Je me voyais me voir.
—Paul Valéry

Loud Visual Noises

In *A Vision of the Last Judgement*, William Blake confesses: "I question not my Corporeal and Vegetative Eye any more than I would Question a Window concerning a Sight. I look thro' it and not with it."[1] As in the old saw that the eyes are windows on the soul, the window has long been figured in this way as the very model of a transparent, unimpeding conduit. A careful consideration of the origins of Blake's metaphor, however, also suggests a counter tradition that recognizes the interference of even the most pelucid material medium. In Leon Battista Alberti's *De Pictura*, for the most famous instance, the space of the panel painting is figured as a 'window on the world'; but as Joseph Masheck has noted in an erudite textual analysis, the familiarity of the simile should not let us forget that Alberti's reference is to an open (*aperta*), rather than a paned, window. Moreover, as Fernand Braudel reminds us, "fifteenth-century window glass was not very translucent and was anyway uncommon.... What glazed windows there were would hardly have revealed an undistorted, transparent view."[2] Regardless of the view through Alberti's window, he would have had its orthogonals corrected by the *lucinda*, a "how-to-do-it apparatus of a thin 'veil' (*velum*) of semi-transparent cloth...for translating, as with Dürer's famous gridded frame in the next century, three dimensions into two."[3] In similarly optical terms Louis Marin describes pictorial representation as the dialectic between the veil and the window. Given:

> 1/ Le tableau come surface-support n'existe pas: le regard humain n'est filtré par nulle grille ou tamis interprétatif pour se saisir du monde naturel.

> 2/ Pour pouvoir représenter le monde naturel, le tableau comme surface-support existe: sur et par lui s'opère l'exact dédoublement de la réalité. L'œil humain ne reçoit que le double du monde.

> D'où la nécessaire position et la nécessaire neutralisation de la <<toile>> matérielle et de la surface <<réelle>> dans l'assomption technique, théorique, idéologique de sa transparence: c'est l'invisibilité de la surface-support qui est la condition de possibilité de la visibilité du monde représenté. La diaphanéité est la définition technique-théorique de l'écran plastique de la représentation.

[1. The painting as material medium does not exist: human vision is not filtered by any grid or interpretive screen in order to comprehend the natural world.

2. In order to be able to represent the natural world, the painting as material medium exists: the accurate partitioning of reality comes about on and by that material medium. The human eye takes in only the double of the world.

From these propositions it follows that the material *canvas* and the *real* surface must be posited and neutralized in the technical, theoretical, and ideological assumption of its transparency: the invisibility of the material medium is the very condition of possibility for the visibility of the represented world. Transparence is the technical/theoretical definition of the opaque screen of representation.][4]

That "grid or interpretive screen" of representation returns in the anti-retinal, but still devotedly optical art, of Marcel Duchamp. One might, for instance, read the craze of cracks kept as design elements on the surface of the *Large Glass* in this light, and the "opaque screen" of the grid is an even more central subject of his witty *Fresh Widow*, which translates the pain of a war-time French widow into the glass panes of a miniature French window. In Duchamp's sculpture those panes are veiled in a mourning black of leather, which would, presumably, block any morning light. Literalizing Alberti's metaphors, Duchamp puts punning pressure on the single silent *l* (with its ghost of the homophonic "elle," the putative widow) that differentiates the Latin of Alberti's *velum* [veil] from *vellum* [leather]. The word-play of the English title further triangulates Duchamp's sculpture between the English word "veils" and the paregogic French word *œils* [eyes], and with those veiled eyes, *Fresh Widow* offers an alternative model for the eye as window: the eye in its carnality, and understood not as a clear windowpane but as what Guy Davenport has called a "flesh window," or, to return to Blake, a "little curtain of flesh."[5]

To "see with not through the eye," as Blake in fact put it, would be to insist on the opacity not only of the window but of the eye itself. Such an insistence is central to the later films of Stan Brakhage, who has worked to occlude the illusion of a transparent vision, and to recognize instead the fleshy materiality of sight.[6] Against the dream of a "transparent Eyeball" (to borrow Emerson's famous phrase from the first chapter of *Nature*), and in contrast to the habitual and mechanical registration of external images, Brakhage's later films manifest that even the gross and vegetative "Eye sees more than the Heart knows."[7] Understanding that the "eye is not a passive mechanism for intercepting the image of objects," Brakhage's films lead their viewers to differentiate, like Ludwig Wittgenstein, between the alternate

demands made by the rigid idealism of the pellucid "mental" or "geometric eye" and the inescapable carnality of the corporeal "physical eye."[8] Attempting to " untutor" that geometric eye, Brakhage posits a vision free of the social disciplining that conditions us to ignore certain material and retinal information and to regard the eyeball as some kind of transparent window on the world; his often quoted opening to *Metaphors on Vision* formulates that defamiliarizing position in these terms:

> 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.

In following Brakhage's "adventure of perception" in this essay, I do not want to suggest that we mistake his reconfigured or expanded conceptualization of vision for something closer to 'true' sight or as the wholesale replacement of one model with another. Rather than imagine the return to a prelapsarian and pre-linguistic visual utopia, I want to understand the project of optic untutoring as a reconfiguration of the codes of visuality and an opening of the visual field to multiple, competing and contradictory "scopic regimes."[9]

In reconfiguring those codes, Brakhage has explored damaged vision and ophthalmological aberrations, such as the 1996 film *Through Wounded Eyes* (a collaboration with Joel Haertling), which takes its inspiration from a detached retina. He has also insisted that even the healthiest vision is less clearly transparent than we typically imagine, and he exploits the characteristics of his medium to produce filmic equivalents of the optical phenomena he refers to as "closed-eye vision."[10] Rapidly intercut clear and colored leader, for instance, creates flashes and flares and dramatizes the visual renewal of the blink. The micro-montage of sequences of only a very few consecutive frames in length, for another example, replicate those eidetic images which flash suddenly and briefly before the unwilling mind in a hypnagogic state, just as the inclusion of solarized images, superimpositions, and the printing of black and white negatives from color reverse suggest figure-ground reversals and make manifest the normally unrecognized optical phenomenon at the heart of motion pictures: the persistence of vision in afterimages. Similarly, the rhythmic twists of the anamorphic lens in a film like *Pasht* exaggerate the fatigue of the ciliary muscle and the flattening of vision beyond the *fœvea*. Moreover, the rapid jerky movements of Brakhage's trademark camerawork, in handheld 8mm, can be seen as an equivalent of the eyes' saccadic

movements, or their constant drift and tremor. The treatment of that 8mm stock by bleaching and baking to bring out the emulsion grain (which is already more visible than in 16mm), as well as an embrace of the lower definition created by optical printing, suggest the halation of retinal saturation and the subtle but incessant pixilation of the visual field.[11] Furthermore, the dust, hair, and scratches visible after that printing — like the surface manipulations of paint flicked from a brush onto the surface of the film or scratches etched into the emulsion — all simulate the flinch and drift of entoptic imperfections which cast shadows on the retina as debris floats through the vitreous fluid.

Above all, Brakhage's manipulations of the surface of the film, through looped overpainting, scratching, and the inclusion of foreign particulates in printing, suggest the luminous dance of phosphenes: those scintillating patterns and specks of light which are "subjective images generated within the eye and brain rather than by light from outside."[12] Phosphenes can be elicited by a range of physical and neurological trauma, but they are most familiar from simply applying pressure to closed eyes. By revisioning phosphenes in these ways, the pellicule of organic material comprising the substrate of Brakhage's films mimics the body's own translucent and photosensitive membranes and permits, though its very opacities, an illusion of transparence that allows the opacities of the human membrane —glimpsed in tentative flickers and transient shadows — to be seen. Brakhage's films, in short, momentarily replace the illusion of the eye's transparent clarity with a clear view of its obstructions.[13]

Brakhage is certainly not the first artist to focus attention on such phenomena. Phosphenes, for example, have a surprisingly long history in the modern French literary tradition. They appear at key moments in Arthur Rimbaud's "Les Poètes de Sept Ans," Samuel Beckett's *Watt,* Robert Desnos' *La liberté ou l'amour!,* René Crevel's *Babylon,* René Daumal's extraordinary essay "L'inérrable expérience," and Francis Ponge's "La Crevette," in which they swarm before the eyes of the reader like particles of type. Nor is Brakhage alone in making films that emphasize the frustration of clear vision. The examples from Brakhage's own works are numerous, but one might note, by example, the empty sockets in the autopsied skull in the *Act of Seeing with One's Own Eyes,* or the emulsion scraped from the image of the eyes of the man in *Reflections on Black,* or the images of a cloud-veiled disc of the sun: that object which permits the very vision that cannot directly comprehend it. These figures of the threat and inevitability of blindness take their place in the long tradition of ocular aggression in avant-garde cinema — an aggression always implicitly aimed at the

open eyes of the viewer. Most famous, of course, is the razor scene in Louis Buñel and Salvador Dali's *Un Chien Andalou*, but one might also recall of the equally disturbing operation in Paul Sharit's *T,O,U,C,H,I,N,G*, or the enucleation in the final moments of Pier Paolo Pasolini's *Salò: o le 120 giornate di Sodoma* — all of which foreground sharp metal slicing instruments to suggest an allegory of cinematic splicing and thematize precisely that formal method (montage) by which they achieve their emotional and narrative effects. Similarly, the crashed rocket in Georges Méliès 1902 *Voyage a la lune* projects form the wounded lunar eye like an impacted telescope: an analogue for the cinematic tool of successive close-ups that gives the illusion of thrust and motion to the preceding scenes of the rocket approaching the moon. Such scenes, in fact, date back to the inaugural moments of cinema; the first copyrighted film, William Dickson's 1894 *The Edison Kinetoscopic Record of a Sneeze*, presents a physiological event during which one cannot physically keep the eyes open.

A powerful sneeze, like the one melodramatically recorded for Edison, is also one of the numerous conditions, including loud noises, that can induce phosphenes.[14] Not coincidentally, Brakhage specifically refers to the latter stimuli in his short 1986 film *Loud Visual Noises*, the title of which was suggested by its dedicatee, Paul Lundahl. Related to contemporaneous works like *Fireloop*, *Loud Visual Noises* is a looped and erratically hand-painted film in which the projected paintings create foudroyant displays and sudden, intense bursts of visual pyrotechnics. When the film was included in a video collection of four of Brakhage's hand-painted films from the 1980s, producer Joel Haertling paired its "visual music, a 'music' for the eyes" to which Brakhage aspires, with a soundtrack of darkly ambient post-industrial music montaged from Die Tödliche Doris, Hafler Trio, Nurse With Wound, IHTSO, Haertling himself, and Zoviet France (represented by an excerpt from the composition "Cair Camouflet," which was originally released on an album entitled, significantly, *Look Into Me*).[15] The selections that Haertling chose for inclusion prominently incorporate a range of un-tuned radio signals, the crackle, hiss, and screech of electromagnetic tape, and a wide sampling of audio static. Indeed, beyond the high decibel audio stimulation that can provoke neuoptic flares, "noise," in its information-theory sense, is all to the point for "closed-eye vision." Phosphenes "presumably reflect the neural organization of the visual pathway"; that is, they are part of the noise in the optical channel.[16]

A film like *Loud Visual Noises* reminds us that we can see even in the complete absence of light, because there "is always some residual neural activity reaching the brain,

even when there is no stimulation of the eye by light."[17] *Loud Visual Noises* thus provides the optical equivalent to John Cage's aural revelation that even in the absence of external sounds "there is no such thing as silence." Brakhage, as it happens, studied briefly with Cage, who contributed the soundtrack to Brakhage's short 1955 film *In Between*. A few years earlier, Cage claims to have come to his realization about the absence of silence during a purported visit to a sound-proof laboratory:

> For certain engineering purposes, it is desirable to have as silent a situation as possible. Such a room is called an anechoic chamber, its six walls made of special material, a room without echoes. I entered one at Harvard University several years ago and heard two sounds, one high and one low. When I described them to the engineer in charge, he informed me that the high one was my nervous system in operation, the low one my blood in circulation.[18]

To listen to that high pitched drone and low percussive rhythm in the anechoic chamber, or to view phosphenes, is to experience the operation of the nervous system as it records itself rather than any external stimuli.[19] As Henri Bergson realized, even after eliminating all "the sensations that come . . . from the outer world" one still registers "the organic sensations which come from the surface and from the interior of the body."[20] Or as Brakhage described his films, with an echo of Valéry's *La Jeune Parque*:

> 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.[21]

These correlations are not merely interpretive, but bear on the overall generic status of Brakhage's films. By recording that "act of seeing," Brakhage insists that his works are documentaries, rather than mere expressionistic abstractions or imaginative and fantastic inventions. I want to qualify his assertion further and propose that his films areintimate physical portraits of their viewers; they hold up a mirror — albeit a *speculum obscurum* — of the glaucous, carnal eye looking at its fragile fleshy self.[22]

To Have Apprentice In The Sun

In his extraordinary *Boite verte* of 1934 Marcel Duchamp left the note: "To raise dust on Dust-Glasses for 4 months. 6 months. which you close up afterwards hermetically = transparency — Differences to be worked out."[23] Which may help explain Man Ray's famous 1920 photograph of "dust breeding [*elevage de poussière*]" on the *Grand verre* [Large Glass], but Duchamp's enigmatic note might equally have come from the lab books of Georg Christoph Lichtenberg, a scientist at the University of Göttingen experimenting with electrical generators and "working out the differences" of "dust breeding" as early as 1777. After carelessly leaving the laboratory equipment uncovered one night, he found that the cakes of resin being used as inductors were coated with tiny stars of dust. The rather aptly named Lichtenberg realized that when light had reached the photoconductive resin it charged the surface, attracting dust along the branching lines of its electrostatic fields (*du champ*, as it were). Such stochastic electron patterns are still known to scientists as "Lichtenberg figures," but his discoveries had far-reaching industrial and commercial consequences as well. A century and a half later, just as Duchamp was breeding his dust and working out the mechanized reproductive technologies of the bride and the bachelors, with their glass plates and chemical sprays and heat exchanges — a project he sums up by saying "I wanted to get back to a completely *dry* painting" — the young American poet and inventor Chester Carlson was developing Lichtenberg's findings and creating his own version of chemically heated reproductive machines, with glass "beds" and a "dry writing" which he would translate into Greek with a invented word to name his invention "xerography."

In the modern copier, Lichtenberg's patterns of electrostatically charged dust reappear as the dry carbon dust of toner, negatively charged and attracted to patterns of conductivity made by reflecting light off of an image (the document to be copied) and onto a coated drum. The toner is then transferred to a piece of paper or some other support and fused to it with heat. Or at least that's how it's supposed to work. In a 24-hour Kinko's store in Boulder, Colorado — not far from where Brakhage was making *Loud Visual Noises* — Jay Schwartz, a young poet studying at the Naropa Institute's Jack Kerouac School for

Disembodied Poetics, was investigating the potential of the xerox machine to malfunction. Exploiting the fact that color copy toner fuses at a lower temperature than black and white, he found that color copies reinserted into the bypass tray of a black and white copier had their surfaces altered not because of any image copied but because the higher temperatures of the black and white machine would melt the color toner into messy runs and leave residues which then transferred to any subsequent sheets sent through the same feed path. Similarly, a Federal Express envelope could be cut into 8.5 x 11 inch pieces and sent through the bypass tray to melt and have the images copied on it fracture over the facture of its crust of blisters and wrinkles. As Schwartz Iconically remarks in a letter describing his experiments and encouraging further investigation:

> The copier might say there is a paper jam. In fact, the Fed Ex material has melted in the fuser. If this happens, open the copier and extract whatever you can from the fuser (near the end of the copier where the paper comes out) and close the machine. Don't tell the employees. They'll be angry.[24]

The visual results of such procedures cannot be predicted or controlled, and these works offer one version of what it would mean to realize Duchamp's proposal to "make a painting of happy or unhappy chance (luck or unluck)."[25] Nonetheless, in a confirmation of Marshal McLuhan's hypothesis that superceded technologies are ripe for artistic appropriation, the resultant "displacements and deformations" are striking, and often surprisingly beautiful.[26] The pages emerge caked with partially fused color toner baked in a thick impasto that cracks as it cools and dries and dislodges in flakes. Passed back through the machine, the sheets also return with adhesive, decalcomanic prints and the residue of burns, or with smears and tears that pattern and disfigure the original image. The streaks and smudges of ink in particular recall the expressive abstractions of mid-century gestural painting. Indeed, several of the found images seem to be drawn from the illustrations to an art history text, and their vandalized results — like the defacement of tourist snapshots and amateur photo portraits — appear like nothing so much as indifferently executed versions of Asger Jorn's détourned paintings: the mediocre realist paintings he picked up second-hand and overlaid with his signature drips and runs and splatters. Moreover, Schwartz' aggressive modifications of readymade images, distorted and stretched with elongated smears from their subjection to heat-transfers and the rollers' flattening, also evoke Duchamp's proposal for making a "reciprocal readymade" by using "a Rembrandt as an ironing-board."[27] "It's rather

hard on the Rembrandt," as one of Duchamp's interviewers noted, to which he replied: "It is, but we had to be iconoclastic back then," signaling not just the typically outrageous dadaist gesture of outrage but also the image breaking — *ikono klastes* — of his anti-retinal program. "Perhaps," as Duchamp wrote to himself while working on the *Grand verre*, "look for a way to obtain superimposed prints"; accordingly, ghostly geometric forms float in shadow over some Schwartz' pages in a complex layering, while other pages are cancelled with series of thickly inked black boxes punctuating the xeroxed polaroids, computer printouts, time cards, commercial charts, and pages from industrial manuals that Schwartz had gathered from the shop's recycling bins: mis-aligned, mis-fed, or mis-registered sheets, unwanted duplicates, pages that had been rejected for no apparent reason, and pages that had been copied in the first place for reasons one couldn't imagine.[28]

For all of their ruined beauty, Schwartz' xerox works have less to do with their final look than with the process of their modification. Indeed, like Anthony McCall's *Line Describing a Cone* or Ernie Gehr's *History*, they are photographic works that investigate the non-imaging properties of the photographic apparatus. By using "the copier only for its heat, pressure, and chemical properties, rather than its ability to create new versions of the 'original'," Schwartz's investigations measure a machinic climatology and record the humidity, temperature, pressure and electrical storms of the machine's interior atmospherics.[29] Similarly, with their streaking smears and tears and shadows, they map the feed path and the interior architecture of the machinic corpus: its internal organs and skeletal system and endocrinology. Multiple exposures, for instance, track the relative time of the source page's movement though the feed path in relation to the timing sequence of the illuminating scan, registering the systolic reflexes of the machine and creating a "painting of frequency."[30] Similarly, the geometric blocks that ghost over the pages record machine parts usually hidden from view, or in fact inaccessible to view unless the copier is dismantled; such structures and spaces are of no consequence when the paper is on the glass, above the focused light of the copy cycle, but when the toner is charged from below, as the paper passes through the unshielded, interior areas of the machine they are imaged in a shadow painting as their forms are unintentionally illuminated by the flash of copy light from somewhere above. They are "the negative apparition" on pages where "the picture is the apparition of an appearance" — an attempt to "determine the luminous effects (lights and shadows) of an interior source" and to "make a picture of *shadows cast.*"[31]

Once again, the implications of these formal effects are generic; Schwartz' works, in short, are portraits. But unlike Brakhage's films they are *self*-portraits: reflections of the photocopier looking at itself. To this extent, they have less in common with most 'photocopier art' than with a musical composition like Steve Reich's *Pendulum Music*, in which microphones are hung over loudspeaker with an amplifier arranged so that feedback is generated only when the microphone and loudspeaker are in alignment; the microphones are then set swinging along their parabolic pendular paths, honking and whooping briefly each time they pass the speaker with a rhythmic logic that follows from their harmonic motion and ends in an inevitable augmented drone.[32] Similarly, Matmos' *Always Three Words* sets a four-channel tape recorder running with no input and then passes two walkie-talkies over the recorder, both handsets in transmit mode but again without any input, thus producing an audible interference which can be manipulated with gestural sweeps.[33] As with Cage's bodily music in the anechoic chamber, or Schwartz' xeroxes, these compositions are examples of a system recording itself recording. Moreover, like Brakhage's techniques of presenting "closed eye vision," or Schwartz' exploration of the inutile capacity of the machine to record the non-photoreproductive aspects of its functioning and structure, they are examples of recoding the presumed utility of machines by redirecting and emphasizing characteristics of media that are normally ignored, avoided, or considered as incidental errors.

By obviating the uniform reproducability that is the dream of the xerox machine in favor of unreproducible singularities, unique dispositions of unstable materials, and a host of exceptions, accidents, and errors, Schwartz' work is decidedly 'pataphysical. In Alfred Jarry's formulation, 'pataphysics is "the science of the particular," which "will examine the laws governing exceptions" to form a "science of imaginary solutions."[34] One of the more serious versions of 'pataphysical thought can be found in Ludwig Wittgenstein's *Philosophical Investigations.* In contrast to the rigid, single-minded totalizing of the earlier *Tractatus*, the *Investiations* repeatedly explores multiplicities, or simply "the fact that there are other processes, besides the one we originally thought of."[35] With reference to mathematics, for instance, the "point is, we can think of more than *one* application of an algebraic formula."[36] Ridding himself of the illusion of a single logical necessity for decoding a formula — what he calls "the hardness of the logical must" which seems to attend a mathematic computation — then leads Wittgenstein, interesting, to the figure of the machine.[37] He argues that as with mathematical forumulæ, the utility associated with machines induces us to forget that they might equally perform other functions and be used in different ways. Moreover, he argues

that even the conventional, utile operation of the machine contains the latent potential for other functions and activities. In a passage that anticipates the work of Jay Schwartz with an uncanny accuracy, he writes: "we talk about a machine as if its parts could move only in one way, as if they could not do anything else, while we forget the possibility of their bending, breaking off, melting, and so on."[38]

Such malfunctions, paradoxically enough, get at the essence of the machine. Expanding on T. E. Hulme's recognition that what is usually though of as "the grit in the machine" Gilles Deleuze and Félix Guattari theorized that "breaking down is part of the very functioning of desiring-machines," a concept that Guattari later abstracted to the claim that malfunction is in fact "the fundamental element of the machine":

> the maintenance of a machine is never fail-safe for the presumed duration of its life. Its functional identity is never guaranteed. Wear and tear, precariousness, breakdowns, and entropy, as well as normal functioning, require a certain renovation of a machine's material, energetic, and infomational components, the last of which is susceptible to disappearing in 'noise'.... In fact, wear and tear, accident, death, and the resurrection of a machine in a new 'example' or model are part of its destiny and can be foregrounded as the essence of certain aesthetic machines (Cesar's 'compressions', Metamechanics, happening machines, Jean Tinguely's machines of delirium).[39]

One could update Guattari's example with the mention of Mark Pauline and the Survival Research Laboratory, as well as more recent projects from Eric Paulos and the Experimental Interaction Unit at Berkeley, Bill Vorn and others at the Laboratory for Interactive Technology in Quebec; the techno-parasites of Erik Hobijn and Andreas Broeckmann, the Center for Metahuman Exploration, and all of those techno-anarchist 'pataphysicians interested in disrupting the smooth, unthinking interaction between humans and machines. Indeed, as Guattari continues, "machines speak to machines before speaking to humans, and the ontological domains that they reveal and secrete are, at each occurrence, singular and precarious." The compositions by Reich and Matmos let us overhear what machines say to one another as they speak, and Schwartz' work gives us a corresponding example of what non-human vision might look like. His works of machine vision propose concrete examples of what the xerox machine might see if it were freed from the service of looking for us, and instead looked at itself.

We are surrounded with examples of vision machines, from contact lenses to closed-circuit cameras and digital scanners, from the medical technologies of X-ray and MRIs and CAT Scans, to the military technologies of infrared binoculars, radar screens, and the sorts of 'intelligent' missile systems displayed in the first Gulf War. All of those machines, however, are prostheses of human vision; they extend or modify information that is inflected in a circuit back to the human vision with which they are interfaced by way of the screen, the lens, the printout, or the photocopy. In Schwartz' work, on the other hand, where the conventional imaging properties of the machine are incidental, we can begin to glimpse the sort of mutant evolutionary transfer of characteristics from the human to the machinic phylum that Deleuze, Manuel de Landa, and Paul Virilo and others have recently theorized: "a vision machine" that will "automate perception" and establish a "sightless vision," to use Virilio's terms.[40] Such a machine vision, he argues, will "remove us from the realm of direct or indirect observation of synthetic images created *by the machine for the machine*," so that "blindness is thus very much at the heart of the coming 'vision machine.' The production of sightless vision is itself merely the reproduction of an intense blindness."[41] That sightless vision is registered in the blinding flash of the copier's light, at which one cannot directly look, and which gives us, finally, the photograph Duchamp proposed but never achieved: "avoir l'apprenti dans le soleil [to have apprentice in the sun]."[42]

The "sightless vision" of Virilio's inhuman vision machine throws the humanism of Brakhage's machine vision into sharp relief. Suspecting that film itself "*is*, as eyes have it, *at one* with the synapting Human nervous System," Brakhage, as we have seen, recognizes that the "background [medial] noise of motion picture systems is very much like that of the eye-brain." [43] Counter to the tradition of rationalizing the eye in the terms of a geometrically perspectival rationalist machine, Brakhage's films envision their technology in terms of the corporeal eye and its own reserves of sightless, scotoscopic, closed-eye, vision. Understood in the light of Schwartz' erring machine model, Brakhage's defamiliarization of our habitual understanding of vision reminds us of the limits of the metaphors at work in those technologies of vision that increasingly occupy and regiment our surveillance culture. Moreover, his defamiliarizing techniques return us to our bodies, and to a sense of their failings and fragility. Perhaps unexpectedly, the very tenuousness of our bodily mechanisms (our soft machines understood in Wittgenstein's sense of a machine that will err unpredictably and break down) will in fact be the ground of its strength in resisting the seamless interface between body and machine. Furthermore, the reconfigured eye, like the

reconfigured sense of the machine, is one step toward dismantling the "myths of necessity, ubiquity, efficiency, of instantaneity" required by the dark age of intelligent machines prophesied by Virilio and De Landa.[44] We should learn to see for ourselves while we still can, to see for the last time — in this last instance before the age of the vision machine — as if it were for the very first time. That is, to see in the full sense of the word, with a fraught vision replete with all its imperfections, distortions, opacities and sightless displays.

The blinding film shall part,/ And… the eyes/ In recognition start.
—Arthur Hugh Clough

NOTES

[1] *Complete Writings*, Ed. Geoffrey Keynes (Oxford: Oxford U. P., 1966), 617.

[2] Quoted in Joseph Masheck, "Alberti's 'Window': Art-Historical Notes on an Antimodernist Misprision," in *Art Journal* 50: 1 (March 1991): 36. Masheck quotes from *Capitalism and Material Life: 1400-1800* (New York: Harper & Row, 1973): 121, 214. *Confer* Braudel's *Civilisation materielle, economie, et capitalisme: xve-xviiie siecle* (Paris: A. Colin, 1979): 257-8; translated as *The Structures of Everyday Life: the Limits of the Possible*, vol. I (NY: Harper & Row, 1979): 296-7. One might put this entire discussion under the sign of the title for Brakhage's 1957 film "Unglassed Windows Cast a Terrible Reflection."

[3] Masheck, "Window," 37.

[4] *Détruire la peinture* (Paris: Éditions Galilée, 1977), 61. Compare Marin's description of pictorial realism with Ron Silliman's description of literary realism, which aspires to have the page and any sense of "the word as such" must disappear before a reader absorbed in 'content' ("Disappearance of the Word, Appearance of the World," in *The New Sentence* [NY: Roof Books, 1987]).
   This double sense of material grid and transparent window come together in the projection "screen," which Charles Bernstein discusses in an argument sympathetic with my own: "The movie screen becomes, through the magic of cinema, a window onto a world behind it" (*Contents Dream: essays 1975-1984* [L.A.: Sun & Moon, 1996]: 93).

[5] Blake, *Writings*, 130. Davenport, "Two Essays on Brakhage and His Songs," *Film Culture* 40 (1966): 10.

[6] Blake, *Writings.*, 433. Without elaborating on Blake's idealist or spiritual argument — a visionary poetics and optics of apocalyptic transcendence that Brakhage counters by literalizing — I want to emphasize the vocabulary, if not the sentiment, of Blake's visionary optics; he derides the "Corporeal and Vegetative Eye" earlier in *A Vision of the Last Judgement* (614), and he repeats the prepositional distinction, explicitly in terms of transparency, in "The Everlasting Gospel": This Life's dim Windows of the Soul/ Distorts the Heavens from Pole to Pole/ And leads you to Believe a Lie/ When you see with, not thro', the Eye" (753). The full couplet from the "Auguries of Innocence" reads: We are led to Believe a Lie./ When we see ~~With~~ not Thro' the Eye" (433).

[7] *Ibid.*, 189.

[8] Bernstein, *Content*, 135; Ludwig Wittgenstein, *Preliminary studies for the 'Philosophical Investigations', Generally Known as the Blue and Brown Books* (Oxford: Blackwell, 1969), 63-4.

[9] Though it may now be more familiar from Martin Jay's appropriation of the term, " scopic regimes" comes originally, of course, from Christian Metz's *The Imaginary Signifier: Psychoanalysis and the Cinema*, trans. Ben Brewster, Alfred Guzzetti, Celia Britton, and Annwyl Williams (Bloomington: Indiana University Press, 1981).
   For more on the dream of undisciplined vision see John Ruskin's *Elements of Drawing* (London: Herbert, 1991), as well as Ernst Gombrich's refutation that "the innocent eye is myth," *Art and Illusion* (Princeton: Princeton University Press, 2000).

[10] In *Light Moving in Time: Studies in the Visual Aesthetics of Avant-Garde Film* (Berkeley: U. C. Press, 1992), an inspiring and superb study of the visual æsthetic of avant-garde film to which I am greatly indebted, William C. Wees provides a more patient and sustained account of Brakhage's attempts to "give sight to the medium" of vision; his book is requisite reading for anyone interested in Brakhage and avant-garde film.

[11] For the swoop of the handheld camera as an equivalent of the saccade see Wees, 85 *et seq*. Brakhage explicitly relates "the grainy shapes of closed-eye vision" to the emulsion grain of film, *Brakhage scrapbook: Collected Writings, 1964-1980*, ed. Robert A. Haller (NY: Documentext, 1982): 51; 48; cf. 115; 120.
   For more on the pioneering use of 8mm, and the "inherently radical" political import of super-8 and the "utopian alternative" it presented to wider gauge strips, see J. Hoberman "The Super-80s," *Film Comment* (May-June 1981): 39-43.

[12] Gerald Oster, "Phosphenes," in *Scientific American* 222: 2 (February 1980): 83. See also Otto Grüsser and Michael Hagner's historical overview in *Documenta Ophthalmologica* 74 (1990) 57-85.

[13] One might extend a reading of Brakhage's interest in the carnal eye to the general bodiliness of vision and the optical implications of the body as a whole, since even the most blunt and gross movement through space changes our relation to sources of light and its reflection. As Bruce Elder summarizes, picking up on a passage from Henri Bergson: "corporeal changes register in perception, altering its form" (see also Bergson, "The Image and Reality," *Matter and Memory*, trans, Nancy Margaret Paul and W. Scott Palmer [London" George Allen, 1950]: 43-4).

      Jonathan Crary has attempted to historicize the shift from the body as "a neutral or invisible term in vision" to "the thickness from which knowledge of the vision was derived" and an understanding of the "carnal density of the observer" ["Modernizing Vision," Vision and Visuality, ed Hal Foster (Seattle: Bay Press, 1988): 43]. See his expansion of this summary in *Techniques of the Observer: On Vision and Modernity in the Nineteenth Century* (Cambridge. : MIT Press, 1990), as well as the related arguments presented in *Suspensions of Perception: Attention, Spectacle, and Modern Culture* (Cambridge. : MIT Press, 1999).

[14] Albert Rose, *Vision: Human and Electronic* (New York: Plenum, 1973), 46.

[15] "Inspirations," *Essential Brakhage: Selected Writings on Filmmaking* (NY: Documentext, 2001): 211.

[16] Oster, "Phosphenes," 83.

[17] Wees, 3; R. L. Gregory, *Eye and Brain: The Psychology of Seeing*, 2nd Edition (NY: McGraw-Hill, 1973), 81.

[18] "Experimental Music," in *Silence: Lectures and Writing* (Middletown: Wesleyan U.P., 1961): 8. Cage frequently repeats the anecdote elsewhere.

[19] *Cf.* Brakhage, *Scrapbook*, 134.

[20] Henri Bergson, *Creative Evolution*, trans. Arthur Mitchell (NY: Henry Holt & Co., 1911): 278. I am grateful to Brandon Joseph for drawing my attention to this passage. Joseph makes the immensely important discovery that Cage was paraphrasing a passage from Henri Bergson, whom Cage had been reading. ["White on White," in *Critical Inquiry* 27: 1 (Autumn 2000): 90-121]

[21] From lecture at Hampshire college, summer 1972 (audio tape #23, Media Study Inc., Buffalo NY.); quoted in Wees, 93. Brakhage makes similar comments elsewhere (*Scrapbook* 48), and frequently repeats his Helmholzian rhetoric, speaking, for instance, of neural activity as a "short circuit," *Scrapbook* 134.

      In *La Jeune Parque*, the persona exclaims: "Je me voyais me voir [I saw myself seeing myself]." Other lines, such as "Quel éclat sur mes cils aveuglément dorée,/ Ô paupières qu'opprime une nuit de trésor" and "Mon œil noir est le seuil d'infernales demeures!" are equally suggestive and the whole of Valéry's poem, with its rhetoric of internal visions, haptic sight, and palpable luminosity, might be productively read in the light of Brakhage's films.

[22] For Brakhage on the "documentary" nature of his film see *Scrapbook*, 188; and *Dialogue on Film* 2: 2 (1973): 10. Charles Bersntein makes a similar point in terms of the conventions of realism: "as for realism, from the point of view of reproducing the material conditions of seeing—including diffusion, distraction, fragmentation, blurring — works by Snow or Brakhage, and the like, are probably more deserving of the term" [*Content's Dream*, 103).

[23] Marcel Duchamp, *Salt Seller / Marchand du Sel: The Writings of Marcel Duchamp*, Ed, Michel Sanouillet and Elmer PetersonNY: Oxford U. P., 1973): 53.

[24] Undated correspondence (c. 1998), author's collection.

[25] Duchamp, *Salt Seller*, 23.

[26] *Ibid.*, 35

[27] *Ibid.*, 32.

[28] *Ibid.*, 38.

[29] Schwartz, undated correspondence (c. 1998), author's collection

[30] Duchamp, *Salt Seller*, 25.

[31] *Ibid.*, 71.

[32] Written in 1968, the piece was premiered in Boulder by Reich and William Wiley and given a famous performance at the Whitney Museum in 1969, with Reich, Bruce Neuman, Michael Snow, Richard Sierra, and James Tenney performing. Two recent recordings are available from the Ensemble Avantgarde [Wergo 6630-2] and Sonic Youth *Goodbye 20th Century* [SYR4].

[33] *Quasi-Objects* [Vague Terrain 001] 1998.

[34] *The Exploits and Opinions of Dr. Faustroll, 'Pataphysician*, Book II, translated by Simon Watson Taylor (Cambridge: Exact Change, 1996). For more on 'pataphysics see Christian Bök's indispensable *'Pataphysics: The Poetics of an Imaginary Science* (Evanston: Northwestern U. P., 2002).

[35] *Philosophische Untersuchungen /Philosophical Investigations* , trans. G.E.M. Anscombe, 2nd ed. (Oxford: Blackwell, 1997): section 140.

[36] *Ibid.*, 146.

[37] *Ibid.*, 437.

[38] *Ibid.*, 193

[39] Gilles Deleuze and Félix Guattari, *Anti-Oedipus: Capitalism and Schizophrenia* , translated by Robert Hurley et. al. (Minneapolis: U. of Minnesota Press, 1983): 32 *et passim*; Félix Guattari, "Machinic Heterogenesis," *Rethinking Technologies*, ed. Verena Andermatt Conley (Minneapolis: U of Minnesota P, 1993): 22. See also "On Machines," trans. Vivian Constantinopoulos, *Journal of Philosophy and the Visual Arts* 6 (1995): 8-12.

[40] Paul Virilio, *The Vision Machine* (Bloomington: Indiana University Press, 1994) : 59 *et sequitur*. For similar theoretical work by someone who began his career as an experimental film maker, see Manuel De Landa, *War in the Age of Intelligent Machines* (NY: Swerve Editions, 1991).

[41] Virilio, *Vision Machine*, 62; 72-73.

[42] Duchamp, *Salt Seller*, 24.

[43] First quote from Brakhage, "Manifesto," in *Essential Brakhage*, 205; second quote from   Leny Lipton, "A Filmmaker's Column," *Take One* 4: 1 (1974), 46.
Annette Michelson finds Brakhage's conception of the camera as an extension of the eye a "highly questionable" equation that takes a useful metaphor too literally and "violates the camera's function" ("Film and the Radical Aspiration," *Film Culture*, 1966: 41).

[44] Jonathan Crary, "Eclipse of the Spectacle," *Art After Modernism: Rethinking Representation* , Ed. Brian Wallis (NY: New Museum of Contemporary Art, 1989): 294.