation of "pure" light, the ultimate medium of filmic expression—and of the visionary experience.

This transcendent image of light is balanced in the film by a very different visual element. *La Région Centrale* begins with a large yellow **X** stretching from corner to corner of the black frame. The same **X**, varying somewhat in hue and brightness, also appears at the end of the film and at irregular intervals throughout. Sometimes it falls between significant changes in camera movement; at other times it simply interrupts a movement that continues when the **X** disappears. Since no title or credits appear in the film, the **X** might be thought of as their replacement. "It's a title," Snow has suggested, "a reminder of the central region—the whole thing is about being in the middle of this—the camera and the spectator."[33] "Being in the middle" is not only what the film is "about." It is also how the film was made by the camera and is seen by the spectator: from "the ecstatic centre of a complete sphere."

In addition to being a graphic title, a signature, and a statement of theme, the recurring **X** participates directly in the viewer's perceptual experience of the film. It opposes, and hence balances, the effects of the camera's movement. The camera draws the viewer's perception into the space and motion of the image; the **X** reasserts the flat surface of the screen and stability of the frame. The moving image pulls the spectator's eyes toward its leading edge, producing what John W. Locke has called "frame edge concentration."[34] The crossed arms of the **X** return attention to the center of the frame and reestablish the equal importance of all four of its edges. The camera's movements turn the world topsy-turvy; the **X** brings the viewer's "eye movements and inner ear movements" back into visual equilibrium. Occasionally, in fact, the **X** imposes its coordinates directly on subsequent passages by remaining visible as a brief afterimage superimposed on the wheeling and whirling landscape.

The **X** also draws attention to the viewer's own perceptual processes in a very specific way. It produces what perceptual psychologists refer to as "the waterfall effect." If one stares for some time at a waterfall, the solid land at the side of the falls will appear to move upward. Similar perceptions occur anytime one gazes at a clearly defined pattern moving in one direction and then shifts attention to stationary objects nearby. These objects will appear to move in the opposite direction. Although reports of the waterfall effect go back to Aristotle, a satisfactory explanation of the illusion remains to be found. It is assumed, however, that when certain

neural channels in the visual system "become adapted, or fatigued, with prolonged stimulation, . . . this unbalances the system, giving illusory movement in the opposite direction."[35] In *La Région Centrale* that illusory movement is invested in the **X** , which sometimes seems to tip or turn in the direction opposite to that of the movement in the preceding passage. Snow calls it "another kind of motion that's a kind of referral back to yourself."[36] That is precisely the case. The viewer's own visual system makes the **X** appear to move.

Like the flicker effect, this cinematic version of the waterfall effect arises from the conjunction of the machinery of cinema and the psycho-physiological properties of human perception. It helps the visual system regain its perceptual balance by reversing the perceived motion generated by the camera-eye. In still another way, then, the spectator for *La Région Centrale* is "in the middle," between the outer movements of the camera-eye and the inner counter-movements of his or her own perceptual system. To find oneself in *that* central region is to experience in another way the balance of "ecstasy and analysis" toward which Snow constantly guides the viewers of his work.

Originally, according to Snow, *La Région Centrale* was to begin with shots of himself and his three assistants setting up the camera, talking, and moving about. By choosing to omit that material, Snow not only simplified and strengthened the film's formal structure but also quite literally dehumanized the landscape and turned it over to the camera. He made sure that the camera-eye would not be identified with the human eyes that also surveyed the scene. The camera was not to be, in Snow's words, "a stand-in for the spectator" but was to see in its own way.[37] In its autonomy, however, the camera-eye does not become irrelevant to human vision. Quite the contrary. Because of its peculiar capacity for movement and framing, it opens the spectator's eyes to ways of seeing they could not achieve on their own—or at least could not sustain at the same level of intensity and formal development.

While *La Région Centrale* was in production, there was a plan for Joyce Weiland, who was one of Snow's assistants on the project, "to make a film about the making of *La Région* ." Although the film was never completed, its proposed title neatly captures the essence of Snow's relationship to the machinery of filmmaking, and, in fact, it might stand for the dialectic of eye and camera discussed throughout this book. The film was to be called *A Humane Use of Technology* .

Appendix: Film Sources

The following information is far from exhaustive and is only intended to assist readers in finding films specifically referred to in this book. In addition to the sources mentioned below, there are other distributors of avant-garde films, as well as many universities, museums, and public libraries with film collections containing work by avant-garde filmmakers. The names of film distributors will be shortened or abbreviated as follows:

Canyon—Canyon Cinema, 2325 3d St., Suite 338, San Francisco, CA 94107

CFMDC—Canadian Filmmaker's Distribution Centre, 67A Portland St., Toronto, Ontario M5V 2M(

Corinth—Corinth Films, 34 Gansevoort St., New York, NY 10014

FMC—Filmmakers' Cooperative, 175 Lexington Ave., New York, NY 10016

MOMA—Museum of Modern Art Film Circulation, 11 W. 53d St., New York, NY 10019

Mystic Fire—Mystic Fire Video, 24 Horatio St., New York, NY 10014

NFB—National Film Board of Canada, 1251 Avenue of the Americas (16th Floor), New York, NY 10020

Kenneth Anger's films are available from Canyon and can be purchased on video from Mystic Fire. Stan Brakhage's films are available from FMC and Canyon. CFMDC also has a large selection of Brakhage's films, and Mystic Fire sells *Dog Star Man* on video. Paul Sharits's films are available from FMC and Canyon, and Michael Snow's films from CFMDC and FMC. James Whitney's films are distributed by MOMA, and they are available on video from Mystic Fire. As of this writing, Jordan Belson has withdrawn his films from circulation. Several of his early films are in the collection of Anthology Film Archives in New York, and Mystic Fire sells *Samadhi and Other Films* on video, with Belson's original sound-tracks replaced by a musical score by John Luther Adam. The videotape includes

fragments of *Re-Entry, Samadhi, World* , and *Chakra* , as well as footage made in the 1980s and not previously released.

The classic avant-garde films of the 1920s—*Ballet mécanique, Un Chien andalou, Emak Bakia, Etoile de mer, The Man with a Movie Camera* —are available from MOMA. Sources for other films mentioned in the book are as follows:

Arnulf Rainer (Peter Kubelka, 1960) Canyon and FMC
Around Perception (Pierre Hébert, 1968) NFB
Blood of a Poet (Jean Cocteau, 1930) Corinth
Bolero (Albie Thoms, 1967) The National Library, Canberra, Australia, and the Royal Belgian Film Archive, Brussels
The Cage (Sidney Peterson, 1947) Canyon and FMC
Cinetude 2 (Keith Rodan, 1969) CFMDC
Geography of the Body (Willard Maas, 1943) FMC
The Flicker (Tony Conrad, 1966) Canyon and FMC
The Lead Shoes (Sidney Peterson, 1949) Canyon and FMC
Mr. Frenhofer and the Minotaur (Sidney Peterson, 1949) Canyon and FMC
N.Y., N.Y. (Francis Thompson, 1957) MOMA
Raindance (Standish Lawder, 1972) Canyon and FMC
Serene Velocity (Ernie Gehr, 1970) Canyon and FMC
Spherical Spaces No. 1 (Stan Vanderbeek, 1961) Canyon and FMC

Notes

Preface

1. Martin Jay, "In the Empire of the Gaze: Foucault and the Denigration of Vision in Twentieth-Century French Thought," in *Foucault: A Critical Reader* , ed. David Couzens Hoy (Oxford: Basil Blackwell, 1986), 176. The phrase "visual thinking" alludes to the title of Rudolf Arnheim's *Visual Thinking* (Berkeley and Los Angeles: University of California Press, 1969; repr. 1980).

2. Some of the forms a pro-visual discourse can take are represented by the contributions to the second volume of the series Dia Art Foundation Discussions in Contemporary Culture: *Vision and Visuality* , ed. Hal Foster (Seattle: Bay Press, 1988). With the exception of the last two or three pages of Jacqueline Rose's essay, the volume includes only passing references to film and none at all to avant-garde film.

3. I have presented more thorough definitions of avant-garde film in "On Defining Avant-Garde Film," *Opsis* 1, no. 1 (1984): 7-12, and "Between Agonism and the Autonomy of Art: The Case of Al Razutis," *Cantrills Filmnotes* 59-60 (1989): 29-33.

Introduction

1. Fernand Léger, "Functions of Painting," unpublished manuscript quoted in *Film as Film: Formal Experiment in Film, 1910-1975* (London: Arts Council of Great Britain, 1979), 41.

2. Man Ray, *Self-Portrait* (Boston: Little, Brown, 1963), 273; quoted in Tony Mussman, "Early Surrealist Expression in the Film," *Film Culture* 41 (1966): 12.

3. Antonin Artaud, *Oeuvres Complètes* (Paris: Gallimard, 1978), 22; quoted in Mussman, "Early Surrealist Expression in Film," 14. break

4. Hans Richter, "The Badly Trained Sensibility," in *The Avant-Garde Film: A Reader of Theory and Criticism* , ed. P. Adams Sitney (New York: New York University Press, 1978), 22. (Richter's essay originally published in 1924.)

5. Dziga Vertov, "On the Significance of Nonacted Cinema," *Kino-Eye: The Writings of Dziga Vertov* , ed. Annette Michelson, trans. K. O'Brien (Berkeley and Los Angeles: University of California Press, 1984), 37. (Vertov's essay originally published in 1923.)

6. Germaine Dulac, "The Essence of the Cinema: The Visual Idea," in Sitney, *Avant-Garde Film* , 41. (Dulac's essay originally published in 1925.)

7. Stan Brakhage, ["Introduction"], *Metaphors on Vision* (New York: Film Culture, 1963), n.p.

8. Rudolf Arnheim, *Film as Art* (Berkeley and Los Angeles: University of California Press, 1960).

9. Barbara L. Kevles, "Slavko Vorkapich on Film as a Visual Language and as a Form of Art," *Film Culture* 38 (1965): 1-46.

10. R. L. Gregory, *Eye and Brain: The Psychology of Seeing* , 2d ed. (New York: McGraw-Hill, World University Library, 1973), 7-8.

11. Jacques Aumont, "Points de vue: l'oeil, le film, l'image," *Iris* 1, no. 2 (1983): 3-13.

12. Dudley Andrew, *Concepts in Film Theory* (Oxford: Oxford University Press, 1984), 35.

13. David Curtis, *Experimental Film: A Fifty-Year Evolution* (New York: Dell, 1971), 12; Lenny Lipton, "A Filmmaker's Column," *Take One* 4, no. 1 (1974): 37.

14. P. Adams Sitney, *Visionary Film: The American Avant-Garde, 1943-1978* , 2d. ed. (New York: Oxford University Press, 1979), 370.

15. Parker Tyler, *Underground Film: A Critical History* (New York: Grove, 1969), 28.

16. Gene Youngblood, *Expanded Cinema* (New York: Dutton, 1970), 72.

17. See the Selected Bibliography for full documentation on the works by Turim, Mellincamp, Gidal, Le Grice, and Polan, cited in the following paragraphs, as well as other works relevant to the history, theory, and interpretation of avantgarde film.

18. David E. James, *Allegories of Cinema: American Film in the Sixties* (Princeton: Princeton University Press, 1989), 84.

19. Brakhage, "The Camera Eye," *Metaphors on Vision* , n.p.

20. Jean Epstein, "Le Regard du Verre," *Ecrits* , 136-37. Quoted in P. Adams Sitney, "Image and Title in Avant-Garde Cinema," *October* 11 (1979): 112. (Epstein's essay originally published in 1925.) Dulac, "The Essence of the Cinema," 39; Vertov, "The Council of Three," *Kino-Eye* , 15 (Vertov's essay originally published in 1923.)

21. Jean-Louis Baudry, "The Ideological Effects of the Basic Cinematic Apparatus," *Film Quarterly* 28, no. 2 (1974-75): 39-47; Baudry, "The Apparatus," *Camera Obscura* 1 (1976): 104-26; Jean-Louis Comolli, "Technique and Ideology: Camera, Perspective, Depth of Field," *Film Reader* 2 (1977): 128-40. See also Claude Bailblé, "Programmation du regard," *Cahiers du cinéma* , 281 (1977): 5-19. break

22. Dziga Vertov, "From Kino-Eye to Radio-Eye," *Kino-Eye* , 90. (Vertov's essay originally published in 1929.)

Chapter 1— The Camera-Eye: Dialectics of a Metaphor

1. Dziga Vertov, "We: Variant of a Manifesto," in *Kino-Eye: The Writings of Dziga Vertov* , ed. Annette Michelson, trans. K. O'Brien (Berkeley and Los Angeles: University of California Press, 1984), 8. (Vertov's essay originally published in 1922.)

2. Renato Poggioli, *The Theory of the Avant-Garde* (New York: Harper & Row, Icon Editions, 1971), 201.

3. Germaine Dulac, "The Aesthetics. The Obstacles. Integral Cinegraphie," *Framework* 19 (1982): 7, 9. (Dulac's essay originally published in 1927.)

4. Jean Epstein, quoted in Ian Christie, "French Avant-Garde Film in the Twenties," in *Film as Film* (London: Arts Council of Great Britain, 1979), 38.

5. Jean Epstein, "Bonjour Cinéma," *Afterimage* (London) 10 (1981): 13. (Epstein's essay originally published in 1921.)

6. Louis Delluc, quoted in Stuart Liebman, "French Film Theory, 1910-1921," *Quarterly Review of Film Studies* 4, no. 1 (Winter 1983): 12.

7. Germaine Dulac, "The Essence of the Cinema: The Visual Idea," in *The Avant-Garde Film: A Reader of Theory and Criticism* , ed. P. Adams Sitney (New York: New York University Press, 1978), 39. (Dulac's essay originally published in 1925.)

8. Louis Aragon, "Du Décor," qutoed in Liebman, "French Film Theory," 6. (Aragon's essay originally published in 1925.)

9. Louis Delluc, quoted in Jacques Brunis, "The Experimental Film in France," in *Experiment in Film* , ed. Roger Manvell (London: Grey Walls Press, 1949), 70.

10. Jonas Mekas, [Interview], *Parachute* 10 (1978): 24.

11. Stan Brakhage, lecture at McGill University, November 1970.

12. Ernie Gehr, "Program Notes for a Screening at the Museum of Modern Art," January 1971; revised December 1977, in Sitney, *Avant-Garde Film* , 247.

13. Michael Snow, "An Interview," *Form and Structure in Recent Film* (Vancouver: Vancouver Art Gallery, 1972), n.p.

14. Peter Kubelka, "The Theory of Metrical Film," in Sitney, *Avant-Garde Film* , 140.

15. Slavko Vorkapich, "Motion and the Art of Cinematography," *Film Culture* 40 (1966): 78. (Vorkapich's essay originally published in 1926.)

16. Vertov, "We," *Kino-Eye* , 8-9.

17. Maya Deren, "Cinematography: The Creative Use of Reality," in Sitney, *Avant-Garde Film* , 69. (Deren's essay originally published in 1960.)

18. Laszlo Moholy-Nagy, *Painting, Photography, Film* , trans. Janet Seligman (Cambridge, Mass.: MIT Press, 1969), 21. (Originally published in 1925.)

19. Gunnar Johansson, "Visual Motion Perception," *Scientific American* 232, no. 6 (1975): 76.

20. Alfred L. Yarbus, *Eye Movements and Vision* , trans. Basil Haigh (New York: Plenum, 1967), passim. break

21. R. L. Gregory, *Eye and Brain: The Psychology of Seeing* , 2d ed. (New York: McGraw-Hill, World University Library, 1973), 92.

22. Steven Kovacs, "Man Ray as Filmmaker," *Artforum* 11 (November 1972): 79.

23. Cf. Parker Tyler, "Willard Maas," *Film Culture* 20 (1959): 53-54: "The film makers learned--with the thrill of discovering new land--that the anatomic parts, thus photographed, held mixed as well as ambiguous identities."

24. Guy Davenport, "Two Essays on Brakhage and His Songs," *Film Culture* 40 (1966): 10.

25. James Broughton, "Film as a Way of Seeing," *Film Culture* 29 (1963): 19.

26. George Wald, "Eye and Camera," *Scientific American Offprints* 46 (1950): 2. All subsequent citations to Wald are to this source.

27. Frank S. Werblin, "The Control of Sensitivity in the Retina," *Scientific American Offprints* 1264 (1973): 11.

28. John P. Frisby, *Seeing, Illusion, Brain, and Mind* (New York: Oxford University Press, 1980), 132.

29. R. M. Boynton, "The Visual System: Environmental Information," in *Handbook of Perception* , vol. 1, ed. E. C. Carterette and M. P. Friedman (New York: Academic Press, 1974), 290.

30. Johansson, "Visual Motion Perception," 76.

31. R. L. Gregory, *The Intelligent Eye* (London: Weidenfeld & Nicolson, 1970), 24-25.

32. David Marr, *Vision: A Computational Investigation into the Human Representation and Processing of Visual Information* (San Francisco: W. H. Freeman, 1982), 3.

33. Quoted in David Douglas Duncan, "Prismatics: Photo-Data," *Prismatics: Exploring a New World* (New York: Harper & Row, 1972), n.p.

34. Arnold Gesell, *Vision: Its Development in Infant and Child* (Darien, Conn.: Hafner, 1974), 4.

Chapter 2— The Cinematic Image as a Visualization of Sight

1. Joel Snyder, "Picturing Vision," *Critical Inquiry* 6 (1980): 499-526.

2. René Descartes, *La Dioptrique* , in *Discourses on Method, Optics, Geometry, and Meteorology* , trans. P. J. Olscamp (Indianapolis: Bobbs-Merrill, 1965), 93.

3. Ibid., 91.

4. David C. Lindberg, *Theories of Vision from Al-Kindi to Kepler* (Chicago: University of Chicago Press, 1976), 202 (emphasis mine).

5. Leonardo da Vinci, *The Literary Works of Leonardo da Vinci* , ed. J. P. Richter (London: Phaidon, 1970), 1:142. Leonardo's eye- *camera obscura* comparison is discussed by Lindberg, *Theories of Vision* , 164, and Willem van Hoorn, *As Images Unwind* (Amsterdam: University Press, 1972), 123-30.

6. Descartes, *La Dioptrique* , 91.

7. Leonardo da Vinci, *Literary Works* , 1:142.

8. Several examples are illustrated in Helmut Gernsheim, *The History of* continue *Photography* (London: Thames & Hudson, 1969), 47-51. Gernsheim also provides a useful history of the *camera obscura* , 17-29.

9. Quoted in Arthur K. Wheelock, Jr., *Perspective, Optics, and Delft Artists around 1650* (New York: Garland, 1977), 156. The first four chapters of Wheelock's book provide a detailed discussion of optics, perspective, the *camera obscura* , and visual perception.

10. We will return to this question in chapter 4. For a full discussion of the historical and theoretical aspects of visual perception, see Nicholas Pastore, *Selective History of Theories of Visual Perception, 1650-1950* (New York: Oxford University Press, 1971).

11. Quoted in Wheelock, *Perspective* , 145, 138.

12. William M. Ivins, Jr., *Art and Geometry: A Study in Space Intuitions* (New York: Dover, 1946), 32 (Ivins's emphasis).

13. Leonardo da Vinci, *The Note Books of Leonardo da Vinci* , ed. E. MacCurdy (New York: George Braziller, 1955), 992. Leonardo also recognized that the effects of perspective were enhanced by shading, shadows, and indistinctness of distant objects (aerial perspective).

14. Leon Battista Alberti, *On Painting* , quoted in Samuel Y. Edgerton, *The Renaissance Rediscovery of Linear Perspective* (New York: Basic Books, 1975), 87.

15. For a concise discussion of the influence of medieval optics on Renaissance painters, see Lindberg, *Theories of Vision* , 147-68.

16. Quoted in William M. Ivins, Jr., *On the Rationalization of Sight* (New York: Da Capo, 1975), 15.

17. In Book Two of *On Painting* , Alberti uses the image of a veil to describe this process: "it is like this: a veil loosely woven of fine threads, dyed whatever color you please, divided up by thicker threads into as many parallel square sections as you like, and stretched on a frame. I set this up between the eyes and the object to be represented, so that the visual pyramid passes through the loose weave of the veil." Quoted in Edgerton, *Renaissance Rediscovery* , 118.

18. Ivins, *Rationalization of Sight* , 32.

19. André Bazin, *What Is Cinema?* trans. H. Grey (Berkeley and Los Angeles: University of California Press, 1967), 11, 12.

20. Quoted in E. H. Gombrich, *Art and Illusion: A Study in the Psychology of Pictorial Representation*, 2d ed., rev. (Princeton: Princeton University Press, 1961), 247. For a counterargument see M. H. Pirenne, *Optics, Painting, and Photography* (Cambridge: Cambridge University Press, 1970) and "The Scientific Basis of Leonardo da Vinci's Theory of Perspective," *British Journal for the Philosophy of Science* 3 (1952-53): 169-85.

21. Bazin, *What Is Cinema?* 11.

22. For further confirmation of this point, see Snyder, "Picturing Vision," 520-21, and Lindberg, *Theories of Vision*, 280 n. 99.

23. Peter Galassi, *Before Photography: Painting and the Invention of Photography* (New York: Museum of Modern Art, 1981), 32.

24. Ivins, *Art and Geometry*, 109.

25. R. L. Gregory, *Eye and Brain: The Psychology of Seeing*, 2d ed. (New York: McGraw-Hill, World University Library, 1973), 176. For counterarguments see Pirenne, *Optics*, especially "The Scientific Basis," 170.

26. Gregory, *Eye and Brain*, 175. break

27. Ivins, *Rationalization of Sight*, 14; *Art and Geometry*, 108.

28. Bazin, *What Is Cinema?* 12, 14.

29. Ibid., 21.

30. José Argüelles, *The Transformative Vision* (Berkeley: Shambhala, 1975), 25; Stan Brakhage, "State Meant," *Metaphors on Vision* (New York: Film Culture, 1963), n.p.

31. Brakhage, "Remarks Following a Screening of *The Text of Light*," *Canyon Cinemanews* (March/April 1975): 7.

32. Edgerton, *Renaissance Rediscovery*, 91-123.

33. Argüelles, *Transformative Vision*, 106.

34. Claudio Guillén, "On the Concept and Metaphor of Perspective," in *Comparatists at Work*, ed. S. Nichols and R. Vowles (Waltham, Mass.: Blaisdell, 1968), 77.

35. John Berger, *Ways of Seeing* (London: BBC/Penguin Books, 1972), 16.

36. Stephen Heath, *Questions of Cinema* (Bloomington: Indiana University Press, 1981), 30. For more on ideological analyses of the cinematic apparatus, see Baudry and Comolli, cited in note 21 of the Introduction.

37. Stan Brakhage, "The Camera Eye," *Metaphors on Vision*, n.p.

38. Stan Brakhage, classroom discussion, recorded 11 May 1973, SUNY at Buffalo, Media Center, Inc.

39. Brakhage, classroom discussion, 11 May 1973.

40. *Brakhage Films* (Boulder, Colo.: Stan Brakhage, [1988]), 6.

41. Alberti, *On Painting*, in Edgerton, *Renaissance Rediscovery*, 87.

42. P. Adams Sitney, *Visionary Film: The American Avant-Garde, 1943-1978*, 2d ed. (New York: Oxford University Press, 1979), 438.

43. Michael Snow, "Letter," *Film Culture* 46 (1967): 5.

44. Guillén, "Concept and Metaphor of Perspective," 38.

45. Sitney, *Visionary Film*, 70.

46. Sidney Peterson, *The Dark of the Screen* (New York: Anthology Film Archives and New York University Press, 1980), 20.

47. Among the variations on Emshwiller's and Peterson's techniques are Stan Vanderbeek's use of a "fish eye lens" in *Spherical Spaces, No. 1* (1961) and Francis Thompson's filming of distorted reflections in *N.Y., N.Y.* (1957).

48. Sitney, *Visionary Film*, 276.

49. Sitney, *Visionary Film*, 384-85. Quotation from Olaf Stapledon, *Star Maker* (London: Penguin, 1972), 29. (First published in 1937.)

Chapter 3— "The Untutored Eye"

1. Stan Brakhage, ["Introduction"], *Metaphors on Vision* (New York: Film Culture, 1963), n.p.

2. J.D. Salinger, *Nine Stories* (Boston: Little, Brown, 1953), 298-99.

3. J.R.R. Tolkien, "On Fairy-Stories," in *Tree and Leaf* (Boston: Houghton Mifflin, 1965), 57. (Originally delivered as a lecture in 1938 and first published in 1947.)

4. Alan Watts, *The Joyous Cosmology* (New York: Random House, Vintage Books, 1962), 29, 33. break

5. Aldous Huxley, *The Art of Seeing* (New York: Harper, 1942; Seattle: Montana Books, 1975), 19.

6. Aldous Huxley, *The Doors of Perception* and *Heaven and Hell* (London: Penguin, 1954), 23.

7. Rudolf Arnheim, *Art and Visual Perception: A Psychology of the Creative Eye*, New Version (Berkeley and Los Angeles: University of California Press, 1974), 1.

8. Jonas Mekas, "On the Expanding Eye," reprinted in *Movie Journal: The Rise of the New American Cinema, 1959-71* (New York: Collier, 1972), 118.

9. Quoted in Nicholas Pastore, *Selective History of Theories of Visual Perception, 1650-1950* (New York: Oxford University Press, 1971), 136. Pastore's clear and detailed survey has been an extremely helpful source of information for the discussion that follows.

10. Quoted in Pastore, *Theories of Visual Perception*, 51.

11. George Berkeley, *Works on Vision*, ed. C. M. Turbayne (Indianapolis: Bobbs-Merrill, 1963), 95.

12. Abbé de Condillac, Étienne Bonnot, *Condillac's Treatise on the Sensations*, trans. G. Carr (Los Angeles: University of Southern California School of Philosophy, 1930), 69.

13. Quoted in Pastore, *Theories of Visual Perception*, 131.

14. Huxley, *Art of Seeing*, 20-21.

15. Quoted in Pastore, *Theories of Visual Perception*, 414. Cheselden's complete report (originally published in 1728) is reprinted in Pastore, 413-18.

16. Marius von Senden, *Space and Sight: The Perception of Space and Shape in the Congenitally Blind before and after Operation*, trans. Peter Health (Glencoe, Ill.: The Free Press, 1960), 135.

17. Quoted in Pastore, *Theories of Visual Perception*, 106.

18. Ibid., 88. Not all associationists credited touch with all teaching about solidity and extension. Berkeley, for example, took eye movements into account. Furthermore, touch was often assumed to include movements in space, what today would probably be called the kinesthetic sense.

19. Robert E. Ornstein, *The Psychology of Consciousness* (New York: Viking, 1972), 43-44.

20. Condillac, *Treatise on the Sensations*, 231.

21. William James, *Principles of Psychology* (New York: Henry Holt, 1902), 1:488. (Originally published in 1890.)

22. John Ruskin, *Elements of Drawing*, 5th ed. (London: George Allen, 1895), 5, 5-6n. (Originally published in 1857.)

23. Bernard Berenson, *Seeing and Knowing* (London: Chapman & Hall, 1953), 6.

24. Lilla Cabot Perry, "Reminiscences of Claude Monet from 1889 to 1909," *The American Magazine of Art* 18, no. 3 (1927): 120.

25. Ibid.

26. Quoted in Steven Z. Levine, *Monet and His Critics* (New York: Garland, 1976), 435n.

27. Ibid., 292.

28. E. H. Gombrich, *Art and Illusion: A Study in the Psychology of Pictorial Representation*, 2d ed. rev. (Princeton: Princeton University Press, 1961), 297. break

29. Ibid., 298.

30. Ibid., 172.

31. W. H. Ittelson and F. P. Kilpatrick, "Experiments in Perception," *Scientific American Offprints* 405 (1951): 7.

32. Ibid., 4.

33. R. L. Gregory, *Tye and Brain: The Psychology of Seeing*, 2d ed. (New York: McGraw-Hill, World University Library, 1973), 8.

34. R. L. Gregory, "Visual Illusions," *Scientific American Offprints* 517 (1968): 11.

35. R. L. Gregory, *The Intelligent Eye* (London: Weidenfeld & Nicolson, 1970), 149.

36. Gombrich, *Art and Illusion*, 298.

37. Ibid., 271-72. Gombrich's model of schema and correction also owes a great deal, as Gombrich readily acknowledges, to Karl Popper's argument that science is based on hypotheses (Gombrich's "schema") that can never be proved true but can be tested to discover if and how they are false. When something about them proves to be false, they are modified accordingly (Gombrich's "correction"), and then the process of testing and modifying begins again. For an insightful--if unsympathetic--commentary on Gombrich's adaptation of Popper's falsification hypothesis, see Norman Bryson, *Vision and Painting* (New Haven: Yale University Press, 1983), 18-35.

38. Gombrich, *Art and Illusion*, 313, 298.

39. Austin H. Riesen, "Arrested Vision," *Scientific American Offprints* 408 (1950): 5.

40. Gregory, *Eye and Brain*, 198.

41. T.G.R. Bower, "The Visual World of Infants," *Scientific American Offprints* 502 (1966): 10. See also T.G.R. Bower, "The Object in the World of the Infant," *Scientific American Offprints* 539 (1971); Robert L. Fantz, "The Origin of Form Perception," *Scientific American Offprints* 459 (1961); and Eleanor J. Gibson and Richard D. Walk, "The 'Visual Cliff,'" *Scientific American Offprints* 402 (1960).

42. M. H. Pirenne, *Optics, Painting, and Photography* (Cambridge: Cambridge University Press, 1970), 9.

43. Gregory, *Eye and Brain*, 126.

44. Jim Jackson, *Seeing Yourself See: Eye Exercises for Total Vision* (New York: E. P. Dutton and Saturday Review Press, 1975), 15-33, passim.

45. Ibid., 48.

46. James J. Gibson, *The Perception of the Visual World* (Boston: Houghton Mifflin, 1950), 26-27.

47. Ibid., 26-43, passim. Bill Nichols has proposed similar alternatives (without, however, referring to Gibson's work) under the headings "bracketed perception" ("visual field") and "normal perception" ("visual world"); see *Ideology and the Image* (Bloomington: Indiana University Press, 1981), 12-26. Slavko Vorkapich, on the other hand, made explicit use of Gibson's "visual field"/"visual world" distinctions during his lectures on "The Visual Nature of the Film Medium"; see Barbara L. Kevles's extensive account of the lectures in *Film Culture* 38 (1965): 2-43 (especially 23-24, 29). break

48. Gerald Oster, "Phosphenes," *Scientific American* 222, no. 2 (1970), 83.

49. Ibid.

50. Ibid.

51. Gregory, *Eye and Brain*, 81.

52. Albert Rose, *Vision: Human and Electronic* (New York: Plenum, 1973), 46.

53. Lenny Lipton, "A Filmmaker's Column," *Take One* 4, no. 1 (1974): 37.

54. Stan Brakhage, "To a Canadian Filmmaker," *Brakhage Scrapbook*, ed. Robert A. Haller (New Palz, N.Y.: Documentext, 1982), 120.

55. Jackson, *Seeing Yourself See*, 101.

56. Brakhage, "My Eye," *Metaphors on Vision*, n.p.

57. Stan Brakhage, letter to the author, 27 April 1978. All quotations from Brakhage in this and the following paragraph are from this source.

58. Vasco Ronchi, *The Nature of Light* (Cambridge, Mass.: Harvard University Press, 1970), 266.

59. Brakhage, "The Camera Eye," *Metaphors on Vision*, n.p.

Chapter 4— "Giving Sight to the Medium": Stan Brakhage

1. Robert Kelly, "On the Art of Vision," *Film Culture* 37 (1965), 14-15.
2. Quoted in Stan Brakhage, "Margin Alien," *Metaphors on Vision* (New York: Film Culture, 1963), n.p.
3. Fred Camper, *Stan Brakhage: A Retrospective* (Los Angeles International Film Exposition, 1976), 3.
4. Brakhage, "My Eye," *Metaphors on Vision* , n.p.
5. Brakhage, "The Camera Eye," *Metaphors on Vision* , n.p.
6. Brakhage, "My Eye," *Metaphors on Vision* , n.p.
7. Stan Brakhage, recorded talk at McGill University, November 1970.
8. Stan Brakhage, "Stan and Jane Brakhage (and Hollis Frampton) Talking," *Brakhage Scrapbook* , ed. Robert A. Haller (New Palz, N.Y.: Documentext, 1982), 188.
9. Stan Brakhage, "Stan Brakhage Seminar," *Dialogue on Film* (American Film Institute) 2, no. 2 (1973): 10.
10. Brakhage, "Stan and Jane Brakhage," *Brakhage Scrapbook* , 186.
11. Stan Brakhage and Forrest Williams, "On Filming Light," *The Structurist* 13-14 (1973-74): 95.
12. Stan Brakhage, letter to the author, 27 April 1978.
13. Fred Camper, " *The Art of Vision:* A Film by Stan Brakhage," *Film Culture* 46 (1967): 40. By the time he wrote the notes to *Stan Brakhage: A Retrospective* (see note 3 above), Camper had come to recognize a closer relationship between Brakhage's and the viewer's ways of seeing. He comments on Brakhage's "concern with and awareness of the viewer's process of watching his films" and on ways Brakhage's films are addressed "to the viewer's experiences and seeing in his daily life" (2-3). In general, Camper's writings on Brakhage are among the most sympathetic to Brakhage's visual concerns; the quoted comments on p. 80 are examples of a widespread attitude toward Brakhage that Camper himself no longer shares. break
14. Brakhage, "Before *Scenes From Under Childhood," Brakhage Scrapbook* , 23.
15. Dan Clark, *Brakhage* (New York: Film-Makers' Cinematheque, Monograph Series No. 2, 1966), 79-80.
16. Charles Olson, *Additional Prose* , ed. George F. Butterick (Bolinas: Four Seasons Foundation, 1974), 17.
17. Ibid., 18.
18. Brakhage, "Film: Dance," *Brakhage Scrapbook* , 121.
19. Brakhage, letter to Jonas Mekas, September 1965, *Brakhage Scrapbook* , 32.
20. Ibid., letter to Michael McClure, March 1966, 40.
21. Brakhage, "A Moving Picture Giving and Taking Book," *Brakhage Scrapbook* , 74.
22. Stan Brakhage, lecture at Hampshire College, Summer 1972, audio tape no. 23, Media Study, Inc., Buffalo, N.Y.
23. Stan Brakhage, "The Text of Light," *Cantrills Filmnotes* 21-22 (1975): 45.
24. See, for example, Brakhage's concluding remarks in the interview preceding *Metaphors on Vision* .
25. Stan Brakhage, talk at screening, 31 January 1973; audio tape no. 20, Media Study, Inc., Buffalo, N.Y.
26. Ibid.
27. Alfred L. Yarbus, *Eye Movements and Vision* , trans. Basil Haigh (New York: Plenum, 1967), 125. Other sources on eye movement include Gregory, *Eye and Brain: The Psychology of Seeing* , 2d ed. (New York: McGraw-Hill, World University Library, 1973), 42-44; Roy M. Pritchard, "Stabilized Images on the Retina," *Scientific American Offprints* 466 (1961); and E. Llewellen Thomas, "Movements of the Eye," *Scientific American Offprints* 516 (1968).
28. Yarbus, *Eye Movements and Vision* , 125.
29. Brakhage, "Stan Brakhage Seminar," 10.
30. Rudolf Arnheim, "Dynamics and Invariants," in *Perceiving Artworks* , ed. J. Fisher (Philadelphia: Temple University Press, 1980), 168.
31. Arnold Gesell, *Vision: Its Development in Infant and Child* (Darien, Conn.: Hafner, 1974), 176.
32. Ibid., 38.
33. Ibid., 44.
34. Stan Brakhage, letter to James Tenney, 10 June 1963, *Film Culture* 29 (1963): 89.
35. Brakhage, "Camera Eye," *Metaphors on Vision* , n.p.
36. Quoted in Annette Michelson, "Film and the Radical Aspiration," in *The New American Cinema* , ed. G. Battcock (New York: Dutton, 1967), 97.
37. Gesell, *Vision* , 44.
38. Brakhage and Williams, "Filming Light," 94.
39. Ken Kelman, "Perspective Reperceived," in *Essential Cinema* , ed. P. Adams Sitney (New York: Anthology Film Archives and New York University Press, 1975), 237.
40. P. Adams Sitney, *Visionary Film: The American Avant-Garde, 1943-1978* , 2d ed. (New York: Oxford University Press, 1979), 146. break
41. Michael McClure, *"Dog Star Man," Film Culture* 29 (1963): 13.
42. Brakhage and Williams, "Filming Light," 94.
43. Brakhage, interview by P. Adams Sitney, *Metaphors on Vision* , n.p.
44. Parker Tyler, *Underground Film: A Critical History* (New York: Grove, 1969), 28.
45. Michelson, "Film and the Radical Aspiration," 99. A shortened and revised version of this essay included in *New Forms in Film* , ed. Annette Michelson (Montreux Exhibition Catalogue, 1974) leaves out the critique of Brakhage's hand-held camera movements. Michelson has publicly qualified her stand (at the Society for Cinema Studies conference at New York University in 1985) by saying that

she had "only a slim acquaintance with Brakhage's work" at the time she gave her "Radical Aspiration" talk.

46. Brakhage, letter to Robert Kelly, October 1967, *Brakhage Scrapbook* , 134.
47. Brakhage, interview by P. Adams Sitney, *Metaphors on Vision* , n.p.
48. Brakhage, "In Defense of Amateur," *Brakhage Scrapbook* , 166-67.
49. Brakhage, "My Eye," *Metaphors on Vision* , n.p.
50. Brakhage, lecture at Hampshire College (see note 22).
51. Brakhage, "Film and Music," *Brakhage Scrapbook* , 51.
52. Andreas Mavromatis, *Hypnagogia* (London: Routledge & Kegan Paul, 1987), 238-66, passim.
53. Brakhage, "My Eye," *Metaphors on Vision* , n.p.
54. Brakhage, letter to Robert Kelly, October 1967, *Brakhage Scrapbook* , 134.
55. Brakhage, letter to the Avon Foundation, 18 March 1965, *Brakhage Scrapbook* , 24.
56. Stan Brakhage, unpublished transcript of a talk at the San Francisco Art Institute (12 February 1970), from galley proofs, *Take One* (July 1970).
57. Ibid.
58. Brakhage, "Stan Brakhage Seminar," 10.
59. Brakhage, interview by P. Adams Sitney, *Metaphors on Vision* , n.p.
60. Brakhage, letter to Bruce Baillie, 15 January 1969, *Brakhage Scrapbook* , 152.
61. Brakhage, "My Eye," *Metaphors on Vision* , n.p.
62. Brakhage, "Hypnagogically Seeing America," *Brakhage Scrapbook* , 104.
63. Ibid., 105.
64. Sitney, *Visionary Film* , 216, 450-51 n.
65. Brakhage, recorded talk at McGill University, November 1970.
66. Brakhage, "Stan and Jane Brakhage," *Brakhage Scrapbook* , 184.
67. Brakhage, "The Text of Light," 46.
68. At screenings of the film, Brakhage usually referred to both statements, and he included them in his description of the film in the *Canyon Cinema Catalogue* No. 5 (1982): 35.
69. Brakhage, "The Seen," *Brakhage Scrapbook* , 208.
70. Brakhage, *Canyon Cinema Catalogue* , 38.
71. Quoted in Phoebe Cohen, "Brakhage's I, II, and III," *Millennium Film Journal* 7-8-9 (1980-81): 234-35.
72. Cohen, "Brakhage's I, II, and III," 235.
73. Brakhage, *Canyon Cinema Catalogue* , 40. break

Chapter 5— "Working in Light": Kenneth Anger

1. Robb Baker, "The Trials of Lucifer: An Interview with Kenneth Anger," *The Soho Weekly News* , 28 October 1976, 16.
2. "Aleister Crowley and Merlin Magick," *Friends* 14 (18 September 1970): 16; quoted in Robert A. Haller, *Kenneth Anger* , Filmmakers Filming Monograph No. 5 (Saint Paul and Minneapolis: Films in the Cities and Walker Art Center, 1980), 8.
3. On occasion, Anger has played down the specific influence of Crowley, as for instance when he told an interviewer, "I use Crowley no more in my thinking than older systems like Hindu Mythology, American Indian Mythology. As I said, my frame of reference comes out of Fraser's *The Golden Bough* ." See Michael Reynolds, "Kenneth Anger's Quest for the Divine Flame," *Berkeley Barb* , May 1974, 12.
4. Aldous Huxley, *The Doors of Perception and Heaven and Hell* (London: Penguin, 1959). Originally published in 1954 and 1956 respectively. Subsequent citations to this work are incorporated parenthetically in the text.
5. J. Hoberman, "Sympathy for the Devil," *American Film* (March 1981): 78. Some useful comments on Baudelaire's and Gustav Moreau's imagery of jewels and light in relation to Anger's films appear in Carel Rowe, *The Baudelairean Cinema: A Trend within the American Avant-Garde* (Ann Arbor: UMI, 1982), 53.
6. Kenneth Anger, *Anger Magick Lantern Cycle* (New York: Filmmakers' Cinematheque, 1966), [2].
7. That the jewels may have another, more esoteric, significance has been proposed by a close student of Crowley's works. In some of Crowley's magical ceremonies, the vaginal fluids secreted by a sexually aroused priestess are regarded as having great magical power. These fluids are described as gemlike—"stones of precious water"—in Crowley's *The Book of the Law* . Thus it might be argued that a symbolic consumption of such magically potent "stones" is taking place in the "talisman" scenes of *Inauguration of the Pleasure Dome* . Three of the four jewels are provided by priestesslike women who later take part in the ritualistic orgy that concludes the film. In this connection, it is worth noting that the "Scarlet Woman"—one of Crowley's names for his priestess—is a major character in *Inauguration* and may be one of the figures seen in a procession in *Invocation of My Demon Brother* . (I am indebted to James D. Campbell for information concerning Crowley's sexual magic.)
8. Kenneth Anger, interview, *Take One* 1, no. 6 (1967): 13.
9. Kenneth Anger, "An Interview with Kenneth Anger," *Film Culture* 40 (1966): 68.
10. Anger, *Anger Magick Lantern Cycle* , [1].
11. Ibid. The quotation is credited to "Khaled Khan, The Heart of the Master, Theorem V."
12. Michael Bernstein, *The Tale of The Tribe* (Princeton: Princeton University Press, 1980), 91.
13. Kenneth Anger, letter to Stan Brakhage, quoted in Marjorie Keller, "'Rabbit's Moon' by Kenneth Anger," *Film Culture* 67-68-69 (1979): 205.
14. Ibid., 206. break
15. Ibid., 208.

16. I have not seen this version; here I am drawing upon the description in Haller, *Kenneth Anger* , 8.

17. Anger, *Anger Magick Lantern Cycle* , [1].

18. Jonas Mekas, "Movie Journal," *Village Voice* , 17 May 1973, 89.

19. G. R. S. Mead, *The Doctrine of the Subtle Body in Western Tradition* (London: J. M. Watkins, 1919), 113-14. I was led to this passage by an entry in Carroll F. Terrell, *A Companion to the Cantos of Ezra Pound* , vol. 2 (Berkeley and Los Angeles: University of California Press, 1984), 546.

20. Mekas, "Movie Journal," 89.

21. Plotinus, *The Enneads* , trans. S. MacKenna (London: Faber, 1956), 64.

22. Mekas, "Movie Journal," 89.

23. Baker, "Interview with Kenneth Anger," 16.

24. Quoted in Haller, *Kenneth Anger* , 13.

25. Quoted in Carel Rowe, "Illuminating Lucifer," *Film Quarterly* 27, no. 6 (1974): 26; and in Tony Rayns, "Lucifer: A Kenneth Anger Compendium," *Cinema* 4 (October 1969): 24.

Chapter 6— Making Films for the Inner Eye: Jordan Belson, James Whitney, Paul Sharits

1. Quoted in P. Adams Sitney, *Visionary Film: The American Avant-Garde, 1943-1978* , 2d ed. (New York: Oxford University Press, 1979), 133.

2. Stan Vanderbeek, interview by Ed Emshwiller, recorded 15 December 1973, SUNY at Buffalo, Media Center, Inc.

3. Jonas Mekas, "Movie Journals," *Film Culture* 43 (Winter 1966): 11; reprinted from *Village Voice* , 25 June 1964.

4. William Eral, "Visions Unlimited: A Future View of Cinematic Art," *Canyon Cinemanews* (July-August 1974): 14.

5. Robert Breer, "Robert Breer on His Work," *Film Culture* 42 (1966): 113.

6. Oskar Fischinger, "Radio Dynamics: Document No. 2," in William Moritz, "The Films of Oskar Fischinger," *Film Culture* 58-59-60 (1974): 183.

7. Stan Brakhage, letter to Bruce Baillie, January 1969, *Brakhage Scrapbook* (New Palz, N.Y.: Documentext, 1982), 147.

8. Quoted in Gene Youngblood, *Expanded Cinema* (New York: Dutton, 1970), 228.

9. Ibid., 171.

10. Stan Brakhage, ["Introduction"], *Metaphors on Vision* (New York: Film Culture, 1963), n.p.

11. Brakhage, "The Seen," *Brakhage Scrapbook* , 207.

12. Carlos Castaneda, *Tales of Power* (New York: Simon and Schuster, 1974), 232.

13. Ludwig Wittgenstein, *Philosophical Investigations* , 3d ed. (New York: Macmillan, 1968), 124; quoted in Harley C. Shands, *The War with Words* (The Hague: Mouton, 1971), 103.

14. Aldous Huxley, *The Art of Seeing* (New York: Harper, 1942; Seattle: Montana Books, 1975), 83.

15. James Broughton, "Film as a Way of Seeing," *Film Culture* 29 (1963): 19. break

16. Ronald K. Siegel, "Hallucinations," *Scientific American* 237, no. 4 (1977): 132. All subsequent citations to Siegel are to this source, 132-40 and passim.

17. Brakhage, "Hypnagogically Seeing America," *Brakhage Scrapbook* , 105; Paul Sharits, "Notes on Films, 1966-1968," *Film Culture* 47 (1969): 13. Siegel speculates that the blue color "is related to the initial lowering of the body temperature and to the absorption of blue light by hemoglobin in 'floater' cells in the retina." "Hallucinations," 136.

18. Broughton, "Film as a Way of Seeing," 20.

19. Rhoda Kellogg, *Analyzing Children's Art* (Palo Alto: National Press Books, 1969), 65. See especially 64-93. See also Rhoda Kellogg, *The Psychology of Children's Art* (CRM-Random House, n.d.), 53-61.

20. Ronald A. Finke, "Mental Imagery and the Visual System," *Scientific American* 254, no. 3 (1986): 88-95.

21. Quoted in Larry Sturhahn, "The Art of Jordan Belson," *Filmmakers Newsletter* 8, no. 7 (1978): 24.

22. Quoted in Youngblood, *Expanded Cinema* , 159.

23. Quoted in Sturhahn, "Art of Jordan Belson," 23.

24. Jordan Belson, interview with the author, 1 December 1983. Unless otherwise indicated, quotations, paraphrases, and personal views ascribed to Belson are from this interview.

25. Quoted in Sturhahn, "Art of Jordan Belson," 24.

26. Ibid., 23.

27. Quoted in Youngblood, *Expanded Cinema* , 160.

28. Ibid., 160, 162.

29. Ibid., 160.

30. Ibid., 173.

31. Program notes for the "World Premier" of *Meditation* , Pacific Film Archive, Berkeley, California.

32. Quoted in a note on the films distributed by Pyramid Films, Pacific Film Archive, Berkeley, California.

33. Although I treat *Infinity* as a film, I believe it is available only on videotape with *Music of the Spheres* . Originally distributed by Iasos Inter-Dimensional Music-Video, Sausalito, California, but no longer available.

34. William Moritz, "James Whitney Retrospective," catalog of the Canadian International Animation Festival (13-18 August 1984): 10. I am particularly indebted to Moritz and to Mark Whitney for assisting my research on James Whitney.

35. Quoted in Takashi Teramaye, "Towards Being Choicelessly Aware: Conversations with James Whitney," unpublished interview, 1974, 6-7. Unless otherwise indicated, quotations from Whitney are from this extremely useful source, a copy of which is in the archives of La Cinémathèque Québécoise, Montréal.

36. Quoted in Youngblood, *Expanded Cinema* , 223.

37. Heinrich Zimmer, *Myths and Symbols in Indian Art and Civilization* (New York: Pantheon, 1946), 141.

38. This event followed the very successful "Vortex Concerts" at San Francisco's Morrison Planetarium, for which Belson was one of the organizers. The film is named for Pierre Henry's piece of electronic music, "Haut Voltage," which accompanied its screening at the San Francisco Art Institute. break

39. Moritz, "James Whitney Retrospective," 13.

40. Bela Julesz, *Foundations of Cyclopean Vision* (Chicago: University of Chicago Press, 1971); see also Bela Julesz, "Experiments in the Visual Perception of Texture," *Scientific American* 232, no. 4 (1975): 34-43.

41. Paul Sharits, "Notes on Films, 1966-1968," *Film Culture* 47 (1969): 13, 14. Unless otherwise indicated, quotations from Sharits are from this source, 13-16.

42. R. L. Gregory, *Eye and Brain: The Psychology of Seeing* , 2d ed. (New York: McGraw-Hill, World University Library, 1973), 110.

43. Mekas, "Movie Journals," 11.

44. Edward S. Small and Joseph Anderson. "What's in a Flicker Film?" *Communication Monographs* 43, no. 1 (1976): 31.

45. Fred Camper, "Paul Sharits," *Soho News* , 22 April 1976.

46. Robert E. Ornstein, *The Psychology of Consciousness* (New York: Viking, 1972), 126. Ornstein's chapter on "Meditation Exercises" (103-41) makes many points pertinent to the work of Sharits, Whitney, and Belson.

47. Small and Anderson, "What's in a Flicker Film?" 32.

Chapter 7— Balancing Eye and Mind: Michael Snow

1. Michael Snow, "A Statement on *Wavelength* for the Experimental Film Festival of Knokke-le-Zoute," *Film Culture* 46 (1967): 1.

2. Although Snow had done commercial film animation and made one short animation film of his own, *A to Z* , in the mid-1950s, his work as an avant-garde filmmaker properly begins with *New York Eye and Ear Control* in 1964.

3. Brydon Smith, ed., *Michael Snow/Canada* (Ottawa: National Gallery of Canada, 1970), 19.

4. Pierre Théberge, "Conversation with Michael Snow," *Michael Snow* , exhibition catalog (Kunstmuseum Luzern, 1979), 17.

5. "Michael Snow and Bruce Elder in Conversation," *Cinétracts* 17 (1982): 14.

6. Interview with the author, 14 March 1975.

7. Bruce Elder, "All Things in Their Time: On Michael Snow's « ," *Cinétracts* 9 (1980): 65.

8. "Michael Snow and Bruce Elder in Conversation," 17-18.

9. Snow's own awareness of these critical limitations is suggested in his remark, "[I] feel there's been less free seeing or less open seeing amongst cognoscenti of film in the last few years." See Jonathan Rosenbaum, *Film: The Front Line--1983* (Denver: Arden Press, 1983), 183.

10. P. Adams Sitney, *Visionary Film: The American Avant-Garde, 1943-1978* , 2d ed. (New York: Oxford University Press, 1979), 370, 374.

11. David E. James, *Allegories of Cinema: American Film in the Sixties* (Princeton: Princeton University Press, 1989), 240.

12. Annette Michelson, "Toward Snow," *Artforum* 9 (June 1971): 32.

13. Jonas Mekas and P. Adams Sitney, "Conversation with Michael Snow," *Film Culture* 46 (1967): 3.

14. Michael Snow, "Michael Snow on *La Région Centrale,"* *Film Culture* 52 (1971): 61. break

15. Michael Snow, "Letter from Michael Snow," *Film Culture* 46 (1967): 4.

16. Regina Cornwell, *Snow Seen* (Toronto: PMA Books, 1980), 73.

17. Mekas and Sitney, "Conversation with Michael Snow," 3.

18. A defect in almost all zoom lenses (including, presumably, the Angénieux lens Snow borrowed from Ken Jacobs) causes the image of an object in the center of the frame to gradually slip off center during a zoom-in. This so-called side-drift, however, could be corrected in Snow's case, because the film was shot over several days and the camera removed after each day's shooting. For the next filming session it was set up anew, which permitted Snow to realign the position of the photograph so that it remained in the center of the frame.

19. Albie Thoms, *Polemics for a New Cinema* (Sydney: Wild & Woolley, 1978), 8.

20. Snow's own use of the dolly shot in *Breakfast* (*Table Top Dolly*) (1976) and *Presents* (1981) vividly--and comically-- emphasizes the physical effects of the camera's forward movement, in contrast to the purely optical effects of the zoom in *Wavelength* . In *Breakfast* , the camera (behind an invisible plexiglass shield) dollies toward an untidy still life of breakfast items and slowly pushes the objects along the table until they tip over, tumble off, or are smashed against the wall at the far end of the table. In *Presents* , more violent dollies (again with the camera behind a plexiglass shield) demolish a room full of furniture. In *Wavelength* objects in space remain untouched; it is space itself that is flattened by the optics of the zoom lens; in *Breakfast* and *Presents* , objects are flattened, but perception of the space they occupy remains unchanged by the physical movement of the camera.

21. "Ten Questions to Michael Snow," *Structural Film Anthology* , ed. Peter Gidal (London: British Film Institute, 1976), 37.

22. Ibid.

23. Snow, "A Statement on *Wavelength* ," 1.
24. Théberge, "Conversation with Michael Snow," 19.
25. Mekas and Sitney, "Conversation with Michael Snow," 3.
26. Snow, "Letter from Michael Snow," 4.
27. Actually, an occasional pan and tilt is cut short, producing unexpected skips in the metronomic rhythm of the camera's movements.
28. Snow, "Letter from Michael Snow," 4.
29. Snow, "Michael Snow on *La Région Centrale* ," 61.
30. Ibid., 60. Unless otherwise indicated all subsequent quotations from Snow on *La Région Centrale* are from this source, 58-63, passim.
31. Cornwell, *Snow Seen* , 122.
32. Interview with the author, 14 March 1975.
33. Michael Snow, "The Camera and the Spectator: Michael Snow in Discussion with John du Cane," *Studio International* 186, no. 960 (1973): 179.
34. John W. Locke, "Michael Snow's *La Région Centrale,"* Artforum* 12 (December 1973): 69.
35. R. L. Gregory, *Eye and Brain: The Psychology of Seeing* , 2d ed. (New York: McGraw-Hill, World University Library, 1973), 107.
36. Snow, "The Camera and the Spectator," 179.
37. Interview with the author, 14 March 1975. break

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