

The concerns of O’Neill’s first 15 years of filmmaking — the graphic qualities of the image, the role of stasis in the context of a time-based art form, and the process-based applications of technology in making art — are writ large in the second phase of his career, in which he shifted to 35mm for a series of extraordinarily accomplished feature-length films. In these films, which include *Water and Power* (1989) and *Decay of Fiction* (2002), the sketch-based experimentation of his earlier work is supplanted with a symphonic form that seeks to unify its disparate elements into a thematically cohesive whole, often with more pronounced political engagement. In both phases of his career, O’Neill has used the optical printer to experiment with form, which is often linked to art historical ideas about design, process, and perspective. This stands in contrast to Barbara Hammer, whose own innovative use of the printer is tied directly to its capacity to provide an emotionally accurate representation of her personal feelings and desires.

Barbara Hammer: The Technology of Touch

If ever there were a meta-film about optical printing, materiality, and the marginalization of the avant-garde filmmaker, Barbara Hammer’s *Endangered* (1988) is it. An urgent warning about the precarious position of experimental filmmakers, light, and life on planet Earth, this fragile film begins with an off-kilter double exposure of Hammer working steadily on her optical printer while snowflakes, depicted as particles of light energy, swirl around her silhouette. In a series of traveling mattes, boxes-within-boxes expand and contract, dividing abstract patterns of light into discontinuous fragments. Glimpsed through colored filters, we see Hammer seated at

her printer followed by parsed images of endangered species, especially birds and tigers, who are broken apart and rearranged by the restlessly swelling mattes. The meta-shots of Hammer figure her as both producer and protector of the film, her hand steady on the throttle as the natural world breaks into pieces around her. Visible evidence of painting, scratching and sewing emphasize the materiality of the filmstrip, reminding us that celluloid is as imperiled as anything else. In its tactile engagement with the physical world, use of technical effects that serve as metaphors for emotional propositions, and advocacy for the marginalized, *Endangered* features almost all of the major components of Hammer's use of the optical printer.

For those unfamiliar with the scope of Hammer's prolific career, *Endangered* seems like a surprising film for her to make. Even within avant-garde circles, Hammer is best known for her pioneering work as a queer filmmaker, in diaristic films that portray aspects of lesbian sexuality and identity, such as *Dyketactics* (1974), *Superdyke* (1975) and *Women I Love* (1976), and experimental documentaries on LGBTQ history, such as *Nitrate Kisses* (1992), *Tender Fictions* (1996), and *History Lessons* (2000). Understandably, these films have received the bulk of critical attention, although perhaps at the expense of her work from the 1980s, which substitutes some of the radical content of her early films for more radical form.¹ This is not to downplay Hammer's trailblazing contributions to feminist filmmaking, but to underscore the form/content dichotomy in her work that has frequently rendered her a marginalized figure. As Hammer points out, her early lesbian audiences were often aggravated by the formal challenges of her work, while the candid depiction of lesbian lifestyles seemed outside the purview of the male dominated cinematic avant-garde. In an interview, Hammer recalled, "I could be rejected by both

audiences for different reasons: for content by the avant-garde audience and for form by the lesbian, feminist audience.”²

As this statement suggests, Hammer’s earliest films, sincere yet playful depictions of same-sex erotic bonding, travels with lovers and friends, and politically engaged lesbian collectives, contain a fair amount of formal innovation. As Ara Osterweil observes, Hammer’s early work is analogous to that of Stan Brakhage, in the sense that she draws upon personal experience as raw material for a reshaping of vision, but with as much attention paid to political and social Otherness as individual consciousness.³ Relatively early in her career, Hammer was exploring the possibilities of the optical printer, especially as a vehicle for conveying an emotional orientation towards her material. In *Double Strength* (1978), a forthright portrait of the filmmaker’s affair with dancer and performance artist Terry Sendgraff, isolated printing effects serve as metaphors for the emotional stages of the relationship, moving from exhilaration to devastation, and, eventually, reconciliation. Sendgraff invented Motivity, an improvisational form of aerial dance performed on a low-flying trapeze, and Hammer uses freeze frames to analyze her muscular, fluid body as she practices in the nude. Their breakup is represented by a still image of Sendgraff’s face, which is pushed offscreen in increments, a black frame gradually standing in for her absence. Later in the film, Hammer superimposes a still image of herself grieving with a tire running vertically down the length of her body, using the printer to suggest that losing love can engender physical pain, comparable to being run over by a tire.

In other early films, Hammer turned to the optical printer for analysis, using slow motion, freeze frames, and multiple exposure to arrest or multiply her images. In many cases, the device serves a revelatory function, locating an emotional truth through intense scrutiny, often of the

female body. *Multiple Orgasm* (1976) consists of two layers of imagery, superimposed so that neither layer dominates. The first is a tight close-up of Hammer's vulva as she masturbates to orgasm, while the second is comprised of handheld panoramic views of porous rock formations. As Hammer's fingers vary the speed and rhythm of her stroking, surprising visual congruities between the vagina and the rocks begin to emerge, blurring the layers until it seems almost as if the gliding camera is going to slip inside her body. As she climaxes, Hammer freezes the image of her face; the post-orgasm endorphin rush is represented by rephotographing the images through a purple filter, as if to synaesthetize the afterglow. According to Hammer, "When I made *Multiple Orgasm*, I wanted to see what I looked like [having an orgasm]... That's one of the most intense things in our life, and we've never seen it. I wanted to see what my face looked like. In contraction, it looked like a child being born. I was so surprised."⁴ In this instance, the use of the optical printer is motivated by a desire to dissect the sexual experience, as an effort for Hammer to understand the mechanics of her own body through self-scrutiny and visual analogy. As in *Double Strength*, Hammer also uses the printer to devise potent visual metaphors for her affective responses.

Hammer first gained access to a JK optical printer at San Francisco State University, where she completed an M.A. in 1975. Considering that she had begun her artistic career as a painter, Hammer felt an immediate affinity for the printer as a tool for controlling the color and composition of the frame. In 1980, Hammer began to work on *Sync Touch* (1981), a film that was to serve as a kind of manifesto in its formal advocacy for a cinema of touch, and realized that the film necessitated more elaborate printing processes. She was given access to another JK printer through David Heintz, a filmmaker who was teaching at Mills College in Oakland. Mills

was home to the Center for Contemporary Music, an internationally renowned program for experimental composition that also maintained a variety of electronic equipment, including a Moog synthesizer and other cutting edge technologies. According to Hammer, Mills also had a JK “in a little cabin tucked away at the back of the grounds of this beautiful private school. They had all kinds of other technical stuff, but they also had this printer, and no one was in this space. David taught me how to use it and gave me a set of keys to the cabin. I would take my handpainted film there and rephotograph it.”⁵

Sync Touch is a theoretical justification for the role of touch in Hammer’s cinema, enacted on the optical printer. Hammer’s first sexual experience with a woman had a profound effect on her, especially in the sense that touching a body similar to her own gave her a heightened awareness of the power of touch in shaping phenomenological experience. According to Hammer, she became “more sensitized to different areas of my body: trunk, stomach, pelvis, chest and throat. Feelings and emotions became the crucial center of my life, and it was this new source of content I wanted to express in my work.”⁶ This led her to incorporate hundreds of images of touching into her films. In *Dyketactics*, all 110 shots depict an act of same-sex touching, while the artfully composed images of Terry Sendgraff’s muscular and agile body on the trapeze in *Double Strength* demonstrate a palpable physicality.

Throughout the 1970s, Hammer’s ideas about touch and sensation were rooted primarily in intuition and experience, but by the end of the decade, exposure to more theoretical explanations through books by Aldous Huxley and classes on feminist phenomenology at San Francisco State prompted her to develop a more intellectually sophisticated approach to the subject: “The theory is that we touch before we see and so we know the world first through touch

rather than sight. A child will know a mother's breast before their eyes can actually focus. For two months, the world is a blur, but we are touching."⁷ By this point in her career, Hammer was friendly with Stan Brakhage. In 1975, she had made a portrait film, *Jane Brakhage*, that sought to investigate Jane's role in her husband's filmmaking, forming a kind of triptych with Hollis Frampton's famous interview of the Brakhages in *Artforum* and Brakhage's own *Hymn to Her* (1974).⁸ In advancing the claim that touch is more primary than sight, Hammer was offering a revisionist, gendered rebuttal of one of the avant-garde cinema's most deeply held precepts, articulated in Brakhage's "Metaphors on Vision": that sight, especially as conflated with "vision," predates language and, therefore, the task of cinema should be to recover a more pure, more adventurous way of seeing.

The revelation that touch precedes sight, and therefore has a constitutive role in shaping perception encouraged Hammer to explore the relationships between touch, sight, and movement in her films. Brakhage's arsenal of defamiliarizing techniques, discussed at length in the previous chapter, were attempts to locate a visionary aesthetic for film; similarly, Hammer would turn to the optical printer in search of a tactile aesthetic. In the same way that Brakhage's *Anticipation of the Night* (1958) both announces and illustrates the ideas that he would put forth in "Metaphors on Vision," *Sync Touch* serves as an artistic declaration of this theoretical principle. Given that optical printing was central to its making, the film crystallizes one of Hammer's major objectives in working with the device: To foster a tactile, sensual engagement with her materials.

Sync Touch begins with a slow tilt down a wall of filmstrips, an abstract jigsaw puzzle of frames and sprocket holes. The first section of the film is relatively free of optical printing, mostly developing the relationships between touch, sight, and cinema through pixilation, an

animation technique that was common in Hammer's films of the period. Black-and-white images of Hammer with her camera, sometimes curled up in bed, where she holds it like a lover, are energetically colored and painted, emphasizing the tactility of handmade working processes. At the film's midpoint, an unidentified woman, rendered entirely in fragmented extreme close-ups of her mouth and face, delivers a lecture that serves as the most straightforward articulation of Hammer's theory of touch in any of her films:

Underlying vision is the fact that feeling by touching precedes sight, phylogenetically and ontogenetically, in every human baby. We all touch first, learn to see later, and in learning establish a nearby visual world on a tactile base, giving a double quality to all perceptions of objects, first within immediate reach and later within ultimate or potential reach. All children, and many adults, want to handle a new sight.⁹

Upon establishing the film's theoretical premise, Hammer turns to the optical printer, both to justify the abundance of female bodies in her earlier films and explore the interconnections between touch and sight. Still and moving images of two women having sex are rephotographed in smaller boxes against a black background, which roll vertically as if to suggest that the viewer is looking at a filmstrip. The women's cavorting bodies are cut out and collaged in front of abstract blobs of color. An extreme close-up of fingers massaging a clitoris is rephotographed as it is pulled vertically through the gate, creating a blur that effectively negates any voyeuristic impulse. The film ends with a close-up of Hammer and another woman in profile, joined arm-in-arm. The woman tries to teach Hammer to pronounce a monologue about feminist language in French, which is subtitled at the bottom of the frame.

All of the techniques used in *Sync Touch*, whether achieved with an optical printer or some other means, assert the tactility of the cinematic medium. Hammer's strategy at nearly

every turn is to emphasize the film's materiality, whether through painting, scratching, or printing. In the printed section, sexual intercourse is revealed to be the primary tactile experience, and the freeze frames, blurriness, and other defamiliarization techniques offer a corrective to critics who would view Hammer's earlier films as glorified lesbian pornography. Although the film abounds in images of touching, the general principle extends to the film's production, as well. Hammer found working with the optical printer to be an extremely sensual experience. In making *Sync Touch*, she explains: "I rarely let the device run on its own, so I was touching every frame on the printer. My connection was intimate. I would have my eye touching the eyepiece, my hand on the button, adjusting constantly what the f-stop was going to be. When I'm looking at the frame in the printer, I'm having the feeling in my body, the sensation that this is what I'm going for."¹⁰

The use of the optical printer to explore the phenomenology of touch in cinema, especially conceived as an implicit reconfiguration of Brakhagean aesthetics, soon began to take the form of kinaesthetic landscape studies. In films such as *Arequipa* (1981), *Pools* (1981), *Stone Circles* (1983) and *Bent Time* (1983), the printer becomes a vehicle for integrating Hammer's physicality into the phenomenological experience of a place. As Claudia Gorbman has argued, Hammer's films from the early 1980s strive to uncover the ways in which a corporeal female body exists in relation to the phenomenal world.¹¹ In *Pond and Waterfall* (1982), a subjectivized, first-person camera represents the point-of-view of an unseen swimmer as she moves through an underwater vernal pool. The embodied camera floats past gorgeous, slowly undulating plants and algae, burning fiery orange against the cool blue of the water. The footage has been step printed to increase the sensation of gliding. The camera hovers at the surface of the water, catching

delicate patterns of light as they illuminate the ripples. Later in the film, the camera emerges from the water, but it remains perched at eye level with the waterline bisecting the frame horizontally, as if the swimmer is peeking out of the water. Step printed images of a waterfall veer into abstraction as splashing bubbles collide with the camera, showering the swimmer's face.

In *Pond and Waterfall*, the sensual, experiential quality of swimming through water (the film was shot at Point Reyes National Seashore in Marin County) exists in tension with the distinctive, mechanized rhythm of the step printing, which produces an uncannily hypnotic effect, something close to automated meditation. The fact that the image has been transformed through rephotography could also be understood as another gentle rebuke to Brakhage. In Brakhage's cinema, the camera is often understood to be an extension of his body, with the artist's gestural movement serving to transform his surroundings through a reorientation of consciousness or vision. While Hammer adopts the first-person camera so strongly associated with Brakhage, she subverts the insistence that the viewer adopt his unmediated encounter with a place by introducing a layer of mechanical distance, suggesting that in some cases, mediation actually brings us closer to the rhythms of lived experience.

Hammer's decision to remove the explicit depiction of sexualized bodies from her films was also partly strategic. By the early 1980s, feminist criticism had caught up to Hammer's pioneering work, which some critics felt was too Romantic in its outlook, borrowing idioms from the traditions that it purported to critique.¹² In addition, Hammer was eager to challenge herself to make different kinds of films, especially since she had been pigeonholed by the New York establishment as a "West Coast lesbian filmmaker." For all of these reasons, Hammer packed up

and moved to New York in 1983, increasing her presence in the galleries and closed circuit of avant-garde screening venues to see if it would inform her practice.¹³ Around the same time, Hammer grew tired of the inevitable disruption that resulted from using printers that were not her own, finding that packing and unpacking all of her rolls of film on a daily basis interfered with the flow of the creative process. Consequently, she purchased her own used JK optical printer directly from Jaakko Kurhi.

The portability of the JK printer, which could be dismantled and carried in a backpack onto an airplane, proved to be a boon when Hammer was hired to teach film production at Columbia College in Chicago in 1985. Hammer had recently undergone the emotionally overwhelming experience of putting her 97-year-old grandmother, Anna, into a nursing home. Hammer packed up the rolls of black-and-white Super-8 that she shot of her grandmother in the institution, along with her printer, and set out for Chicago. In her youth, Anna had been a cook for D.W. Griffith, so Hammer found herself taken by the irony of setting up her printer on her new kitchen table and processing her emotional response to such a traumatic event in a medium to which her grandmother had a connection.¹⁴

The resultant film, *Optic Nerve* (1985), became Hammer's most elaborately printed film up to that point, reintroducing an aesthetic strategy that would become central to her use of the printer throughout the next decade: to make her images more expressive by introducing formal manipulations that are appropriate to, and often emotionally or logically determined by, the content. In contrast to pursuing effects for their purely visual qualities or potential for demonstrating technical virtuosity, Hammer revived her earlier strategy of using technique to develop complex visual metaphors for emotional propositions or feeling states. In *Optic Nerve*,

the effects serve the dual function of replicating Anna's perceptual experience, presenting the world to the viewer through her eyes, and representing Hammer's feelings about her grandmother's plight through visual metaphor.

The density of the visual effects in *Optic Nerve* make it difficult to describe. The film has a fuguelike structure, developing a small set of visual motifs that interweave throughout its duration in increasingly complex variations. In the opening section, Hammer establishes the idea that the film will optically align the viewer with her grandmother's damaged sense of sight. We see a succession of similar, nearly abstract black-and-white images on a Super-8 filmstrip as it is pulled vertically through the gate. It quickly becomes clear that the image is a fragmented close-up of Anna's face, cut off at the mouth, with each consecutive frame revealing more of her features. Almost immediately, Hammer begins to alternate rapidly between images of Anna's face, her eye, and a composite of a hospital window with a bucket on a chain hanging in front of it. Each image is onscreen for only a frame or two, often rephotographed through a red or green filter, and sometimes held as a freeze frame, a disorienting legion of effects that mimics the flattened sense of depth, diminished color vision, and involuntary eye movement that results from damage to the optic nerve.

Almost immediately, Hammer introduces the visual motif that will predominate the film: A point-of-view shot of her grandmother as she is pushed in a wheelchair through the labyrinthine institutional corridors of the hospital. Although the original footage is in black-and-white, splotches of saturated red, green, and pink are smeared across the image, which rolls vertically, making it seem as though the filmstrip is having difficulty maintaining proper registration. In the next set of images, color footage of Anna in a domestic setting, perhaps in

earlier days, is submitted to a technically complex series of effects: bisected by a splice mark with rolling images moving in opposite directions on either side, jittery misregistration that recalls involuntary pupillary reflex, superimposition and rack focus, sprocket holes restlessly traversing the surface of the image, and red-and-green strobing that becomes so intense that the colors bleed together to give the viewer the impression of yellow. The electronic score, composed by sound artist Helen Thorington, beeps and thuds with pulsing, mechanical precision.

In the next section of the film, the perception of flatness is further accentuated through rephotography of subsequent generations of footage, which transform Anna's descent into the hospital into a degraded, splotchy nightmare of inaccessibility. Unlike J.J. Murphy's *Print Generation* (1973-74), which uses a similar technique to delve into pointillist abstraction, Hammer's use of rephotography invokes a grainy Impressionism, recalling smudged photos that hover on the brink of legibility, allowing the viewer furtive, sepia-toned glimpses of the ill, elderly faces that line the periphery of Anna's journey. In a subtle parallel, Anna's passage through the hospital corridor is mirrored by footage of another journey, in which she is pushed in her wheelchair through a supermarket. This trip is printed in negative with mottled orange-and-blue patterns of light superimposed over it, almost as though the image was shot through a fishtank. Later sections of the film also feature more legible footage of Anna in her room, sometimes asleep or with a blank expression in her hospital bed, other times holding an egg decorated with a lipstick-adorned smiley face.

While this description makes the film seem almost like a documentary, all of this footage is optically transformed by a virtual catalogue of optical printing and editing techniques, which are deployed one after another in short, rapid bursts. Alternation of black-and-white frames

generates heavy flicker, positive and negative images are biphased, shots of both similar and divergent content are superimposed, decayed through multiple generations of rephotography, step printed for rhythmic variety, and shot through veils of oscillating colored filters. All of these techniques are used in combination, often for only a few frames at a time. The film pushes toward its climax with a final, long pass through the unending corridor, the screen pulsing with such visual intensity that it provokes a physiological response in the viewer, the images reverberating across the retina.

At first blush, this barrage of optical effects may seem haphazardly deployed, but, in fact, *Optic Nerve* stands as one of the most complicated instances of content influencing form in Hammer's filmography. Explaining the structure of her films, Hammer writes:

My films are not formalist; that is, they do not strictly adhere to an a priori rule of form, but instead spring from my intuitive gut experiences and so are phenomenological. The form is directly determined by the content... My films begin in what I call feeling images, an inseparable unity of emotion and thought/idea/image and internal bodily states of excitement.¹⁵

For Hammer, an emotional core in the subject matter of a film dictates formal choices — the thread connecting the artistic decision-making process may appear obscure, but only because it is dictated by an emotional logic, not an intellectual one. Hammer also connects emotion with phenomenological response and “internal bodily states of excitement,” which aptly describes the heightened physiological state experienced by viewers of *Optic Nerve*.

As discussed, Hammer's films from the 1970s tend to link emotional content with formal techniques to extend fairly basic visual metaphors. *Optic Nerve* marks a more complex return to this strategy on the optical printer, most notably by densely layering visual effects to replicate Anna's perceptual experience. As she grew older, Anna suffered from damage to her optic nerve,

or cranial nerve II, which transmits visual information from the retina to the brain. Blind in one eye, Anna lost all sense of depth perception, in addition to experiencing symptoms such as diminished color vision, double vision, blurriness, and irregular saccadic movement.¹⁶ Therefore, the juxtaposition of positive and negative imagery, strobing, superimposition, color filters, grainy rephotography, stuttering rhythms, misaligned framelines, and flattened depth perspective forces the viewer into an embodied identification with Anna, to see the world through her eyes, both perceptually and emotionally.

In addition, the printing techniques serve as metaphors for Hammer's own emotional experience, conveying to the viewer how she feels about saying goodbye to her grandmother. Pushing Anna through the corridors of the hospital, which Hammer has described as "very traumatic," is printed again and again, the increasing fuzziness of the degraded image paralleling the gradual numbing of Hammer's senses.¹⁷ The superimposition of Anna's old life with her new one represents taking stock of a lifetime of memories, not so much on the part of Anna herself, but of her granddaughter, who seems to be poring over the images on the printer, enlarging some details while diminishing others. The intense flicker makes it seem as though the frame is growing, with colors shooting in every direction, which for Hammer serves as a metaphor for her grandmother's death: "It's to say that we don't need to be confined... *Optic Nerve* is also about my grandmother as an angel — as a metaphor — for her spirit leaving the space."¹⁸ In this way, *Optic Nerve* oscillates between representing Anna's first-person experience and Hammer's feelings about that experience.

Following *Optic Nerve*, Hammer applied the same strategy to more emotionally driven material, exploring her sense of displacement or feelings about a powerful new relationship

through increasingly complicated technical effects, most notably the use of traveling mattes.

Made during a period of dislocation while teaching at Evergreen State College in Olympia, *Place*

Mattes (1987) combines the approach of letting content dictate form with Hammer's theory of

touch by exploring loneliness and isolation through a newfound mastery of traveling mattes.

Close-ups of Hammer's hands and feet, interlocking as they caress the frame, are printed in

combination with vacation footage from a trip to Cancún, Mexico. The hands sometimes seem to

grope the vacation shots as they unspool in the background, but at other times, the beach and

ocean are visible through them, as if the images are being projected through a transparent body.

In *Still Point* (1991), Hammer's idyllic honeymoon in Maui with her partner, Florrie Burke, is

contrasted with shots of the homeless on New York streets by combining four Super-8 images in a single 16mm frame, creating four separate interacting boxes. Although Hammer had found the

love of her life, she felt conflicted about the detachment from the world that frequently

accompanies the infatuation stage of a relationship. Although the couple was very happy,

Hammer wanted to address "the fact that we couldn't live in an isolated ghetto anymore. I

needed to bring us out of the comfort of white, middle class life and into the world."¹⁹ As in

Optic Nerve and *Endangered*, the printing effects in *Place Mattes* and *Still Point* are conceived in

relation to the material, as visual correlates for emotional states.

Lurking in the background of all of these analyses is an artistic goal that spans Hammer's

entire career as a filmmaker: to revitalize or recontextualize found or original material in an

effort to highlight that which has been overlooked, neglected, or forgotten. Hammer calls this

strategy of defamiliarizing images and placing them in new contexts, "making the invisible

visible."²⁰ In Hammer's case, this idea has been most thoroughly explored in relation to issues of

gender and sexuality. As such, the optical printer has played a crucial role as a tool for reworking her material. In *Women I Love* and *Double Strength*, superimpositions and freeze frames both parse and celebrate the female body with intimate frankness, insisting upon its athletic, sexual, and kinaesthetic beauty with a rigor that amounts to an act of defiance to patriarchal culture. In *Multiple Orgasm*, Hammer uses the printer to document her own orgasm, honing in on vaginal and facial contractions in an effort to show what we literally cannot see. Later in her career, in films such as *Optic Nerve*, *Endangered*, and *Vital Signs* (1991), Hammer uses more extreme defamiliarization techniques to explore aging, illness, and disease, insisting upon the value of analyzing experiences that are usually unexpressed. In *Endangered*, Hammer imagines herself (and, by extension, her printer) as a figure not unlike Lillian Gish in *Intolerance* (1916), presiding over a world that is breaking into pieces around her.

The connections between recontextualization, the optical printer, and illness are perhaps most evident in *Sanctus* (1990), a found footage film rephotographed from moving image X-Rays shot by Dr. James Sibley Watson in the 1950s that Hammer stumbled across on a tour of the George Eastman House film archive. (As has been discussed, Watson was also an avant-garde filmmaker, building one of the first homemade optical printers for *Lot in Sodom*.) The black-and-white X-Rays quite literally depict that which is normally invisible, presenting remarkably uncanny images of skeletons pouring liquids down their throats or checking their “makeup” in a pocket mirror. More disturbingly, the images also allude to impending death, or at least bodies in trouble, in that the length of each “take” corresponds to length of exposure to radiation, which Hammer found documented in the notes accompanying the X-Rays. Hammer

was instantly moved to rework the material into a film about “a body in need of protection on a polluted planet where immune system disorders and cancer proliferate.”²¹

In order to highlight the tension between physical beauty and its irradiation, Hammer rephotographed the images on her optical printer through a variety of color filters. The rapidly alternating flashes of color make the footage more expressive, infusing the cold, documentary-like aura of medical imagery with a more personal, emotional tonality. In addition to heightened expressivity, Ara Osterweil illuminates the political implications of aestheticizing this material:

By applying a range of her signature de-familiarizing techniques to the footage, Hammer transforms the visible record of disease into a beautiful, but ultimately resistant document of a body in need of protection from external assault. Thanks to Hammer’s interventions, which obscure the anatomical “truth” that the X-ray footage attempts to reveal, the woman’s body can resist yielding its corporeal secrets to the male gaze that has been authorized to interpret them.²²

Osterweil’s analysis persuasively illuminates the relationship between Hammer’s formal choices, which are often intuitive and dictated by the emotional content of her material, and their conceptual ramifications, especially as they pertain to bringing a feminist sensibility to material that originated under patriarchal auspices.

The importance of the optical printer to Hammer’s artistic practice could not be stated in clearer terms than by the artist herself when she writes:

The JK printer was my machine of choice from the mid-80s to 90s. There were only two hundred printers in existence when I bought mine in 1983. It went everywhere with me: San Francisco, Chicago, apartment to apartment in New York City; I even took it to France. It encouraged creative intimacy with its DIY come-on. I could scratch, paint, burn, filter and superimpose frames. I worked intuitively and kept journals of detailed technical notes. I would have an idea, make it happen, and follow whatever idea came next. This process was extremely satisfying and exemplified my creative process. I loved this printer.²³

In this passage, Hammer clearly affirms the physical, almost sensual, relationship that she had with her printer, in addition to noting that the technical procedures involved in optical printing corresponded to her own sense of the artistic process. In using the printer to develop a theory of touch in cinema, introducing expressive manipulation to allow a film's emotional content to dictate its form, and recontextualizing found material to give voice to the marginalized, Hammer belongs to the small group of filmmakers who have adapted the optical printer to their own distinctive ends. In addition, Hammer's use of the printer reveals her body of work to be broader and more expansive than is often assumed.

In this chapter, I have privileged filmmakers who have optically printed their own films, either on machines of their own devising or printers available through institutional affiliation. Other filmmakers achieved similar effects, as well as others, by working with a film laboratory. While the relationships between filmmakers and labs could be contentious, labs often proved essential, not just for processing or printing, but also for more complicated formal procedures. The next chapter will examine this relationship in more detail, highlighting some of the ways that avant-garde filmmakers worked with the lab, either in the role of adversary or collaborator.

¹ Chuck Kleinhans provides an overview of Hammer's career in Kleinhans, "Barbara Hammer: Lyrics and History," in *Women's Experimental Cinema: Critical Frameworks*, ed. Robin Blaetz (Durham and London: Duke University Press, 2007), 167-187. The most substantial feminist consideration of Hammer's work is Jacquelyn Zita, "The Films of Barbara Hammer: Counter-Currencies of a Lesbian Iconography," *Jump Cut* 24-25 (March 1981): 26-30. Ara Osterweil productively nuances the "lesbian filmmaker" tag by exploring three of Hammer's films about aging and illness in Osterweil, "A Body Is Not a Metaphor: Barbara Hammer's X-Ray Vision," *Journal of Lesbian Studies* 14.2-3 (2010): 185-200.

² Kate Haug, "An Interview with Barbara Hammer," *Wide Angle* 20.1 (January 1998): 87.

³ Osterweil: 187-188.

⁴ Hammer quoted in Haug: 91.

⁵ Barbara Hammer, interview with the author, July 7, 2014. All of the information about Hammer's access to optical printers and specific techniques is derived from this interview, unless stated otherwise.

⁶ Barbara Hammer, "Lesbian Filmmaking: Self-Birthing," in Hammer, *Hammer! Making Movies Out of Sex and Life* (New York: The Feminist Press at the City University of New York, 2010), 101.

⁷ Barbara Hammer, telephone conversation with the author, July 7, 2014. Hammer also discusses her theory of touch in Haug: 68-70.

⁸ Hollis Frampton, "Stan and Jane Brakhage, Talking," *Artforum* 11.5 (January 1973): 72-79.

⁹ This passage is derived from Theodora Kroeber, *Alfred Kroeber: A Personal Configuration* (Berkeley, Los Angeles and London: University of California Press, 1970), 267.

¹⁰ Barbara Hammer, telephone conversation with the author, July 7, 2014.

¹¹ Claudia Gorbman, "Barbara Hammer's Recent Work: Body Displaced, Body Discovered," *Jump Cut* 32 (April 1987): 12-14.

¹² Although these attitudes rarely made it to print, perhaps the most stinging criticism is Andrea Weiss, "Women I Love, Double Strength: Lesbian Cinema and Romantic Love," *Jump Cut* 24-25 (March 1981): 30.

¹³ Hammer candidly discusses her ambitions in moving to New York in *Hammer!*, 108-111.

¹⁴ Ibid. See also *Hammer!*, 110, 144.

¹⁵ Barbara Hammer, "Use of Time in Women's Cinema," *Heresies: A Feminist Publication on Art and Politics 3: Lesbian Art and Artists* (1977): 86. Reprinted in *Hammer!*, 85.

¹⁶ See Haug: 72-73.

¹⁷ Ibid.: 73.

¹⁸ Ibid.: 81.

¹⁹ Barbara Hammer, telephone conversation with the author, July 7, 2014.

²⁰ Ibid.

²¹ Hammer, *Hammer!*, 208.

²² Osterweil: 196.

²³ Hammer, *Hammer!*, 207.