Malcolm Le Grice.
Film strip.
The cinema? Three cheers for darkened rooms.
—André Breton, Manifesto of Surrealism (1924)

I.
We are witnessing the reconfiguration of twentieth-century art history as a dark passage illuminated by intermittent projections. Most notably in “Le mouvement des images” (2006), a survey exhibition at the Centre Pompidou, paintings, sculptures, and other material objets d’art were relegated to side galleries grouped under cinematic rubrics. The spine of the exhibition was a darkened corridor with looped digital projections of films that traced a cinematic history of twentieth-century art: Richard Serra and Paul Sharits, Joseph Cornell and Marcel Broodthaers, László Moholy-Nagy and Man Ray. In each instance, the investment in cinema exceeded the production of films and was augmented by a range of works in adjacent galleries. Nowhere did the division between immaterial projection and material object congeal more strikingly than around a single wall on which was projected Man Ray’s Retour à la raison (1923) and behind which several meters of the film’s rayographically inscribed 35 mm filmstrips were exhibited as such for the first time: laid out flat for inspection like a museological artifact or specimen rather than upright like a painting, as in the case of the neatly framed filmstrips of Peter Kubelka’s Arnulf Rainer (1958–1960), also on view. The most attentive viewers repeatedly skirted around the dividing wall to piece together the different components of the work. The filmstrips reveal white forms on a dark ground: tacks and pins, a coiled spring, rope, crystals, glass plates,
photographs and other quotidian objects whose x-ray–like traces span several meters. For these strips, Man Ray relinquished his camera and—in the obscurity of his makeshift darkroom—placed objects directly on the celluloid and exposed it to light. He later recounted, “I threw pins and thumbtacks at random; then turned on the white light for a second or two, as I had done for my still Rayographs.”

From Jean Cocteau’s 1922 open letter to Man Ray in praise of the rayographs through Rosalind Krauss’s 1977 theorization of the index, cameraless photographs—also called rayographs or photograms—have epitomized the potential immediacy of the photographic process. In the conclusion to her survey of nineteenth-century natural drawings made without a camera, Carol Armstrong asks why one should even bother with photographic self-reflexivity and answers, “Because it allows us to look at the material mode of the photograph rather than through it; because it is a way of making that materiality matter.” Yet this rayographic immediacy and materiality seem to dissolve as soon as the filmstrips are projected: meter-long strips appear on screen for barely three seconds each when projected at a rate of sixteen frames per second, the rough standard at the time. What is more, Man Ray ignored the frame divisions essential to the traditional cinematic dissection and reconstitution of movement. The result is illegible content or erratic motion: “a snowstorm, with the flakes flying in all directions instead of falling” and “huge white pins crisscrossing and revolving in an epileptic dance.” The white shadow of a serrated knife vanishes when divided into frames and projected on screen, but a spring—cameralessly inscribed without the slightest movement of object, filmstrip, or light source—is magically set into motion when segmented and projected. The two minute and forty-eight second movie thus comprises a flurry of images, abstract and representational, that never cohere into anything like a narrative: black-and-white silhouettes, points of light revolving in every direction, artworks in motion, visual noise and fleeting blurs, a twirling egg crate, a nude torso undulating in raking light. One can only smile when, at the start of each loop, Man Ray’s title appears: The Return to Reason.

An endlessly looping digital projection and its once-upon-a-time material substrate: the installation wall at the Pompidou seemed to divide a material past from an immaterial present—as well as the medium-specific filmic from the postmedium digital, and perhaps even an embodied viewer from a disembodied one. But if the rayographic strips could not help but appear like vestiges of a predigital era and the bearers of all the originary traits we fear lost to our present, Michel Foucault reminds us that “What is found at the historical beginning of
things is not the inviolable identity of their origin; it is the dissension of other things. It is disparity.” A nonlinear genealogy of the rayographic strips of Retour à la raison—from their recent museum debut to their 1920s oblivion via their late-1960s and early-1970s recuperation in the histories and practices of avant-garde film—will demonstrate not the stability of these oppositions but a transvaluation of these values: materiality and its attendant medium-specificity and embodiment. At its 1923 premiere, no one took note of Retour’s cameralessness. The cinematic dispositif or apparatus occluded access to the filmstrips and to the intelligibility of the rayographic inscription. (In the cinema, one cannot skirt the screen to get a peek at the strips.) The moment where the filmstrips were first legible as such—in the histories, theories, and practices of structural and material filmmakers beginning in the late 1960s—coincides with the avant-garde reconfiguration of the cinematic dispositif, in particular at the London Film-Makers’ Co-operative (LFMC, founded 1966). Not only is this moment chronologically equidistant from the reception of Retour within the historical avant-garde and its museological present, but it marks an early, failed attempt to transform the cinema into a museum and the museum into a cinema. This staccato history of Retour and its filmstrips will wind its way slowly from the present to the 1920s—with stresses around 2006, 1966, and 1926—but will jump frequently between these dates to highlight the incongruities and peculiar continuities that abound. My argument is deceptively simple: until 2006, Retour’s rayographic filmstrips were referenced but never exhibited. They existed in a state of latency for over eighty years. At least twice, far-reaching attempts were ventured to make this latency manifest: by Man Ray in the early 1920s and by avant-garde filmmakers in the late 1960s and early 1970s. Unable or unwilling to exhibit the filmstrips as an object, they were forced to reconceptualize the institution of cinema in terms no less radical, even if far less explicit, than the two-part Pompidou installation and its pronounced division of materiality and immateriality. The resultant reconceptualized cinemas frequently bordered on the world of art and now present themselves as historical models for and alternatives to the “cinematized” museum, ones where material-immaterial divisions were much more dynamic than a wall. This genealogy will also trace the outlines of the cinematic dispositif from its post-WWI rise through its 1970s decline and its current museification in the form of the black box; it is, however, neither a history of the black box (though a range of black and gray boxes are in play) nor a chronicle of handmade films (though such is the dominant reading of cameraless films) but a genealogy of Retour à la raison, its rayographic filmstrips and the successive dark chambers in which they unraveled.
II.
The first of these chambers was the Théâtre Michel on the night of July 6, 1923. “Do you remember Dada? If you’ve already forgotten, there are Messieurs Breton, Tzara, Aragon, Ribemont-Dessaignes, Soupault and Eluard. You thought they were dead? Well, fine. Last night they were resurrected.”\(^7\) So begins the account of the Soirée du coeur à barbe published in *Comoedia*, the leading art and theater daily in interwar Paris. The tone is light, even flippant. Dada poetry and drama are discussed only to be dismissed. Films garner no mention. Yet it was at this final dada soirée—carried out amidst the tumultuous fall of Tristan Tzara’s brand of dada and nearly cleared out by the police after several brawls instigated by the Breton gang—that *Retour à la raison* had its sole interwar screening.\(^8\) Jane Heap’s report in the pages of *The Little Review*, while more sympathetic and extensive, pays equally scant attention to the works, except to name them.\(^9\) Only Louis Aragon, in a manuscript unpublished at the time, offered more than a fleeting reference to the films, and he was clearly not amused:

One saw a short film by Man Ray that displayed his mistress, Kiki, then a very beautiful unfolding spiral entitled *The Return to Reason*, which provides the ornamentation of his atelier. The film is equal neither to the painting nor to the photography of Man Ray, who was pressed by Tzara to produce something at all costs for this spectacle. Tzara cares for nothing but names; that the individuals create stupid works means little to him.\(^10\)

No one referenced the film’s material substrate until Man Ray concocted a dramatic and bunk account for his autobiography decades later. In a tale too often repeated, Man Ray writes off the film as a dada provocation and claims that his amateurish splicing led to frequent breakages, plunging the audience in darkness and instigating the famous brawl.\(^11\) The only corroboration that any reaction to *Retour* occurred comes from Louis Tosmas’s review in *Bonsoir*: “An audaciously entitled film, *The Return to Reason*, revived, by virtue of its relative clarity, the indignation of the Surdada sectarians.”\(^12\)

Born of an undead dada and without alliance to nascent surrealism, disowned by its creator, *Retour* belonged nowhere. Articles, reviews, and artist interviews published in the 1920s frequently list “all” of Man Ray’s films only to omit *Retour*.\(^13\) Even the committed surrealist and cineaste Georges Sadoul later claimed to have first learned of *Retour* some twenty years after the fact.\(^14\) As late as Man Ray’s 1966 retrospective at the Los Angeles County Museum of Art, a catalog essay appraising his cinematic oeuvre erroneously claimed that *Retour à la raison* was “unfortunately lost.”\(^15\) Prints survived, but the film was all but lost.
to avant-garde discourse, its rayographic base little more than a curiosity in the annals of cinema, dada, and surrealism.

In the late 1960s, as critics, historians, and practitioners of underground or experimental film began to search for interwar precedents, *Retour* slowly gained a marginal place in alternative film histories. The film was selected in 1970 by Anthology Film Archives as part of their *Essential Cinema* program but was excluded from Parker Tyler’s 1969 filmography, which otherwise “includes virtually all key works stressed by the present writer as indicative, and often important, in the passage from avant-garde to Underground film.” The film was considered foundational only by those filmmakers for whom the material of film and the processes of its production were paramount. Nowhere was this tendency stronger than within the LFMC. Malcolm Le Grice, among the leading practitioners and advocates of material film at the LFMC, made a case for filmic materiality and, with it, Man Ray’s rayographic film:

The earliest example of this awareness is found in Man Ray’s *Retour à la raison* (1922 [sic]) through his incorporation into film of the direct photography “Rayogram” technique. . . . Distancing the representational image in this way draws attention to film substance and process as an element of content.

So powerful were the terms of this recuperation that Deke Dusinberre—among the earliest supporters of the LFMC and the most extensive interpreter of *Retour* to date—labels his recent analysis of the film “1970s-style.” Where surrealist histories have excluded *Retour* and *Emak Bakia* (1926) from their canons in favor of Man Ray’s later films, Le Grice reversed their selection and asserted that “while Man Ray’s first two films, *Retour à la raison* and *Emak Bakia* are both clearly ‘in,’ I have not been alone in the impulse to reject his subsequent films as a retrogression.” The current essay is little concerned with canons or progress. (As Man Ray liked to say, “There is no progress in art, any more than there is progress in making love. There are simply different ways of doing it.”) Thus, even as postwar German filmmaker-theorist Birgit Hein worked to construct a grand, progressive narrative of material film closely aligned with the LFMC, she acknowledged that no continuous tradition could be forged:

With hindsight, we can establish links with artists’ films of the ’20s—and here Man Ray’s *Retour à la Raison* (as a material film) appears especially significant . . . but we cannot draw a straight line from here to the ’60s because developments of this kind did not occur after the mid ’20s.
Instead, _Retour’s_ circuitous route from the darkroom to the darkened museum via the cinema and the film co-ops is a history that does not progress evenly but in fits and starts, doubling back on itself and reversing its position, asserting ruptures where we imagined continuities and continuities where we once asserted radical breaks.

III.

By 1926, V.I. Pudovkin was able to recapitulate nearly a decade of Russian film theory—in particular what Lev Kuleshov had named “creative geography”—in his book _Film Technique and Film Acting_. Fully cognizant of the materiality of mediation, Pudovkin contended that whereas the substance available to the theater director is a “real and actual process that takes place in obedience to the laws of real space and real time . . . the active raw material [of the film director] is no other than those pieces of celluloid.”23 As if in perverse adherence to Pudovkin’s assertion and in strict observance of Clement Greenberg’s modernist dictum on medium-specificity, avant-garde filmmakers from America, England, and across the Continent began to explore the materiality of filmstrips in the 1960s.24 Independent of one another, Owen Land (formerly known as George Landow, _Film in Which There Appear Edge Lettering, Sprocket Holes, Dirt Particles, Etc., 1966_), Malcolm Le Grice (_Little Dog for Roger, 1967_), and Wilhelm Hein and Birgit Hein (_Rohfilm, 1968_) mobilized the celluloid (actually acetate) filmstrip as the basis for the film’s image and structure, a tendency that would soon be designated “structural” or, within the LFMC, “material(ist).”25 Heath Robinson printing and developing equipment, designed and largely built by Le Grice, and the acquisition of professional developing and printing equipment for the LFMC workshops at the end of the 1960s made the otherwise marginal emphasis on materiality into a centerpiece of Co-op production. As David Curtis chronicled in 1975, “The loops and straying images of Malcolm’s _Little Dog_ proved to be the beginning of a whole genre of English film-making.”26 And as Le Grice made clear, material film generally and _Little Dog for Roger_ in particular “should be considered as clarifying the direction begun by Man Ray in _Retour à la Raison_”; namely, “to draw attention to the material nature of the film itself and the images on it as a photochemical reality.”27 Such an approach enabled the exploration of film in a manner similar to the medium-specificity of modernist painting28 or, consistent with an oft-repeated slogan, the treatment of “film as film.”29 Paul Sharits observed in the early 1970s that “there seem to be some general aesthetic interests shared by contemporary arts (one of which is, ‘paradoxically’ _self-definition_—‘painting as the subject of painting,’ etc.).”30 Although film critics frowned
upon the encroachment of Greenbergian art rhetoric into the sphere of experimental cinema, the insistence on medium-specificity allowed these progeny of *Retour* to extend far beyond the camerealess inscription of celluloid and help, in turn, to situate *Retour’s* rayographic strips within the broader experience of cinema.31

References in LFMC writings to the tradition of handmade film—begun by Man Ray and continued in Len Lye’s *Color Box* (1935), Stan Brakhage’s *Mothlight* (1963), and other films—were eventually supplanted by a more direct attack on the institution of cinema: not only works by Man Ray, Landow, and Le Grice, but Nam June Paik’s *Zen for Film* (1962–1964), composed of nothing but clear leader.32 At the same time Le Grice and others turned to Greenbergian art paradigms, they intuitively rejected the “automatically” modernist experience of cinema postulated by Michael Fried in 1967. Fried wrote, “It is the overcoming of theater that modernist sensibility finds most exalting and that it experiences as the hallmark of high art in our time. There is, however, one art that, by its very nature, escapes theater entirely—the movies.”33 The LFMC’s interrogation of “those *pieces of celluloid*” quickly opened on to the “*real space* and *real time*” that Fried, like Pudovkin, attributed to theater and that Le Grice saw as the continuation of a material practice of film: “The direction of my thinking and the tendencies of my films, keep returning me to an affirmation of the projection event as the primary reality. In other words, the real TIME/SPACE event at projection.”34 Le Grice’s direct target was not a modernist sensibility so much as the darkness of the theater, the immobility of the subject, and projection from the rear—precisely the conditions of reception Fried and others highlighted as guaranteeing the absorption of the moviegoer.35

Le Grice announced his attack on cinematic absorption with the first film he screened in the environs of the LFMC, *Castle One* (1966, first screened 1968). The work consisted of found newsreel footage of the military-industrial complex montaged into visual and audio repetitions, occasionally interrupted by shots of a lightbulb. Under the influence of Robert Rauschenberg, Le Grice augmented the depicted lightbulb with a real lightbulb that hung near the screen.36 During the performance of the work, the lightbulb was turned on and off, illuminating the audience and obliterating the projected image. As Le Grice asserted in his program notes, “The awareness of the audience is returned to their actual situation (viewing a film) by reference to the bulb and the perceptual problems which its flashing creates.”37 Insomuch as “electric light is pure information,” as Marshall McLuhan had recently avowed, its intermittent presence here decoupled the photographic images from the luminescent medium that carried them and created a dialectic—powerful and primitive in equal measure—between absorption in the
film and awareness of one’s environment. The action anticipated by several years Roland Barthes’s 1975 strategy of breaking the ideological fascination of the movie theater:

it is by letting myself be twice fascinated by the image and by its surroundings, as if I had two bodies at once: a narcissistic body which is looking, lost in gazing into the nearby mirror, and a perverse body, ready to fetishize not the image, but precisely that which exceeds it: the sound’s grain, the theater, the obscure mass of other bodies, the rays of light, the entrance, the exit.

Where the traditional movie theater insists on what Barthes called a “narcissistic” body absorbed in the image, Le Grice’s Castle One compelled its spectators to take on a second, “perverse” body.

At first, Le Grice envisioned that these actions would best unfold in a gallery rather than a theater. By the end of the 1970s, however, he acknowledged that “Neither the current institution surrounding cinema nor that related to the presentation of the plastic arts has forms which suit such a concept of presentation.” The gallery dissolved the narcissistic body to the same degree that traditional theaters suppressed the perverse one. This shift can be identified best in Anthony McCall’s Long Film for Ambient Light (1975)—“screened” in New York independent of the LFMC but closely related to and received widely in Co-op circles—where the simultaneous assault on the image and illumination of spectatorial space reached its apotheosis: natural light and an electric bulb illuminated a loft for a twenty-four hour period; the windows were covered with white paper; a time scheme and a two-page statement hung on the wall. Rather than the absorption of traditional cinema or even the dominant axis of earlier works like McCall’s Line Describing a Cone (1973), “the entire space was utilized so that there was no particular axis of attention.” Even as scholars have identified a series of metaphors and practices that bind the work to the idea of cinema while dispensing entirely with the materials of film, McCall did not hesitate to put the word film in scare quotes to conclude his statement: “I do not rule out the possibility of continuing to make ‘films.’ However, for the time being I intend to
concentrate less on the physical process of production and more on the presuppo-
sitions behind films as an art activity.”42 The material filmstrip and the processes
of its production gave way to light and duration. As Dusinberre quickly noted,
“The very emphasis on the material nature of the cinema and of cinematic repre-
sentation leads to immateriality.”43 If Castle One attempted to summon advanced
art in the transformation of the cinematic arena, Long Film for Ambient Light
returned the question of cinema to the institutions and spaces of art. The material
legacy of Retour à la raison at the LFMC unfolded between “the lightbulb film,”
as Castle One came to be known, and a “film” composed largely of a lightbulb.

Whereas Castle One and Long Film overturned the traditional cinematic expe-
rience through negation, Le Grice and his former students (who became LFMC
colleagues) confronted those conditions through the extension of production into
the realm of reception: from the treatment of film as material substance to “the
treatment of: the projection situation as material event.”44 No film illustrates this
convergence better than Le Grice’s Little Dog for Roger. The film existed in mul-
tiple versions: sound and silent, single and double projection. But already at its
October 1968 premier, where it was shown as part of Le Grice’s second painting
and film exhibition at the Arts Lab in London, Little Dog was a two-screen, loop
film performance: one image projected at sound speed (24 fps) and the other at
silent speed (16 fps). The performative nature of the screening ensured that the
operation of the projectors was experienced as anything but automatic. In more
definitive versions—the work has recently been standardized as a two-screen
digital installation—Le Grice used a single sound track and edited the 16 fps version
down so that the reels start and end at the same time and are repeatedly, if only
fleetingly, aligned during the course of the film. Woven tightly into the many
loops and edits, the temporal displacement is difficult to observe. Instead, the
viewer struggles to ascertain the temporal filiations and frequently submits to
their ever-modulating present. Double-screen double exposures of positive and
negative filmstrips create a field of incandescent and obscure rectangles closer to
animated abstraction than home movies. The persistent temporal displacement
created by the two projection speeds forces the viewer into the real time of the
situation as material event even when not performed live.

In Le Grice’s many program notes and artist’s statements on the film, he invariably marginalized the content—“the original material for Little Dog for Roger is a few short sequences of 9.5 mm film rescued from the basement of a house where I used to live. It is a home movie shot of me, my brother, mother and a dog”45—in deference to medium-specificity: “This vaguely nostalgic material has provided an opportunity for me to play with the medium as celluloid and various kinds of printing and processing devices.”46 And yet an unavoidable nostalgia permeates the work at every level: the home movie, the soundtrack composed of 1950s records that sporadically and without warning interrupt the purring of the projector, and, most of all, the film stock itself.47 Released in 2006 on DVD, the film now appears doubly nostalgic: for a 1950s childhood and an obsolescent medium.48 But already by the 1960s, the 9.5 mm film gauge was so near extinction as to have been labeled “the living corpse.”49 The gauge’s most distinctive feature—a single, central sprocket hole whose placement allows the format to deliver an image size comparable to 16 mm at nearly half the width—was not the latest technological advance so much as the first mainstream casualty of a media system maintained through perpetual obsolescence. Insomuch as 9.5 mm film and 1950s records already belonged to a departed era by the late 1960s, Little Dog is less an exploration of the timeless essence of the medium than a proclamation of the medium’s historical and technological contingency.

Nevertheless, Little Dog’s handling of the film material makes it representative of a range of LFMC practices. Le Grice transferred the original material onto 16 mm by contact printing under glass and by hand pulling the 9.5 mm film through a primitive printer that he had converted from a projector. The film is first and foremost a self-reflexive and lyrical documentation of that transfer. For the first minute of the roughly ten-minute-long film, a flood of blurred images rushes down the screen, as if the shutter had been removed from the projector (instead Le Grice detached the film from the claw of the printer), and reminds the viewer that printers and projectors were once coupled with the camera as a single apparatus. In 1969, Ken Jacobs included an extended section of projection slippage in his seminal Tom, Tom, the Piper’s Son (1969). Jacobs dissected a 1905 film by refilming it off the screen and performed the analytic work of an amorous eye through
close-ups, repetitions, slow motion, and other techniques. He brought the camera-as-eye metaphor into the darkness of the cinema, into the eye that gazes at the cinematic screen, peruses its content, its surface, its reality. In place of the camera and screen, Le Grice’s projector-turned-printer anchors *Little Dog*. After a minute of printer slippage, the image of a dog haltingly appears—at times frozen, at times moving, at times still but pulled slowly through the printer, always framed by the filmstrip, with its distinctive, now luminescent central sprocket. The rest of the film’s short loops undergo seemingly endless printing transformations: over- and underexposure, sharp and soft focus, positive and negative printing, upside down and right side up, double exposures, wandering filmstrips. Sections of black and clear leader are augmented by scratches and stains. The emphasis on the printer, Le Grice soon argued, “allows physical aspects of the medium, the reality of celluloid, emulsion, sprockets, the nature and capabilities of the machinery to become the basis of experience and content.” All the original material for *Little Dog* was shot on a camera. The film is “cameraless” only insomuch as it shifts the emphasis from a world mediated by the camera to the mediation of the printer. This is how the LFMC translated the cameraless legacy of *Retour*. This is how it made *Retour*’s filmstrips visible.

In her film *Slides* (1970), Le Grice’s former student Annabel Nicolson did away with the camera entirely, ran the celluloid through a sewing machine, wove it with thread, collaged shreds of photographic transparencies and filmstrips directly on the celluloid and pulled it by hand through the Co-op’s Debrie step printer. Three years later in *Reel Time* (1973), a live expanded-cinema piece, Nicolson ran a long film loop from a projector, which projected images of her at a sewing machine, across the ceiling and down to a real sewing machine where she sat, sewing holes into the same loop. The loop’s projection was tied to its perforation. The performance was repeatedly interrupted and the audience plunged into darkness as the projector jammed; it ended when the loop broke. Nicolson collapsed the sites and technologies of production and reception—highlighting the opposing (and hierarchical) gendered associations of the
related technologies of projector and sewing machine—and bound the immaterial realities of the cinematic experience to the material properties of the filmstrip and the processes of its fabrication. But unlike in traditional gallery or cinema spaces, the LFMC’s film workshop and theater were so proximate that *Reel Time*'s elongated film loop could have physically connected the one to the other. *Reel Time* was a microcosm of the entire LFMC institution.

The LFMC was among the few facilities that combined production, exhibition, and distribution—as if the aesthetic engagement with the material filmstrip spawned an entire apparatus; as if the visibility of the filmstrips required a new conception of the cinematic institution. Peter Gidal nearly said as much in 1980: “Since 1966, members of the London Film-makers Co-operative have thought it necessary to have equipment at hand in order to allow for the making of films.” Participation in the construction of a cinema, the projection of films, the writing of criticism, upkeep—all these activities contributed to “the ‘machine’ called the Co-op, that *apparatus* of experimental film.”

At the LFMC, the film workshop and the cinema in particular were part of a single apparatus, a machine for production and reception, where materiality and process permeate each stage of the cinematic experience. Films were made, screened, edited, and rescreened but (like the filmstrips of *Reel Time*) not necessarily preserved beyond the extended production loop that was this apparatus of experimental cinema. The ultimate legacy of *Retour à la raison* as understood by Le Grice and his circle may have been the LFMC itself: where the site of reception came to mirror the site of production and enabled the materiality of celluloid, process, and projection to come into the light.

IV.

Europeans discussed *Retour* at length, but its inclusion in the Anthology Film Archives’ cyclical *Essential Cinema* program ensured it got more screen time there than anywhere else. In 1970, the Anthology Film Archives—the film museum founded to promote American avant-garde film and its European predecessors—opened its doors to the general public. In the manifesto describing its new theater, Anthology asserted that where early
movie houses grew out of vaudeville and were hardly appropriate for the art of film, the aptly named *Invisible Cinema*, conceived by Peter Kubelka in 1958, was a “machine for viewing” in which stadium seating, hooded seats, complete darkness, single-source sound equipment, and strict decorum ensured that the viewer would “not have any sense of the presence of walls or the size of the auditorium. He should have only the white screen, isolated in darkness, as his guide to scale and distance.” Kubelka’s *Invisible Cinema* attempted to purge anything that exceeded the image—even exit signs were a reluctant concession to fire codes. While *Invisible Cinema* was lauded as “the first true cinema” and “a projective and spectatorial dispositif, generated by [the American avant-garde] movement’s radical revision of the cinematic institution and apparatus,” Kubelka was unambiguous: “The concept of Invisible Cinema has nothing to do with the special aims of Anthology Film Archives.” In 1970, with various forms of expanded cinema raging from the West Coast across the European continent, *Invisible Cinema* was less an avant-garde reconfiguration of the classical cinema than a bulwark against its avant-garde corruption. Where Paul Sharits argued that “one may find it necessary to construct systems involving either no projector at all or more than one projector and more than one flat screen, and more than one volumetric space between them,” Kubelka insisted “This kind of cinema is not for multi-media, multi-screen, multiple speakers or for action mixed with film. . . . There is nothing really radical in this project, this is a normal cinema.”

Realized in 1970 but conceived in 1958, *Invisible Cinema*’s design and principles took form long before expanded cinema coalesced into a conspicuous force. Kubelka’s primary rival was television. From the moment the theater opened its doors to the public Kubelka asserted, “This . . . is normal cinema. If it looks different, it’s because other theaters are abnormal. They are like living rooms equipped with huge television sets.” Although it is beyond the scope of this essay, *Invisible Cinema* was conceived and implemented as a buffer against the televisualization of movies, not as an extension of an avant-garde project. Rather than see *Invisible Cinema* as the realization of a uniquely avant-garde dispositif, one must emphasize a certain incongruity, conceptual and historical, at play in the Anthology Film Archives theater: on the one hand, a film program
aimed at consolidating a particular vision of advanced experimental film—Landow, Sharits, Jacobs, and others; on the other hand, a cinema that worked to shore up the conditions of reception taken more or less for granted since the 1920s and now threatened by multimedia and expanded cinema within the ranks of the film avant-garde and by the increasingly dominant televsional distribution of movies in society at large. Indeed, the name “Invisible Cinema” is something of a retronym: only in the half-light of television and multimedia must one champion the invisibility of classical cinema.

That invisibility first became entrenched after World War I and was widely theorized and debated by the 1920s. In his 1926 treatise Philosophie des Films, Rudolf Harms argued that “spaceless darkness” (raumlose Dunkelheit) reigned inside the cinema. Anthropology’s manifesto skips over the decades between early cinema and the present—that is, the years of normative cinematic invisibility—such that its description of Invisible Cinema is nearly identical to the accounts of irate critics from the 1910s: “The auditorium is so dark that we are unable to recognize our immediate neighbor. We only perceive the luminous rectangle on the wall opposite us.” In each case, the setting disappears so that the spectator can be more fully absorbed in the projected image. As one early visitor to Invisible Cinema put it, “I was so shaken up by the picture that the novelty of the theater wore off. . . . Maybe that’s how it should be.” That’s largely how it had been for decades. Like the educator as posited by Nietzsche, the movie theater’s greatest task, according to Harms, resides in rendering itself superfluous. The cinema should “guarantee the highest degree of bodily detachedness and seek to alleviate the shortcomings of the individual’s fixed and local bondedness.” The turns of phrase are quite nearly Kubelka’s. Already in 1925, Jean Goudal gave voice to the conditions that would later prevail at Invisible Cinema:

Let’s go into a cinema where the perforated celluloid is purring in the darkness. On entering, our gaze is guided by the luminous ray to the screen where for two hours it will remain fixed. . . . Our problems evaporate, our neighbors disappear. Our body itself submits to a sort of temporary depersonalization which takes away the feeling of its own existence. We are nothing but two eyes riveted to ten square meters of white canvas. . . . The darkness of the
auditorium destroys the rivalry of real images that would contradict the ones on the screen.65

In Goudal’s cinematic experience, the purring in the darkness induces a “conscious hallucination.”66 The spectatorial experience of Invisible Cinema, in the words of one reviewer, “was rather like floating in a vast, benign space, looking at a rectangular-shaped hallucination of almost drug-induced clarity.”67 In its most important aspects, then, Invisible Cinema was a classical cinema. But the cinema at Anthology was a two-pronged apparatus: Invisible Cinema (a theater) and Essential Cinema (a film canon). As announced in Anthology’s manifesto:

What are the essentials of the film experience? Which films embody the heights of the art of cinema? The creation of Anthology Film Archives has been an ambitious attempt to provide answers to these questions; the first of which is physical—to construct a theater in which films can be seen under the best conditions; and the second critical—to define the art of film in terms of selected works which indicate its essence and its perimeters.68

Essential Cinema, which numbered Retour among its rank and file, was a cyclical program of several hundred films arranged alphabetically according to author and screened as an extended loop.69 Although no postwar European avant-garde films were included, excepting those by Peter Kubelka, there was a strong emphasis on the formal and the recently emergent structural film: if not Le Grice and the Heins, then Landow, Sharits, and Jacobs.70

Situated within this discursive, even museological context—with its sharp emphasis on the visibility of the celluloid, looking at rather than looking through film—the filmstrips of Retour à la raison could come into view. As Eric de Bruyn argues in relation to the physical and discursive institution that was Anthology, “The spectator was transported to another world, but this world coincided with the surface of the film itself that was subjected to the critical judgment of the spectator.”71 In sum, the theater was not an avant-garde cinematic apparatus to complement the avant-garde film program but an invisible cinema for the exhibition of visible film. The incongruity of this juxtaposition cannot be overstated. Anne Friedberg has characterized the phenomenological tangle—“twin paradoxes”—in which the spectator/viewer/user is generally caught when facing the screen: “of mobility and immobility (the mobility of images; the immobility of the spectator) and of materiality and immateriality (the material space of the theater, domicile, or office and immateriality of the cinematic, televisual, or

Invisible Cinema at Anthology Film Archives, 1971.
computer image).”\textsuperscript{72} Invisible Cinema immobilized its viewers forcefully, but—combined with a heavily structuralist avant-garde film program—largely reversed the material-immaterial opposition asserted by Friedberg: the strange virtuality of Invisible Cinema was composed of a space that insisted on its immateriality and images that, however fleeting, maintained their own materiality no less adamantly.

V.

More than anyone, Man Ray wrestled with the visibility of his rayographic strips. From 1923 to 1926, Man Ray experimented with various forms of cameraless film and alternative projection, none of which was satisfactory and of which mere fragments survive.\textsuperscript{73} The inclusion of a few short rayographic sequences from Retour at the opening of Emak Bakia (1926)—their cameralessness largely unheeded in the widespread reviews of the film—marks the close of a phase of aesthetic exploration rather than its apex. Yet as late as 1929—that is, after the release of his last official film—Man Ray shared his “beau rêve” with an interviewer for Cinéa-Ciné pour tous: “The dream would be to do away with the camera and treat the film directly though chemical means. This is a question that excites me.”\textsuperscript{74} It was a question that had excited him ever since the 1923 Soirée du cœur à barbe, but one that met with little success. Instead, Man Ray borrowed the phrase “to do away with the camera” from an interview he gave earlier in 1929, where it was used to describe his rayographs and their cinematic qualities.\textsuperscript{75} From very beginning—and then time and time again—the rayographs were granted cinematic traits in the words of critics and through their placement in art and cinema journals. As Jean Cocteau announced in his public letter to Man Ray upon the 1922 introduction of the rayographs: “you have just opened up on treasures, cinematographic among others.”\textsuperscript{76} The nature of this “cinematographic treasure,” however, was never clarified: not by Man Ray, not by his critics, not by recent scholarship. Even less so the relationship between the rayographic strips of Retour and the rayographs proper: not only because cameraless films and photographs are now separated by the disciplinary divisions imposed by cinema studies and art history but because Retour’s cinematic cameralessness was quickly forgotten and so existed in a state of latency, at or beyond the limits of perception, just outside avant-garde discourse. In the balance of this essay, I will propose—even as I cannot possibly present the extensive historical record that proves—that the rayographs, rather than the filmstrips, were the most successful venue for Man Ray’s exploration of cameralessness and cinema.

Although the film Retour à la raison quickly faded from memory, a photograph
of the same name was an instant classic. As with a number of Man Ray’s cinematic images (and increasingly more often as the decade progressed), a still from Retour’s final sequences—Kiki’s nude torso undulating in raking light—was reproduced as a photograph in the pages of La révolution surréaliste (no. 1, 1924). From the inaugural issue of this first full-fledged surrealist mainstay, the image became an icon of the movement in the pages of Das Kunstblatt (1926), L’art vivant (1929), and as the introductory nude in the summation of Man Ray’s 1920s photographic work, Photographs by Man Ray, Paris, 1920–1934 (1934), produced by James Soby. The title Retour à la raison quickly came to denote this “photograph” of Kiki rather than the film from which it was culled—a tendency that has been reinforced through brilliant recent scholarship that, however, pays little attention to the film.77 Instead, the film’s cameralessness was first implied through the subsequent rayographic inscription of its celluloid strips. Placed directly on photosensitive paper and exposed to light, Retour’s Kiki-emblazoned filmstrip yielded a stunning rayograph that was not only selected for Soby’s 1934 catalog but adorned the 1926 cover of Hans Richter’s special double-issue of G. dedicated to cinema. Retour’s filmstrips were disseminated most widely not through projection but through their rayographic inscription. In other words, the rayographs rather than the cinema were Man Ray’s preferred medium for the dissemination of Retour’s filmstrips. Accordingly, if there was any resolution between Retour’s material filmstrips and the immaterial experience of cinema in the 1920s, it was legible only in the rayographs. A second rayograph, likely created from the filmstrips of Retour, begins to articulate the materiality of cinematic and photographic mediation.78 Man Ray placed shards from a shattered glass plate portrait of Kiki directly onto the photosensitive paper. Bands of celluloid soar above the glass. Here, the material support of photography (glass plates) and film (celluloid strips) are juxtaposed in a single image. The content of the filmstrip is indiscernible, but an upside-down Kiki clearly stares out from the bottom left-hand corner. Her image is fractured into at least three pieces. Several shards cast bright, white shadows—the clearest indication of their materiality and depth. Like the
image of Kiki, bound to the glass plate at the surface of the paper yet hovering in a fathomless space, the ribbons of luminous celluloid appear at times material and at times like a “play of light and shadows whose support has disappeared,” as a critic once described Man Ray’s abstract films. Rather than emphasize materiality or medium-specificity, the editors of Cahiers du mois, where the rayograph first appeared in print, likened the effect to the experience of cinema:

We publish here photographs by M. Man Ray, who miraculously was able to provoke on photo-sensitive paper the illusions and revelations ... that evoke in us a type of emotion that one would be tempted to call “cinematic” and which seems a priori paradoxical for the desire to obtain a static image.

This paradox—repeated variously in countless descriptions of rayographs throughout the 1920s—cannot be explained without recourse to the images’ conditions of production. The synthesis of Retour’s material filmstrips and the immaterial experience of cinema put forth by Man Ray was not a rejection of the classical cinema in favor of medium specificity and material reality (as was repeatedly claimed about Retour by material filmmakers in the 1970s) but the transposition of a “cinematic” experience into another medium: photography,
specifically the rayographs. As Le Grice argued, Man Ray’s *Retour*, like his own *Little Dog*, inscribes the process of production into the filmstrips themselves. But where Le Grice created his “cameraless” film *Little Dog* on his homemade printing equipment, Man Ray created his rayographic strips *in the darkroom*. The difference is essential. In a sense, Man Ray’s cameraless films and photographs are not cameraless at all; instead, they substitute for the photographic camera the “camera” or chamber of the darkroom (camera obscura). The importance of this chamber, in turn, cannot be overstated for a critical history of avant-garde photograms, because its use marks a fundamental break with previous cameraless photographs, nearly all of which were created outdoors or in daylight. Christian Schad’s earlier cameraless photographs (later called schadographs) were executed in daylight, on printout paper and are most closely related to dada collage. László Moholy-Nagy’s earliest photograms, also made in daylight, on printout paper, most resemble contemporaneous constructivist painting. But even before Moholy-Nagy switched to developing paper, he hinted at the possibility that photosensitive paper could be treated like a screen and the darkroom transformed into a miniature but expanded cinema. In his earliest discussions of cameraless photography, the
as-yet-unnamed photograms are but a subcategory of light projected onto screens:

Instead of having a plate which is sensitive to light react mechanically to its environment through the reflection or absorption of light, I have attempted to control its actions by means of lenses and mirrors. . . . This means that the filtered, reflected, or refracted light is directed upon a screen and then photographed. Or again, the light-effect can be thrown directly on the sensitive plate itself, instead of upon a screen. (Photography without apparatus.)

For Moholy-Nagy, this practice inevitably led to film: “Since these light effects almost always show themselves in motion, it is clear that the process reaches its highest development in the film.” But whereas Moholy-Nagy stressed multiple, moving light sources in the production of his photograms (and his various light displays, films and props), Man Ray invariably employed a single, stationary light source: a solitary lightbulb.

Although never acknowledged as such, the opening of Retour is legible as an illustration of its own production. The film commences with a near-perfect distribution of granular noise—a rayographically prepared salt-and-pepper “roast,” as Man Ray later described it. A peripatetic tack quickly appears in positive (dark forms on a light ground) followed by positive pins. Less perfectly distributed noise—“a snowstorm, with the flakes flying in all directions instead of falling”—is followed by gray frames and some fleeting, illegible words. (Direct inspection of the filmstrip reveals “Man Ray à tirer 5 fois.”)

The tack returns—now in the original negative: “white on black ground as in X-ray films”—
followed by “huge white pins crisscrossing and revolving in an epileptic dance.” All this in a mere twenty seconds. More visual noise. Then the first camera-based image: an approximately two-second shot of a luminous light bulb in a completely dark space. The discernible objects of the opening sequence, in sum, are pins, tacks, and a two-second shot of a lightbulb. Man Ray later described the production of Retour in almost identical terms: “I threw pins and thumbtacks at random; then turned on the white light for a second or two, as I had done for my still Rayographs.” This light bulb is the precise inverse of the light bulb in Le Grice’s Castle One. Where the bulb in Castle One (literally) obliterates the projected image and illuminates the spectatorial space of the cinema, Retour’s bulb (figuratively) creates the rayographic images just projected in the dark space of the theater. (In his later, admittedly dubious account, Man Ray underscores the darkness of the theater no less than three times.) For the two or three seconds the light bulb is on screen—the only source of illumination—the theater is structurally analogous to the darkroom during the creation of a rayograph. If Castle One came to be known as the “light bulb film,” Retour à la raison should be called the “dark room film.” Where Le Grice attempted to subvert the classical experience of cinema, Man Ray was able to re-create it: a dark room illuminated by a solitary electric light projected on a screen. Rather than create an apparatus of experimental film where the reception mirrors the production (Le Grice and the LFMC), Man Ray and his critics came to understand implicitly that the rayographs’ conditions of production mirror cinema’s conditions of reception and that they were thus able to transpose the cinematic experience onto photosensitive paper. After the Soirée du coeur a barbe, Man Ray did not screen or even mention Retour for the duration of the interwar period. His next few ventures in cinema went nowhere. Instead, Man Ray found cinematic success in his darkroom. This is the “cinematic treasure” unearthed in the rayographs.

Surely, the transposition from the cinema to the rayographs was not exact. Nor was it ever named outright. But in lieu of a thorough historical demonstration, let us conclude by entering Man Ray’s darkroom-turned-cinema via one of his cameraless photographs—and let us do so with the eyes and words of Georges Ribemont-Dessaignes, the most consistent and insightful champion of the rayographs in the 1920s. The image in question is the eighth of twelve untitled rayographs compiled in Champs délicieux (1922), the first limited-edition folio of
avant-garde cameraless photographs, introduced by Tristan Tzara’s short text “La Photographie à l’envers.” As with nearly all rayographs, the image is composed of a dark ground that at once insists on its own flatness and conjures a vast, dark space. Of the depicted objects, the spring is the most easily discernible; it clearly winds its way from the lower left-hand corner toward the upper right of the image. This spring anticipates the rayographic strips of *Retour*, where a similar form will be inscribed uninterruptedly and in its full length on the celluloid and set into motion exclusively through the action of the projector (when cameralessly exposed, neither the spring nor the film nor the light source moved at all). *Retour*’s spring is suspended between the static materiality of the filmstrips and the erratic immateriality of projection. The spring in the *Champs délicieux* image is also suspended: between the materiality of the paper image and the immateriality of the space it projects. The rest of the image is not so easily explicable. Nebulous shapes seem to hover in the distance. A perfect circle rests at the surface. The image can be deciphered only when we shift our perspective from the vertical to the horizontal axis: we are not looking out a window but up, as if from beneath a glass table. Suddenly, the perfect circle is legible as the base of a wineglass; the spring snakes around its stem; its empty bulb stands at an angle (the clearest indication of the direction of the light source).

By the time Ribemont-Dessaignes came to describe this image, he had already articulated the effects of the rayographs: Man Ray “invents a new world and photographs it to prove it exists,” a world composed from the “relativity of time and of space” where one belongs to “many fields of gravitation at the same time,” where “causality hardly touches the spirit.” This 1923 description is reminiscent of Hugo Münsterberg’s inaugural theorization of the dominant aesthetic sensation that undergirds cinematic pleasure—later repeated by countless others in Man Ray’s direct circle—namely, “The massive outer world has lost its weight, it has been freed from space, time, and causality.” Unsurprisingly, Ribemont-Dessaignes describes the eighth image from *Champs délicieux* and the space it engenders in profoundly cinematic terms:

And in fact, in a space—we have the obligation to speak of space, whatever that might mean—in a space where sound appears not to propagate, it seems that we have discovered many ways to move, and to go from extraordinary floating clouds high above in the sky to a crystal glass. We feel that we no longer have the same dimensions as those which preside over our own body—when it moves in the form of the gaze along a spiraled spring that recalls familiar shapes.
This space—where silence prevails and we are freed from the dimension which normally preside over our body, a body that now moves as a gaze—is the space of the movie theater when the spectator is absorbed in the experience of cinema. Ribemont-Dessaignes aligns the dark space—“whatever that might mean”—of the rayographs with the “spaceless darkness” of the cinema. This spaceless darkness is what the LFMC worked so hard to subvert and Kubelka so hard to preserve.

The obscurity of the darkroom, the cinema, and the rayographs are aligned. But because a 24 × 18 cm photograph is so utterly different from a ninety-seat theater, the eighth rayograph from Champs délicieux inverts the terms of Invisible Cinema when screening a film like Retour à la raison: rather than the dark space of the cinema inducing a sense of “floating in a vast, benign space, looking at a rectangular-shaped hallucination,” the absorption in the rectangular-shaped, two-dimensional rayograph enables us to move in the form of a gaze, freed from bodily constraints. Rather than an immaterial space in which one is confronted by images that insist on their own materiality, the rayographs offer material images that open onto an immaterial space. In an assertion oft repeated (and issued by others already in the 1920s), Roland Barthes claimed that

the photograph must be related to a pure spectatorial consciousness and not to the more projective, more “magical” fictional consciousness on which film by and large depends. This would lend authority to the view that the distinction between film and photograph is not a simple difference of degree but a radical opposition. Film can no longer be seen as animated photographs: the having-been-there gives way before a being-there of the thing.89

The rayographs instantiate neither a photographic having-been-there nor a cinematic being-there of the thing but the not-being-there of the moviegoer. They collapse the “radical opposition” between photography and film through the depersonalized body of the cinematic spectator and the absorption of the rayographic viewer—each of whom floats in a spaceless darkness anchored in photography and realized in a darkened room. Avant-garde cameraless photographs belong neither on the back side of the Pompidou installation, to a bygone era of materiality and immediacy, nor to past futures of immaterial distance but at the boundary that divides immaterial cinema from material film and questions the very viability of that division.
Notes
The impetus for this essay was the fortieth anniversary of the London Film-Makers’ Co-op and the film programs and DVD, *Shoot Shoot Shoot* (2006), curated by Marc Webber. A review of the DVD by Federico Windhausen is published in this issue as part of Grey Matter.

I would like to thank Branden Joseph for the impetus to extend a dissertation chapter from the 1920s through to the present and for shepherding my efforts to completion. Thanks also to Karen Beckman for insisting on a feminist critique of avant-garde film still underrepresented in this and other essays. Unless otherwise noted, all translations are my own.

2. Man Ray, *Self Portrait* (1963; reprint, Boston: Bulfinch Press, 1998), 212. Patrick de Haas has demonstrated that the placement of the thumbtacks was anything but random. He was also the first to discover photographs of naked body parts contact-printed onto the celluloid. See Patrick de Haas, *Cinéma intégral* (Paris: Transédition, 1985), esp. 108–111. A great deal can and must be said about the content of the film and the filmstrips, especially in relation to the female body, but space restrictions limit my discussion to the material strips and their projection. I address these questions at length in my forthcoming dissertation, *Into the Dark Chamber: Avant-Garde Photograms and the Cinematic Imaginary* (Princeton University, 2008).
11. Man Ray, *Self Portrait*, 212–13. This fictitious description has served as the basis of innumerable accounts up to the present.


20. Malcolm Le Grice, “The History We Need” (1979), in Experimental Cinema in the Digital Age, 31. He continues, “Man Ray’s case illustrates this borderline which represents the basis of the major and most contentious exclusion made by this version of experimental film history.”


23. V.I. Pudovkin, Film Technique and Film Acting (1926), ed. and trans. Ivor Montagu (New York: Grove Press, 1960), 83, 84; emphasis in original.


28. Le Grice wrote in one of his earliest published pieces (and reaffirmed throughout the decade), “In some respects this development is parallel to a development in twentieth-century art, particularly painting, where the physical properties of the material become the basis of the language, counteracting, contexting or denying the associative and illusory nature of the image.” Malcolm Le Grice, “Thoughts on Recent ‘Underground’ Film” (1972), in Experimental Cinema in the Digital Age, 16.

29. The term *film as film* has a long and complicated history in LFMC circles. David Curtis and Peter Gidal used the term as early as 1971. (Gidal later regretted its essentialist connotations.) The term became the title of two major European avant-garde film exhibitions that, in retrospect, mark the end rather than the zenith of structural film and expanded cinema. See David Curtis, Experimental Cinema (New York: Universe Books, 1971), 157; Peter Gidal, “Film as Film” (1972), in A Perspective on English Avant-Garde Film, ed. David Curtis and Deke Dusinberre (London: Arts Council of Great Britain, 1978); Gidal, Materialist Film, 20; Birgit Hein and Wulf Herzogenrath, eds., Film als Film (Cologne: Kölnischer Kunstverein, 1977); and Phillip Drummond, ed., Film as Film (London: Arts Council of Great Britain, 1979).


34. Malcolm Le Grice, “Real TIME/SPACE” (1972), in Experimental Cinema in the Digital Age, 156.

35. By the mid- to late 1970s, as texts became available in English, direct links began to emerge between members of the LFMC—especially Le Grice and fellow LFMC spokesman Peter Gidal—and critics associated with apparatus theory in France and England. See, for instance, Malcolm Le Grice, “Problematising the Spectator’s Placement in Film” (1978), in Experimental Cinema in the Digital Age, 178; and Stephen Heath, “Repetition Time: Notes around ‘Structuralist/Materialist Film’” (1977), in The British Avant-Garde Film: 1926 to 1995, ed. Michael O’Pray (London: Arts


40. Le Grice, “The History We Need,” 37.


44. Le Grice, “Material, Materiality, Materialism,” 167; emphasis in original. Le Grice trained many future LFMC members—including William Raban, Gill Eatherley, Annabel Nicolson, and Marilyn Halford—at Saint Martins School of Art, where he taught. Until the LFMC set up its own workshop at the Robert Street Arts Lab (IRAT, Institute for Research and Technology) in late 1969, Le Grice’s homemade equipment was the primary access point for alternative printing. Le Grice, Raban, Nicolson, and Eatherley became a loose performance collective that adopted the name Filmaktion after a 1972 expanded cinema exhibition at the Liverpool Walker Art Gallery of the same name.


47. Le Grice now seems of two minds concerning the nostalgic content. He recently avowed, “the images of family have been distanced from any nostalgic function by the formal structure of
the film.” Le Grice, “Reflections on My Practice,” 228. Yet at the same time, he wrote in program notes for a recent screening in Germany (and relayed to me via e-mail on 20 December 2006): “Well—I thought it was about film as a medium and material—scratches, sprocket holes, dirt, slippage in the projector, blank screen, gaps in the sound-track—I forgot that one of the boys was me, the other was my brother, the young woman was my mother—now dead—and behind the camera was my father—now dead—see the cyclops—the dog was mine—nothing to do with Roger—that is another story.”

48. A single-screen version is available as part of the DVD curated by Marc Webber, Shoot Shoot Shoot: British Avant-Garde Film of the 1960s and 1970s (London: LUX; Paris: Re:Voir, 2006). Malcolm Le Grice generously made a DVD of the two-screen version available to me for this article.

49. The 9.5 mm gauge, introduced by Pathé in 1922, lost a format war with Kodak’s less economical but better marketed 8 mm film stock. See Lenny Lipton, Independent Filmmaking (London: Studio Vista, 1974). Le Grice wrote the postscript to the British edition.


51. Slides is also available on the Shoot Shoot Shoot DVD. If the materiality of the celluloid film gives way to the immaterial code of the digital video disc—a difference apparent less in projection than when the physical reel or DVD is grasped in hand—that same code enables the viewer to pause the movie and extend those moments where Nicolson arrests the flood of images and allows the literally threaded filmstrip to appear still on the screen. These moments—in frequent but essential to the film—invoke a tactile relationship to the filmstrip and the cinematic experience, a relationship that ironically is enhanced by the capabilities of digitalization. On the digital freeze frame, see Laura Mulvey, Death 24x a Second: Stillness and the Moving Image (London: Reaktion, 2006), 30.


60. Between the 1958 conception and the 1970 realization of Invisible Cinema, the dominant site of movie reception had become real living rooms: “[Invisible Cinema] emerged at a time when the movie theater was in its death throes, at a time when—in many countries—television began to play the dominant role in the distribution of films.” Werner Jehle, “Geschichte der Kino-Architektur,” Cinema, no. 4 (1979): 16. For data concerning the rise of the televised film and the
made-for-TV movie, see Cobbett S. Steinberg, *Reel Facts* (New York: Vintage Books, 1982), 29–36. Kubelka’s original conception of *Invisible Cinema* coincided with the major studios’ initial release of their films for televisual distribution in the late 1950s. Equally important, Kubelka excluded nearly all the 1950s film industry innovations—widescreen, stereo magnetic sound, 3D, and so on—intended to win back their audience from television. These technologies of realism, as John Belton argues, engender a kind of excess that was often packaged as spectacle (surround sound to the point of distraction, etc.), thereby violating the technological invisibility essential to *Invisible Cinema*. See John Belton, *Widescreen Cinema* (Cambridge: Harvard University Press, 1992), 202–216. Additionally, the desperation of the film industry was palpable in several reviews of *Invisible Cinema*, in large part because American cinema attendance reached its nadir in 1971. For annual figures on American cinema attendance and their underlying causes, see Steinberg, *Reel Facts*, 46; and Belton, *Widescreen Cinema*, esp. 69–84.


69. Sitney, “Introduction,” vi. Annette Michelson notes that “this principle of the loop as the ideal form of the canon’s exhibition” was highly indebted to Kubelka, who, earlier, had founded the Österreichisches Film Museum. Michelson, “Gnosis and Iconoclasm,” 7.

70. Kubelka was on the selection committee for *Essential Cinema* and avidly expressed his disdain for contemporary European experimental film. That same committee, moreover, was composed of six men (five after Brakhage resigned) and not a single woman—a fact all too poignantly reflected in the selection.

71. Eric de Bruyn, “The Expanded Field of Cinema, or Exercise on the Perimeter of a Square,” in *X-Screen*, ed. Michalka, 165. Michelson and de Bruyn offer strong interpretations of the radical project that was Anthology Films Archives only to subsume *Invisible Cinema* within it.


73. The remarkable scope of Man Ray’s film activities was first revealed in Jean Michel Bouhours and Patrick de Haas, eds., *Man Ray: Directeur du mauvais movies* (Paris: Centre Georges Pompidou, 1997). Until this catalog, Man Ray had largely thrown historians off the scent of his hybrid endeavors with fallacious accounts such as the one of his failed collaboration with Comte Etienne de Beaumont and Henri Chomette: “A young cinéaste who directed the film introduced shots of
revolving crystals, abstract optical effects similar to my Rayographs, but I would have nothing to do with such a hybrid production.” Man Ray, *Self Portrait*, 132. More on these connections is in my forthcoming dissertation.

77. See especially Rosalind Krauss, “Corpus Delicti,” in *L’Amour Fou* (New York: Abbeville, 1985), 74; and Hal Foster, “Violation and Veiling in Surrealist Photography: Woman as Fetish, as Shattered Object, as Phalus,” in *Surrealism: Desire Unbound*, ed. Jennifer Mundy (Princeton: Princeton University Press, 2002), 217. The female nude is perhaps the central motif in Man Ray’s oeuvre and is a site of subjugation and freedom that I address at length in my forthcoming dissertation but which lies beyond the scope of the current essay. For a curiously sympathetic reading of Man Ray’s nudes, see Whitney Chadwick, “Lee Miller’s Two Bodies,” in *Emmanuel Radnitsky*, ed. Leif Wigh (Stockholm: Moderna Museet, 2004). The issue was treated with the utmost urgency in LFMC circles. Peter Gidal, for example, all but abstained from the representation of the female form on screen.

78. The rayograph, now located at the Getty, is signed and dated 1922. Man Ray often backdated rayographs, and this image—like the more famous Museum of Modern Art rayograph just discussed—is more likely composed of filmstrips from *Retour*. In any event, the image was certainly made between 1922, the year of his first rayograph, and 1925, the year this rayograph was first published (unsigned and undated), and so is closely related to the cinematic experimentation surrounding *Retour*. The Man Ray Estate denied the reproduction of this and other rayographs in any future electronic format that the print version would later take. The image can be found, however, at: http://www.getty.edu/art/gettyguide/artObjectDetails?artobj=53362.
81. Man Ray later reflected, “I remember when I was a boy, placing fern leaves in a printing frame with proof paper, expositing it to sunlight, and obtaining a white negative of the leaves. This was the same idea, but with an added three-dimensional quality and tone graduation.” Man Ray, *Self Portrait*, 106.
83. László Moholy-Nagy, “Light—A Medium of Plastic Expression.” *Broom* 4, no. 4 (1923): 284; emphasis in original. That Moholy-Nagy does not immediately grasp the full implications of his insight is clear from the changes made between the two editions of his mid-decade classic, *Painting Photography Film* (1925/1927). In both editions, he largely repeats the definition of the photogram from *Broom*. But he changes the parenthetical elucidation of “photography without apparatus” from an architectural blueprint or “Lichtpause” to a “sophisticated play of light and shadow.” Where the latter allows for a three-dimensional projection environment, the former is resolutely two-dimensional. László Moholy-Nagy, *Malerei Photographie Film* (Munich: Albert Langen, 1925),

84. Moholy-Nagy, “Light—A Medium of Plastic Expression,” 284. Photogram scholars have downplayed the relationship to film. Film and media scholars have echoed Moholy-Nagy’s teleological rhetoric in order to argue that photograms were “merely an intermediate stage in the history of creation with light [Lichtgestaltung], a history whose telos is the kinetic light display [Lichtspiel].” Anne Hoormann, *Lichtspiele* (Munich: Wilhelm Fink, 2003), 153.

85. This and further descriptions come from Man Ray, *Self Portrait*, 212–213. A 1970s-style analysis might liken this first sequence to the grain of the film.


