Hollis Frampton filming sections of Magellan *at U.S. Steel Company, Pittsburgh, 1974. Photo: Mike Chikiris. Courtesy Anthology Film Archives.*

Hidden Noise: Strategies of Sound Montage in the Films of Hollis Frampton*

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The seductive equation made between silence and the sublime in avant-garde art practices reaches back as far as Ferruccio Busoni's *Sketch of a New Esthetic of Music* (1911), in which the Italian composer pointed to the moment of holds and rests in music as constituting the most profound and "essential nature of art." In a sense, silence for the historical avant-garde was something that could reveal that which was hidden or—to borrow from Heidegger—yet to be unconcealed. In keeping with this model, Marcel Duchamp's "assisted ready-made" *With Hidden Noise* (1916)—a ball of twine, bolted between two metal plates, containing an unknown object added by Walter Arensberg—was one of the first turns toward what Douglas Kahn has called the shift from the site of "utterance to that of audition."[1] This shift would mark language's entrance into Conceptual art practices.

By concealing both the sound source and the preparatory notes that culminated in a particular kind of "noise," Duchamp's enigmatic sculpture already pointed to crucial questions—of "signature," "composition," and "performance"—that informed the historical avant-garde's turning away from purely object-based works toward eventlike forms. In the postwar era, John Cage's *4'33"* (1952) made "hidden" silence the explicit content of the work. Cage's replacement of pitch with duration as a structuring principle shifted the emphasis from musical composition onto sound space. Silence was no longer a "rest" or "pause" or "gap" but unintentional sound, all that entered the space of duration.[2]

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1. Douglas Kahn, *Noise Water Meat: A History of Sound in the Arts* (Cambridge, Mass.: MIT Press, 1999), p. 158. For a reading of event-based work with language that emerges in the wake of Duchamp and Cage, see Liz Kotz, "Post-Cagean Aesthetics and the 'Event' Score," *October* 95 (Spring 2001), pp. 55–90.

2. F. T. Marinetti's *I Silenzi Parlano fra di Loro* (Silences Speak Among Themselves) of the early 1930s arguably set a precedent for Cage's work in its focus on silence as a kind of presence—an epistemological category as important, if not more profound, than sound.

In the world of avant-garde film, however, this radical Cagean silence often became all too easily assimilated into a more conventionally modernist poetics of silence that stressed the phenomenal purity of visual experience over the radical contingency of chance interpenetrations and juxtapositions. For example, for filmmakers such as Stan Brakhage and Andrew Noren, film sound tends to disrupt or taint a purely visual focus or image-based knowledge system.[3] In revisiting the work of Hollis Frampton—especially his sound films *Surface Tension* (1968), *Zorns Lemma* (1970), *Critical Mass* (1971), and *Mindfall* (1977–80)—we are brought back to a moment in avant-garde film history in which the status of the sound film was in question, both in terms of its political valence and its epistemological quest. In fact, Frampton's early (pre-1968) work is primarily silent, as he initially allied himself with the avant-garde position that the "talkies ossified cinema into a standard saleable product."[4] Other antirealist critiques argued that sync sound returned "the film image to the status of an object in nature."[5] For Frampton at this time, to renovate vision outside the straitjacket of Hollywood filmmaking and realist conventions of sync sound required purging film of both sound and language as bearers of overdetermined meaning and syntactic weight.

Yet, by the time he starts work on *Surface Tension*, Frampton is beginning to investigate sound precisely as a means of divesting film of its syntactical burden. Drawing from Sergei Eisenstein's concept of "vertical montage," which proposes that sound can offer a crucial "contrapuntal" or "overtonal" relation to visual montage, Frampton's cinema generates a series of procedures that systematically confound the relations between image and sound, as well as between sound and language. By breaking with a purist impulse to cleanse the filmic image of the corrupting influences of sound and language, Frampton would reinvent film sound not as a tool for a naturalized filmic realism or straightforward narration, but instead as a crucial vehicle for disrupting what he termed the "horizontal axis" of conventional film narrative. Rather than reinforcing the linear, syntactic, meaning-producing properties of narrative film, sound—and indeed, verbal language itself, divested from its subordinate position as sync-sound dialogue and explanatory

3. Annette Michelson describes this moment: "For the history of independently made film of the postwar period is that of a transvaluation of values through which an enforced reversion to an artisanal mode of production (that of the silent, 16mm format) enables the conversion of necessity to virtue"; see her "Frampton's Sieve," *October* 32 (Spring 1985), p. 153. Brakhage's approach to sound (and silence) is far too complex and varied to be accounted for here. Though the major part of his film and theoretical work was indeed concerned with what the "eye" could perceive, he nonetheless thought deeply about sound through his relation to modernist music, paying close attention to works of Olivier Messiaen, Pierre Boulez, Henri Pousseur, and Karlheinz Stockhausen, among others. In "Film and Music" (1966), Brakhage recounts that he "studied informally with Cage and Varese" in order to find a "new relationship between image and sound" and a "new dimension for the sound track." In *Essential Brakhage* (Kingston, N.Y.: McPherson and Co., 2001), p. 78.

4. "Hollis Frampton: An Interview by Michael Snow," in *New Forms in Film*, ed. Annette Michelson (Montreux: Dorbax, 1974), p. 61.

5. Fred Camper, "Sound and Silence in Narrative and Nonnarrative Cinema," in Elizabeth Weis and John Belton, eds., *Film Sound: Theory and Practice* (New York: Columbia University Press, 1985), p. 371.

caption—would give Frampton entirely new models for investigating film structure and montage. In order to rethink the possibilities for vertical montage in the postwar era, Frampton turned to the permutational and operational forms used in experimental music, Minimalist sculpture, and set theory. These heterogeneous models allowed Frampton to envision a filmmaking practice that could resolve or at least complicate the oppositions set up between narrative and nonnarrative filmmaking, synchronous and asynchronous sound, and, ultimately, silent versus sound films.

To understand Frampton's unorthodox use of sound, which perhaps owes more to 1920s Soviet experiments in sound montage than to the 1950s poetics of silence propagated by the critical literature surrounding Brakhage, we need to take seriously Frampton's use of paradoxical systems, drawn from his idiosyncratic reading of that branch of mathematics known as set theory.[6] While Frampton's gnomic pronouncements about systems theory, topos theory, and a host of other mathematical and scientific discourses risk becoming unintelligible (or marginalized) to a generation of film theorists raised on semiotic and psychoanalytic models, a series of quasi-scientific and quantitative models nonetheless allowed him to open up operations of meaning-production beyond what he saw as more normative, "closed" systems like semiotics.

One of the most compelling aspects that set theory offers film theory is that it provides a mode of analysis that uses its own object to study itself: "set theory is not a branch of mathematics but the very root of mathematics from which all branches of mathematics rise."[7] For Frampton, set theory permits the abstract representation of film's capacity to catalog intersecting planes of perception in infinite combinations, allowing him to perceive and articulate the expansive range of film in a way that semiotics could not. Of course, the Saussurean model of semiotics that Frampton had encountered in film criticism of the 1970s also included a metalinguistic function that reflected upon its own language and processes. However, set theory spoke more directly to his ideas about montage, since its principles describe unbounded ways of dividing and ordering materials. In contrast, the communicative paradigm formalized by Roman Jakobson (drawn from the information theory of Claude E. Shannon) proposed a kind of "verbal loop" or circuit that depended on six components in any speech event: sender, receiver, message, code, contact, and context.[8] This relatively "closed" system presented communication as its ultimate object,

6. In their readings of Frampton's project in the 1985 *October* special issue on his work, Allen S. Weiss and Annette Michelson come closest to recognizing the importance of his explorations in set theory for his filmmaking practices. In her essay "Frampton's Sieve," Michelson points to the relationship between Frampton's interest in mathematics and comparative grammar, and the retrograde inversions employed by Arnold Schoenberg and Anton Webern. In her reading of *Critical Mass* (1971), Michelson puts her finger on the pulse of Frampton's systemic method, especially when she implies that "gesture and sound" seem to be what reinforce the semantic engine of much of his work during 1968–73—the critical period of *Palindrome* (1969), *Surface Tension*, *Zorns Lemma*, and the *Hapax Legomena* series (1971–72). Michelson, pp. 160–62.

7. Robert L. Vaught, *Set Theory: An Introduction* (New York: Springer-Verlag, 2001), p. 1.

8. See Roman Jakobson, "Linguistics and Poetics" (1958), in *Language and Literature* (Cambridge, Mass.: Harvard University Press, 1987), pp. 62–94.

whereas set theory offered a world free of intended speech, a world that could account for infinite sets of relations unhinged from a unidirectional matrix.

While Frampton—like his contemporaries Tony Conrad, Paul Sharits, Michael Snow, and Joyce Wieland—was interested in film as a form that could expand as well as reflect consciousness, one of the main thrusts of his work was to pose an epistemology unique to film. In "Notes on Composing in Film" (1975), he calls for this: "We must invent a terminology, and a descriptive mode, appropriate to our object: a unique sign that shall have as its referent the creative assumptions proper to film and to film alone."[9] While he continues to use the language of semiotics as a way of describing his epistemological approach to film, he is also struggling with its limitations: "The compound sign and referent is, of course, a closed system; and all closed systems, as we know, tend to break down and to generate discrepancies and contradictions at their highest levels."[10]

My contention here is that Frampton uses elements of conceptual mathematics in order to open up what he believed was the "closed system" that film semiotics had begun to develop in the late 1960s. Borrowing its title and form from aspects of set theory, *Zorns Lemma* of course became the flagship example of Frampton's use of mathematical procedures in film. However, the underlying principles of this approach to filmic materials structure all of his post-1968 production. Even before beginning work on *Zorns Lemma*, Frampton was thinking of set theory in relation to film, especially in reference to his growing *Magellan* project. In a 1964 letter to his friend Reno Odlin, Frampton explains in somewhat hermetic terms:

> *Zorns Lemma* states that within every partially ordered set there is a maximal fully ordered set. The excernment of the fully ordered set constitutes a cut. Where there are several possible cuts, the set of all cuts constitutes the maximal ordered set. All cuts, the operations whereby they are made, the elements that constitute each of them, the intelligible species of their distinctness one from another, AND the residue of totally unordered elements left outside defined and applied, and all elements identified, the field is not closed.[11]

This passage comes out of a rich exchange from 1958 to 1968 between Frampton and Odlin about what would become *Clouds of Magellan*; the passage begins to suggest some of the profound discoveries or "openings" set theory made possible for film, allowing Frampton to isolate, identify, and exploit film's medium-specific systems, as well as locate the excess of film's own systemic behavior. Frampton's unorthodox reading of set theory may have been inspired by his discussions with Carl Andre. In one of the published dialogues between Frampton and Andre (1962–63), "On the Movies and Consecutive Matters," Frampton

9. Hollis Frampton, "Notes on Composing in Film," in *Circles of Confusion: Film, Photography, Video, Texts 1968–1980* (Rochester, N.Y.: Visual Studies Workshop Press, 1983), p. 123.
10. Ibid.
11. Reno Odlin, "Letters from Framp 1958–1968," *October* 32 (Spring 1985), p. 47.

implies that Andre first introduced him to thinking about the "cut" in film in terms of Dedekind's "cut," a mathematical theorem that characterizes real numbers as "the system of cuts of rational numbers."[12]

> *Frampton:* It seems to me it is a kind of cut, in a sense you have used recently.
>
> *Andre:* Ah, Dedekind. A number is represented as the partition of a line segment. "N" can then be the highest value to the left of the cut or the lowest value to the right of it. An irrational number may even be assigned to the cut itself, which is empty, in the sense that the cut a pair of scissors makes across a piece of paper is empty, but present and evident. By extension one might say that any single perception is a cut across the spectrum of stimuli available to us. The cut itself then is not perceived; it is an operation, not a quantity.[13]

This simple maxim fired Frampton's imagination, especially in terms of his interest in analyzing the "cut" in film as the "cut" in the order of film. For Frampton, Dedekind's construction of real numbers in terms of cuts in the rationals enabled him to think of film editing as a method of passage from discrete to continuous time. Via Andre's radical understanding of sculpture as a kind of cut in space ("A thing is a hole in a thing it is not"), Frampton was able to bring this sense of the cut as a perceptual operation to a complex rethinking of filmic montage. In Frampton's project, words, images, and sound would all be subjected to ordering schemas drawn from an array of conceptual mathematical systems; yet rather than repressing the referential dimension of these materials, Frampton's antilinear, interpenetrating montage would instead propose to use film to record, catalog, and reorder the perceptual world.

Surface Tensions: Membership, Translation, Duration

Made during Frampton's exploration of the possible relationships between set theory and Structural film, *Surface Tension* acts, I will argue, as an early blueprint for his works that explore the formal ordering of film through what he understood as its "membership attributes." During this period, Frampton's experiments in sound, voice, and text helped him isolate and identify subsets of this "membership" by using the complex ordering properties of language as an analogue and counter-system to film's metered form.[14]

12. Shaughan Lavine, *Understanding the Infinite* (Cambridge, Mass.: Harvard University Press, 1994), pp. 10–11.
13. *Carl Andre, Hollis Frampton: 12 Dialogues 1962–1963*, ed. Benjamin H. D. Buchloh (Halifax: Nova Scotia College of Art and Design, 1981), p. 55.
14. Peter Kubelka, beginning in 1956 when he began work on *Adebar*, developed what he called the metric film, whereby "every part of the film is precisely measured and set into relation to the film as a

Surface Tension—a title, like *Zorns Lemma*, that refers to a formal process—is literally the cohesive forces between liquid molecules that form a "film," which, in turn, make it difficult to move an object through a surface. *Surface Tension* evidences Frampton's fascination with Duchamp's and Joseph Cornell's boxes: the film is structured as a triptych, containing three discrete segments; the final sequence is literally a box, a fish tank submerged in ocean water. Each section serves as a kind of "box," collecting a (silent) image track, an unseen sound, a text, and a counting device. Not only does the viewer struggle to establish correlations and relations among these disjunctive tracks, but, in Frampton's boxlike structure, these assembled materials somehow come to substitute for one another—as if image, sound, language, and number could comprise open systems of interchangeable sets. Most notably, by repeatedly measuring the duration of human speech against a quantitative counting device, *Surface Tension* insistently attempts both to correlate and unravel the incommensurable infrastructures of language and mathematics.

The first sequence juxtaposes a moving body with a grid of an electrical clock face—a knowing nod to Eadweard Muybridge's early photographic documentations of human and animal movement measured against gridlike backdrops.[15] An actor, appearing to talk very expressively (we do not hear his words), seems to mimic the changing second-hand numbers on the clock as they fly past him on the left. In a sense, the actor is timing his own performance—he adjusts the clock at the end of each sequence. His muted speech runs alongside the looping numbers, effectively turning his speech into a counting system. Similar to Paul Sharits's *Word Movie/Fluxfilm 29* (1966), in which letters, speeding by in vertical streams, form words in slot machine-like chance combinations, *Surface Tension* here equates the temporality of "talk" with the quantitative measure of clocked time.

Frampton, however, pushes a mathematical reading of film even further than Sharits or Tony Conrad.[16] In a sense, he performs rather than represents film as a mathematical operation. Already in *Surface Tension*, Frampton was experimenting with Zorn's Lemma as a way of thinking about film editing/ordering: every set can be well-ordered, and within each partial set there exists a maximally ordered set. The entire opening section consists of five sets of timed speech acts; two are eleven minutes, two are nine minutes in duration, and the fifth begins at twenty-three

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whole, and that every part of the film communicates with all the other parts." Thomas Korchil: http://www.kortfilmfestivalen.no/arkiv/english/articles/99_PeterKub.html.

15. Frampton's interest in Muybridge was spurred by his own fascination with photography as a proto-cinematic language. Muybridge's interest in mapping sequential movement through photographic time reflected Frampton's own aesthetic inquiries from his black-and-white photography series *Word Pictures* (1962–63) to their transposition into "moving pictures" in *Zorns Lemma*; see Christopher Phillips, "Word Pictures: Frampton and Photography," *October* 32 (Spring 1985), p. 65. Frampton, with Marion Faller, also spoofed Muybridge's *Motion Studies* in his *Sixteen Studies from Vegetable Locomotion* (1975), replacing humans and animals with vegetables.

16. Tony Conrad studied mathematics at Harvard and was a colleague of Frampton and Paul Sharits in Media Studies at SUNY Buffalo during the '70s and early '80s. In Conrad's video, *Cycles of 3's and 7's* (1976), harmonic intervals that would ordinarily be played by musical instruments are represented through the computation of their arithmetic relationships or frequency ratios on a calculator.

minutes and eleven seconds. These five "sets" of timed sequences—all partial sets of incomplete speech acts—become fully ordered sets as they are divided into the logic of their "cuts" according to an underlying numerical schema.

In Frampton's search for an "open system" of selection and combination in and beyond language, sound becomes crucial. For example, the persistent ringing of the telephone in *Surface Tension*—beginning with black leader and continuing throughout the first segment of the film—emphasizes the actor's muted speech. This intrusive nagging ring reminds the viewer that the speech is neither intelligible or accessible: we only hear the ringing phone. Nor is the actor himself cognizant of the sound around him: he never picks up. Nevertheless, we are lulled into the correlation between counting (numbers) and reading (gestures). The repetition of the ring (thirty-seven times) also reiterates the stopping and starting of each sequence—its recurrence, insistence, and eventual end as the film fades to black.

The rest of the film mirrors this structure of repeating sets and, at the same time, implicitly reflects on the metalanguage of "membership" through systems of translation and, as Frampton stressed in his "Notes on Composing in Film," mistranslation or misreading. A voice-over in German by Kasper König describes an unseen film in three parts. The first section recounts the story of a woman from Philadelphia who is invited to go to the south of France for the weekend. König comments on the scene as if recounting his viewing of it on film: "What's so strange is that the color of this first section is the color of an American cigarette advertisement. And I don't think this could have been achieved without the help of professional film/lighting technicians." He continues by describing two other sections of this unseen film: a twelve-minute black-and-white documentary, and a twenty-minute-long sequence shot on water that has a brownish sheen like the color of "chocolate sauce."

The entire voice-over occurs over a relentless montage of single-frame shots of city streets. This montage gives the section a breathless speed, a velocity that is heightened in contrast to the halting, slow-paced rhythm of the German voice-over. König's commentary is cut off by a lengthy, piercingly loud beep that segues us into the "real" third section of *Surface Tension*. The untranslated German speech is used here as another way of staging the "open systems" of interchangeable sets. The stories told in German act as a MacGuffin: the real tension exists between the single-framed frenetic images of an American city and the languidly paced *voice* unfolding against them. Image bytes are measured against sound bytes, and the axiomatic structures of translation and conversion are referred to, but not enacted.

The flashing single-word texts that comprise the third section of *Surface Tension* make it appear as though translation is occurring, but instead the system is cut again: individual words stand in for a missing narrative, some flashing like a marquee over a macabre seascape in which a trapped, mocking goldfish floats midscreen. The triptych structure is again emphasized, as an intertitle announces "Part 1: 20 minutes; Part 2: 5 minutes; Part 3: 5 minutes"—repeating the metastructure of *Surface Tension* through the faux dimensions of a film within a film. Through this series of mismatched sets, *Surface Tension* inaugurates the paradigm for Frampton's experiments

in sound-image configurations. Its puzzle-like structure plays with Duchampian hidden noise: we never see the phone that rings, the German man whose voice we hear, or the obscure industrial machine that buzzes throughout the final section. The film's three "boxed sets" of image, language, sound, and number give the viewer a selection of potentially mutually exclusive nonempty sets, but in each we are given markers of what Frampton terms "a characteristic sensible shape in space and time."[17]

The Perceptual Events of Ordered and Open Systems

> Enclosed is my standard blah. It's not quite up-to-date. You can add, prestigiously, that *Zorns Lemma* was the first really hardnosed badassed feature to be shown in the "regular" screenings in the New York Film Festival. I mean in Philharmonic Hall, not the Alice Tully Freak show. (THAT was funny as hell. I'll tell you all about it in January.) Also, three bits of P. Adams's. The two unpublished are ad copy from the forthcoming new Coop catalog. There are three more articles due out momentarily whatever that means, & Im starting to resent *Zorns Lemma* SLIGHTLY, telling people that I have in fact made 14 other films etcetera.
>
> —Hollis Frampton, letter to Sally Dixon, 1970[18]

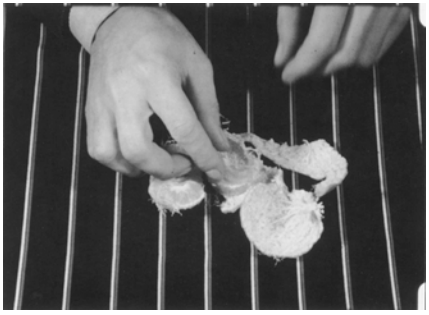
Whereas *Surface Noise* plays with the idea of sets as boxes, *Zorns Lemma* synthesizes two closely related concepts from set theory: the principle of the Axiom of Choice and, as the title suggests, Zorn's Lemma.[19] For Frampton, the two most important ideas that stem from these mathematical assertions include: "partial ordering" (as in the Zorn Lemma) and "well ordering" (a consequence of the Axiom of Choice).[20] In Frampton's cinematic version of the Zorn Lemma, he loosely reproduces the operations of partial ordering through his use of the alphabet. The twenty-six letters provide a "maximal chain" or partial ordering of the larger structure of the film. In mathematics, a maximal chain is partially ordered through some kind of rule, and this rule, in turn, establishes a particular transitive relation between set members, i.e., if $x < y$ and $y < z$, then $x < z$. Frampton plays with this transitivity when he substitutes certain letters and often pairs of letters with images of everyday human activities: a woman talking, someone washing her hands, a child swinging, a

17. Frampton, "A Pentagram for Conjuring the Narrative," *Circles of Confusion*, p. 62.

18. Letter to Sally Dixon, curator of Film and Video at the Carnegie Museum, October 26, 1970. Frampton files at Carnegie Museum, Pittsburgh.

19. The formal statement of the Zorn Lemma in mathematics is: "Let P be a partial ordering. Suppose that whenever C is a chain of P, there exists an upper bound for C in P. Then P has a maximal element." The proof of the Zorn Lemma uses Axiom of Choice. There is also a proof of the Axiom of Choice that uses the Zorn Lemma. Mathematicians often see Zorn's Lemma, the Axiom of Choice, as well as Kuratowski's Lemma (which Frampton actually quotes as Zorn's Lemma) as equivalent.

20. Zorn's Lemma is most easily understood through the Axiom of Choice, which states: "Let C be a collection of nonempty sets. Then we can choose a member from each set in that collection. In other



Hollis Frampton. Zorns Lemma. *1970. Bottom photo: Biff Henrich. Courtesy Anthology Film Archives.*

man dribbling a basketball, hands peeling an orange, someone driving a car. By establishing "limits" within the alphabet through substitution—i.e., *E* is replaced by a woman talking (in double exposure), *G* is substituted with someone washing her hands, *H* is taken over by an image of an anonymous man walking down a Manhattan street—Frampton establishes a "higher order substitution," wherein an image represents a letter, setting both its upper limits (in terms of a partial ordering), as well as revealing the arbitrary relations implied in alphabetic signification. Yet the effect of the substitutions is ultimately to emphasize the structural incompatibility of letters and numbers. The intelligibility of language presupposes a prior cut, just as the arbitrary phoneme cuts into the quantitative image continuum of the film.

While *Zorns Lemma* began with a stilted read of the nineteenth-century Massachusetts Bay State Primer, here Frampton pokes fun at such intended correlations of sound, order, and sense. Narrative, Frampton implies, has been hoodwinked by a deadly, predictable, finite order. The randomized image sequences suggest parallel problems in the way we think about ordering in mathematics and in language. The cardinal numbers with which we count (one, two, three) and the ordinal numbers through which we order events (first, second, third) help us in the way a good, Aristotelian narrative does: they point to location, position, and order of events. They offer a palatable approach to the seeming finite world: a beginning, a middle, an end. In contrast to narrative or even Eisenstein's "metric" montage, set theory offered Frampton a way to think about infinite sets in a "well-ordered" but

nonsequential way.[21] Exposing the pitfalls of measuring cinematic time through finite measures (narrative, number of frames per second), Frampton was able to point to the vertical structures of film montage through both the desecration of the ordinal power of the alphabet as well as to his reflexive play with the "consecutive" frames of film.

Mathematics and Language

Writing—the visual cue of words themselves on the screen—became a central analogue for the "finite series of shots," which, like their counterpart in narrative, exist in "real time."[22] In conversation with Frampton in the early 1970s, Brakhage proposed: "For any finite series of shots ['film'] whatsoever there exists in real time a rational narrative, such that every term in the series, together with its position, duration, partition and reference, shall be perfectly and entirely accounted for."[23] Frampton then transposes Brakhage's "axiomatic theorem for narrative" into a series of mathematical equations:

P = 30 can also mean:
P = P + P + P + P + 6[24]
3 + 5 + 6 + 10 +

By stripping language of its syntactical meaning and position through the use of numbers (and their membership sets), Frampton achieves a measured indifference to linguistic affect and, in turn, dramatic effect. P = 30 can be expanded, as any one narrative can, into any number of divisible representations (such as above). Duchamp had described a similar process in his marginal notes, "algebraic comparisons," for *The Green Box* (1912), in which the ratio *a/b* stands in for the narrative history describing the reception/rejection of his works: *a* representing the work(s), *b* standing in for its (or their) exhibition possibilities/conditions.[25] Duchamp was interested in the notion of ratio to investigate the extended durations

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words, there exists a function f defined on C with the property that, for each set S in the collection, f(S) is a member of S." Let me illustrate the Axiom of Choice with a simple but vivid example: suppose that on the floor in front of you are some buckets. Somehow you know that each of the buckets has at least one object inside it. You could then order it: you could go through and pick one object out of each bucket. (This would constitute a set.) This is easy: the choices are finite. However, the Axiom of Choice says that when there are an infinite number of buckets—a seemingly overwhelming and impossible task—there is still a way to choose (a way to order sets).

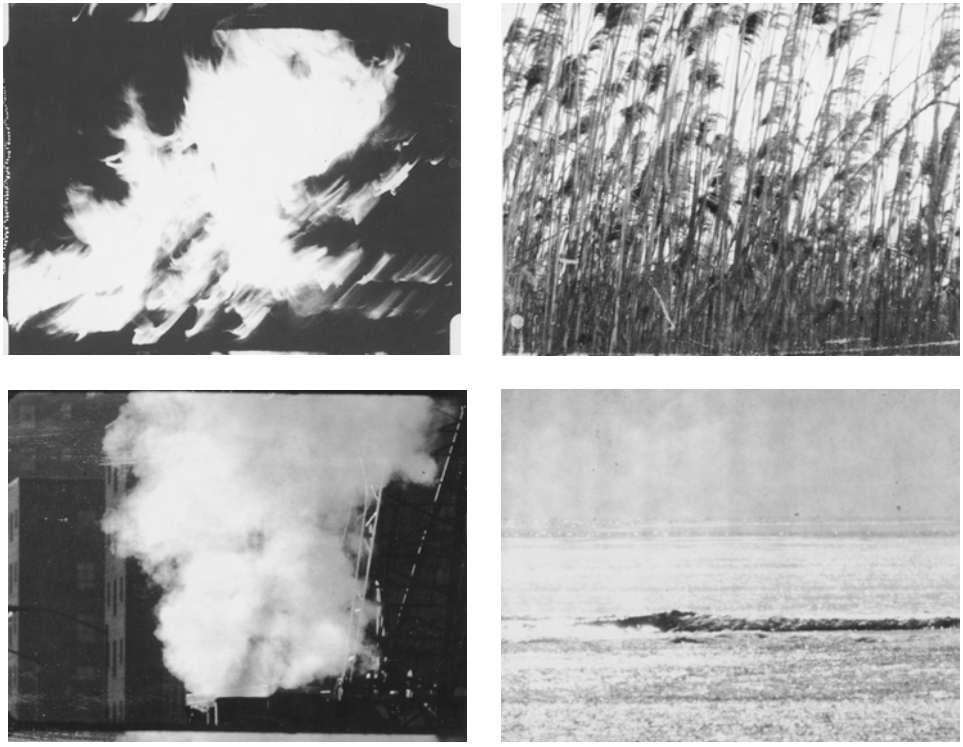
21. In "A Dialectic Approach to Film Form," in *Film Form: Essays in Film Theory* (Harvest Books: 1969), Eisenstein defines metric montage as a technique of film editing in which shots are joined together according to their length, in a formula/scheme corresponding to a measure of music. Eisenstein's *October* (1927) is a classic example of the use of metric montage.

22. Frampton, "A Pentagram for Conjuring the Narrative," *Circles of Confusion*, p. 63.

23. Ibid.

24. Ibid.

25. Marcel Duchamp, "*The Green Box*" [marginal notes, 1912], in *The Writings of Marcel Duchamp*, ed.



Frampton. Zorns Lemma. *1970. Clockwise from upper left: For the letter* X*; for the letter* Y*; for the letter* Q*; for the letter* Z. *Courtesy Anthology Film Archives.*

of reception and display. By using the alphabet as a colossal set, Frampton offers a similar idea of ratio by juxtaposing "found word sets" with two other particular image sets: elemental images, implying recurring structures from nature (fire, water, earth) ,and routinal images, pointing to repetitive everyday durational activities (talking, walking, eating).

The different kinds of filmed durations represented here emerge from Frampton's keen awareness of the relationships between language and iconicity and, ultimately, their embodied forms (talking, listening, reading, writing). The kind of time that counting or listing represents (what Allen Weiss calls the "enumerative") is quite different from the kind of time the referentiality of language represents. Filmic time that can both use and disrupt such durational structures functions, Frampton argues, more algebraically like a "polyhedron": "The existence

Michel Sanouillet and Elmer Peterson (New York: Da Capo Press, Inc., 1973), p. 28. In *Kant After Duchamp* (Cambridge, Mass.: MIT Press: 1999), Thierry de Duve elaborates upon this ratio in terms of its illustration of the exhibition histories connected to Duchamp's *Nude Descending a Staircase* and *Fountain* (pp. 131–43).

of the whole body [suspended, weightless, in a void, with each of its vertices touching . . . the surface of an iridescent imaginary sphere] is utterly dependent upon the integrity of all its facets: every facet represents a story."[26] Thus, Frampton's method of traversing the enumerative with embodied activities creates a chordlike effect: vertical and horizontal axes of language and image intersect and begin to "play" each other in dissonant but contiguous ways. This is a kind of vertical image montage that Frampton will continue to experiment with and fully utilize in his sound work by the time he begins *Mindfall* (Part I of *Magellan*).

In its desire to express an overtonality that is more about temporal simultaneity than language play, *Zorns Lemma* is not unlike Sharits's *S:TREAM:S:S:ECTION:S:ECTION:S:S:ECTIONED* (1968–71). As Sharits would say about *S:TREAM*, the relationship in "simultaneous occurrence and in overlapping structural (or waveform) congruencies" occurs "not in the work but in perception itself"—in an almost indiscernible, continuous passage of both auditory and visual events.[27] Both films register a series of perceptual events, or as Frampton had imagined for *Magellan*, "an inventory of modes of perception and [the] classification that's involved."[28]

Paradoxically, the veritable flood of words that take over Frampton's work during this period (reaching its apex in the filmed script for *Poetic Justice* [1972]) represents Frampton's impulse to drain both the image and speech of their affective, prescriptive relationships to representation. Frampton's "open allusion" to alphabetization in *Zorns Lemma* stresses his use of letters as a system of random ordering, so that he could "avoid imposing [his] own taste and making them into little puns."[29] Writing, and the "lifting" of found words off signs, billboards, and graffiti (in *Zorns Lemma*) unhinge words from their subordinate position as synchronous accompaniment to image, while disrupting their static position as signs of articulated speech.

Instead of scratching directly on the surface of the film as Sharits does in *S:TREAM*, Frampton uses the momentum of editing, producing a series of interference patterns that produce a vertical structure on the horizontal sequencing of the alphabet. However, this systematic interruption is not necessarily about disruption, but instead sharpens the focus on perception as a nonlinear process. In this way, *Zorns Lemma* was a training ground for *Magellan*, in which "the parts of the whole thing, instead of following one another linearly, are constantly interpenetrating."[30]

26. Frampton, "A Pentagram for Conjuring the Narrative," *Circles of Confusion*, p. 67.
27. Paul Sharits, "—UR(i)N(ul)LS: TREAM: S: S: ECTION: S: ECTION: S: S: ECTIONED (A)(lysis)JO: 1968–70," *Film Culture* 65–66 (1978), p. 16.
28. Frampton in Mitch Tuchman, "Frampton at the Gates" [interview], *Film Comment* 13, no. 5 (1977), p. 58.
29. Frampton in Peter Gidal, "Interview with Hollis Frampton" [1972], *October* 32 (Spring 1985), p. 94. In 1970, the same year as Frampton's *Zorns Lemma*, Carl Andre used an alphabetical ordering of chemical symbols: Al, Cu, Fe, Mg, Pb, and Zn for his floor installation of *37 Pieces of Work* (Guggenheim Museum), which consisted of an array of foot-square plates of aluminum, copper, steel, magnesium, lead, and zinc. "Each metal was used alone to constitute one 36 unit square, then alternated checkerboard fashion, with each of the other metals, thus demonstrating the possible permutations." David Bourdon, *Carl Andre Sculpture 1959–77* (New York: Jaap Rietman Inc., 1978), p. 32.
30. Frampton in Tuchman, "Frampton at the Gates," p. 58.

A kind of ludic volley between images is echoed in the random play between words. Similar to other artists during this period, like Vito Acconci, Dan Graham, and Bruce Nauman, Frampton uses the performativity of writing, speech, and gesture in what Benjamin H. D. Buchloh elsewhere describes as "total opposition to traditional definitions of theatricality."[31] Thus, Frampton rethinks the phenomenological project in terms of a theatrical position that dissolves conventions of dramatic narrative by reducing speech to noise and plot to structural repetition as he does in *Critical Mass*. At the end of *Zorns Lemma*, Frampton employs the voices of six women reading a text by medieval theologian Robert Grosseteste punctuated, or made rhythmic, by the constant click of a metronome in one-second takes. Here the mathematical ordering principle turns performance into operation without losing the performativity of its parts. The numerical performs the linguistic and the imagistic quietly, sparingly, and not unironically: "When the number one of form and the number two of matter and the number three of composition and the number four of entirety are added together, they make up the number ten which is the full number of the universe."[32] The mechanical, almost computer-generated sounding voices that accompany two figures walking out toward the snowy horizon signal a strangely re-embodied, mathematical analysis of the film's construction.

While Frampton is building a case for the metahistory of film as a catalog of phenomenological, sensory perceptions, "the total historical function of film, not as an art medium, but as this great kind of time capsule," he is also occupied with its ability to perform language beyond what he describes as the "puritanical, authority-ridden, death-saturated" ideologies of American Midwestern culture, another kind of linguistic metahistory of which he and his contemporaries were products.[33]

Streams of Utterance in Critical Mass

Writing, for Frampton, is "a kind of talking."[34] In *Critical Mass*, he uses audio design to write his sound track in a circuitous form so that sound and film function

31. Benjamin H. D. Buchloh, "James Coleman's Archeology of Spectacle," in his *Neo-Avantgarde and Culture Industry: Essays on European and American Art from 1955 to 1975* (Cambridge, Mass.: MIT Press, 2000), p. 153.
32. Text loosely adapted from Robert Grosseteste's *On Light or the Ingression of Forms* (thirteenth-century manuscript) by Frampton for *Zorns Lemma*. In "Frampton's Lemma, Zorn's Dilemma," Allen S. Weiss focuses on Grosseteste's "theology, ontology, and cosmology of light," but Grosseteste was also a mathematician, writing on geometry and optics as well as astronomy. Brakhage, however, was more interested in Grosseteste's focus on light than Frampton. At the 1974 Canegie Institute premiere of *Text of Light*, he paraphrased Grosseteste's *On Light or the Ingression of Forms*: "All that sense can comprehend, is Light: because it partakes of that which it is." Arthur Cantrill, "The Text of Light," *Cantrills Filmnotes* 21/22 (April 1975), pp. 32–53.
33. Gidal, "Interview with Hollis Frampton," p. 98.
34. Ibid., p. 99.

in "symmetrical orbit around one another."[35] While many of his other works pay homage to early cinema or proto-cinematic phenomena, *Critical Mass* serves as Frampton's most sustained critique of the advent of the Hollywood "talkie": "It was not simply sound, then, that threatened to destroy all the 'present formal achievements' of montage, but the dubious gift of speech, the Prime Instance of language, the linear decoding of the terrain of thought into a stream of utterance."[36]

Avant-garde directors from Eisenstein to Brakhage, Frampton argues, manifest a propensity for logophobia: the word threatened to sully the ideal form of the image. Embracing the "corrupting" capacities of language, Frampton uses the spoken word in *Critical Mass* as he did the written script in *Poetic Justice*: it functions as a virus, transmutating, morphing, paralleling, and infiltrating the graphic rhythms and dimensions of the image. As Michelson notes, "Frampton saw his task as the devising of a rigorous scheme for the organization of the material such that it would still 'rhyme' in various ways with the enacted incidents."[37] Though Frampton is influenced by Eisenstein's dictum that sound should be in "distinct nonsynchronization" with images, he is also critical of Eisenstein's fear that language would somehow corrupt the image, or as Eisenstein charged, "retard its tempo."[38]

According to Frampton, the only kinds of systems that would deter language's inertia-ridden influence on the moving image would have to be "a universal natural language," or a "perfect machine."[39] The former he saw in mathematics or science, the latter in the apparatus of film. *Critical Mass* addresses the problem of language in terms of its potential to stagnate the cinematic soundtrack into what he derides as an "information channel" for montaged images.[40]

By staggering successive shots of male and female speakers so that they collide (one hitting right before the other has finished), Frampton achieves through analog editing techniques what would come to be known as digital delay. The overlapping words cause a dislocation between the action and the sound of speaking. As in the opening of *Zorns Lemma*, Frampton begins *Critical Mass* in black with voice-over, but a tripping, doubling effect is already in action:

> just fine, just fine/where the hell were you?/I was just away/away where?/away where?/you know, ha/you know, ha.

While in the first section of the film, relationships between the speaking subjects and language remain somewhat intact, by the end of the film gendered as well as syntactical arrangements of speaking dissolve: the female speaker's voice seems to come from the male speaker (and vice versa) and often, especially during the sections where the image goes to black, their voices merge into a glossolalia of phonemic utterances.

35. Hollis Frampton, "Film in the House of the Word" [1981], *Circles of Confusion*, p. 85.
36. Ibid., p. 82.
37. Michelson, "Frampton's Sieve," p. 163.
38. Frampton, "Film in the House of the Word," p. 84.
39. Ibid.
40. Ibid., p. 85.

Frampton. Critical Mass. *1971. Courtesy Anthology Film Archives.*

Thus the enacted "script" in *Critical Mass* (like the written script in *Poetic Justice*) acts as an extension of the recording device of film: its narrative meaning has universal significance, a discursiveness that functions regardless of its distinctive detail or context. Brakhage confirms this, when he notes that *Critical Mass* "is quite universal, it deals with all quarrels (those between men and women, or men and men, or women and women, or children, or war)."[41] This kind of script acts, for Frampton, almost like an optical sound track, its visual cues marking variations in, rather than illustrations of, sound.

Recording Machines: Writing, Photography, Film

The dialectical relationships between writing and image initiated in *Zorns Lemma* (which was first imagined as a photographic project) are taken up even more explicitly in *Nostalgia* (1971) and *Poetic Justice.*[42] The possible relations between the recording devices of photography, film, and writing were already being theorized by Frampton in terms of image-sound relations in 1964 when he wrote to Odlin about his thoughts for *Clouds of Magellan*:

41. Stan Brakhage, *Film-Makers' Cooperative Catalogue No. 7* (New York: Film-Makers' Cooperative, 1989), p. 171.

42. As Phillips notes, "His series of black-and-white photographs of environmental words, *Word Pictures* (1963–63), served as the germinal idea for *Zorns Lemma*; *Nostalgia*, which features the burning of twelve of Frampton's early photographs to the accompaniment of an asynchronous, mock-confessional, spoken narrative, can be seen as the filmmaker's interim judgment on his prior incarnation as a still photographer." Phillips, "Word Pictures: Frampton and Photography," p. 65.

> A constellation is an "image." The image may be nothing more than a roughly isosceles triangle, but there it is. But that image is not a whole and literal DRAWING, it is a group of elements that we construe meaningfully, as we construe the letters b-i-r-d, a constellation of unrelated sounds, as the general name of feathered flying warmblooded egglayers. Or, a-b-c-d-&c as the alphabet, our name for an arbitrary grouping of a small number of symbols standing for a rather larger number of the sounds a human throat can make.[43]

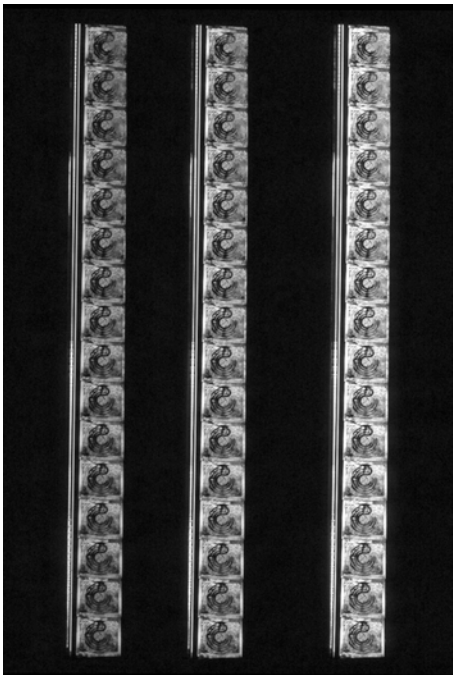
Language (and its substructures of alphabet, phonetics, syntax) helped Frampton figure film's relationship to legibility, while photography and its historical concerns with "selection, collection, and classification" propelled Frampton's desire to empty film of its diegetic affect.[44] In photographing a "shooting script" for *Poetic Justice*, Frampton achieves a parody of narrative filmmaking, as well as a complex rendering of the relationship of word to image. An inversion takes place: words act as instructional images that we only "see" through reading the text that appears, as written shot directions, on the screen. "You," the spectator/reader, become interpolated, at once, as director, camera operator, and actor: "you lower a camera from your eye," "your face in profile, squinting through camera."

Inspired by Edward Weston's approach to the photograph as that which, like language, is "doubly identified—once with itself, and once again with its referent," Frampton calls for a stripping of film, the visual image or the linguistic artifact to their own "proper set of specifications."[45] What the works of Samuel Beckett, Jorge Luis Borges, or Alain Robbe-Grillet have in common with photography, implies Frampton, is their ability to "strip the Thing that is being said, the referent of the discourse" so that their objects (words, images) refer only to the materiality of their operations.[46] Similarly, in *Poetic Justice*, causality and temporality have been dispossessed from the text (as we read it) and our viewing takes place in a time that is "explicitly and entirely disjunct from the atemporality of the text."[47]

As the hand holding a still photograph would interrupt the filmic space in *Poetic Justice*, the photographs burning over the stove (accompanied by the synchronous voice-over out of chronology, etc.) in *Nostalgia* signaled a collapse of spatiotemporal relations in the world of 2-D forms. Frampton's use of voice-over for *Nostalgia* begins the project of inscription that would continue in *Poetic Justice* and other photographic/text projects of this period that explore the disjuncture of word-image relations. Bill Simon, writing in 1975, claims that in *Nostalgia*

> there is always a gap between what we imagined from the spoken commentary and the actual photograph. Frampton induces an imaginative

43. Odlin, "Letters from Framp," p. 46.
44. Phillips, "Word Pictures," p. 64.
45. Frampton, "Impromptus on Edward Weston: Everything in Its Place," *Circles of Confusion*, p. 142.
46. Ibid.
47. Ibid., p. 143.



Frampton. Nostalgia. *1971.*
Courtesy Carnegie Museum, Pittsburgh.

> visualization on our part and then jolts our imagination by showing us the real image. That jolt amply demonstrates the inadequacy of words to deal with images and the privileged status of an image.[48]

However, rather than privileging the "status of the image" over words, Frampton strives throughout his work to reveal how image-based knowledge is intimately, often brutally tied to systems of language.[49] The interpenetration of these meaning-producing systems is what he strives to reveal; thus he moves from examining the relations between text and image to a study of vertical sound-image arrangements.

Toward Vertical Sound Montage

> Montage is not something I invented but something I inherited. I am pursuing suggestions latent in montage culture for 50 years. In these

48. Bill Simon, "The Films of Hollis Frampton," *New Forms in Film*, p. 56.
49. Michelson underlines how Frampton achieves a kind of "suspended violence" through his sound editing practices in *Critical Mass*: "The complex polyphony of the dissociative cutting projects the uncontrollable chain of recrimination, of violence suspended, rather than arrested, unresolved, irresolvable" ("Frampton's Sieve," p. 163). A similar project is taken up by Martin Arnold in *Passage à l'Acte* (1993), in which "noise and language become sound events of equal value and importance"—an aggressive, stuttering sound track that underlines the hegemonic narratives of white masculinity in Hollywood films of the 1950s and early 1960s. See Scott MacDonald, "Martin Arnold" [interview], *A Critical Cinema 3: Interviews with Independent Filmmakers* (Berkeley: University of California Press, 1998), p. 360.

> sections, I am tilting at the windmill of linearity. I am concerned with vertical montage.
>
> —Hollis Frampton, 1980[50]

In the unfinished *Magellan*, begun in 1972, Frampton had hoped to construct 360 one-minute films with sound. However, only *Cadenzas* (1977–80), *Mindfall* (1977–80), and *Gloria!* (1979) have sound, and a large part of the project remains unfinished, due to Frampton's untimely death in 1984.[51] In this never-to-be completed masterwork, vertical montage was to be the main strategy for achieving the incessant movement of "interpenetrating" structures of the metahistory of film, replete with all four solstices and equinoxes, as well as the metaphoric adventures of Ferdinand Magellan's circumnavigation of the globe.

Sound—especially Frampton's goal of achieving a vertical sound montage—was to be of central importance in his pursuit of what he saw as the "largest possible inventory of modes of classifying and perceiving experience" (a project begun in *Zorns Lemma*).[52] In a sense, Frampton approached sound as an incomplete project in cinema history, which was lost after the advent of the "Talkies." The complexity of this project, Frampton believed, was lost again after Eisenstein's and Vertov's studies in film sound were curtailed by "the extreme pressure of Stalinist 'restoration.'"[53] Especially compelling for Frampton was Eisenstein's focus on the simultaneity of radically disparate elements of sound and image:

> From the viewpoint of montage structure, we no longer have a simple horizontal succession of pictures, but now a new "superstructure" is erected vertically over the horizontal picture structure. Piece for piece these new strips in the "super-structure" differ in length from those in the picture structure, but needless to say, they are equal in total length. Pieces of sound do not fit into the picture pieces in sequential order, but in simultaneous order.[54]

In *Birth of Magellan: Mindfall* (Parts I and VII), the sounds that accompany shots of "lush rainforest flora and fauna, oceanscapes" in Puerto Rico are "mechanical"; they tend to be associated with communication—teletypes, printing presses, and telephones.[55] Frampton, in a sense, revisits the mechanical nature of sound invention and interfaces it in an ironic relationship with the primeval land of the "new world" as "discovered" by Columbus on his second voyage.

50. Frampton in Amy Taubin, "Tilting at Linearity," *SoHo Weekly News* (1980), p. 58.
51. Brian Henderson, "Propositions for the Exploration of Frampton's *Magellan*," *October* 32 (Spring 1985), p. 133.
52. Tuchman, "Frampton at the Gates," p. 58.
53. Frampton, "Film in the House of the Word," p. 81.
54. Sergei M. Eisenstein, *The Film Sense*, trans. and ed. Jay Leyda (New York: Harcourt Brace Jovanovich, 1974) p. 78.
55. Bill Simon, "Talking about *Magellan*: An Interview with Hollis Frampton," *Millennium Film Journal* 7/8/9 (Fall–Winter 1980–1981), p. 16.

Reminiscent of his montage method in *Zorns Lemma*, Frampton builds a catalog of sound-image relationships and then begins repeating them in syncopated, hurried rhythms—suggesting their interchangeability (sound for image and vice versa), as well as their collision. Noticeably absent is the stark, Minimalist sensibility of his earlier films, which contributed to his aesthetic experiments with set theory and drew crisp lines around images (which were often words), using sound to repeat the systemic quality of sharply metered cuts of footage. Instead, with the agility of a Marie Menken-like roving camera eye on foliage, Frampton creates an almost lyrical sense of an Edenic landscape: violets, lilies, water, rocks, animals, succulents, trees, sky. This arcadian world, however, is intermittently interrupted with television or even computer-like commercial wipes: bright, graphic diagonals and dizzying iris shots that separate many of the images in both parts of *Mindfall*. Matching the rude, funny, graphic wipes, Frampton's sound track bursts with unpredictable segments of cartoon sounds, often blasphemously juxtaposed against churches or temples.

Missing, often, from analyses of *Magellan* is Frampton's charge that this metahistory is also intended to be a comedy.

> In an interview with James Joyce that took place in the '30s, after *Ulysses* had been in print for several years, Joyce remarked that after all this time, no one has yet noted that the book was funny. I consider the *Magellan* cycle a comedy.[56]

And yet, Frampton had somber, grandiose aspirations for *Magellan*. His goals included the rationalization of the history of art, resynthesis of the film tradition, making malleable the sense and notion of time in film, examining the function of the written and spoken word in film, rethinking the synesthesic "problem of sound in film," making "rhetorical" or technological options available to film (digital processing, video synthesizers), and revealing how film is "an epistemological model for human consciousness."[57]

The tension between the comic and the systemic in Frampton's later films is part of the larger project of attempting to create a vertical montage structure. Sound functions as a central part of this project, insisting upon the "moveability, the portability, the malleability of the montage piece."[58] In *Magellan*, sound functions much as image had functioned in *Palindrome* (1969). We hear locomotives, water, cars, bowling. Then we hear the same in reverse: bowling, cars, water, locomotives. As Brian Henderson notes: "*Palindrome* would maintain its identity shown backwards—not only in reverse order but upside down."[59] It is this kind of palindromic sound montage that Frampton is exploring in terms of how it can create vertical as well as horizontal relationships with cinematic images and other audio constructions.

56. Taubin, "Tilting at Liberty," p. 58.
57. Hollis Frampton, "Statement of Plans," *Magellan* grant proposal, ca. 1971, Frampton files at the Carnegie Museum, Pittsburgh.
58. Bill Simon, "Talking about *Magellan*," p. 17.
59. Henderson, "Propositions for the Exploration," p. 137.

As Michelson suggested, the palindromic not only stems from literary models, "but just as surely from Frampton's experience of serial composition, employed by Schoenberg and Webern."[60] Frampton was most likely aware of Morton Feldman's post-serial composition of the same name, *The Straits of Magellan*, from 1961, in which Feldman creates a similar tension between what he calls "simultaneous sounds" and "successively played single notes."[61]

Although Frampton is constructing sound within the frame of Eisenstein's and Vertov's calls for an asynchronous relationship between sound and image, he is also reexamining the complexity of synchronous sound, or as he put it: "simultaneous availability of essentially covalent chains of causal linkage."[62] As he explains in a 1980 interview with Bill Simon, "The most unsettling [issue about film sound] concerns the notion of sync-sound itself. Because sync-sound, as we have it in the movies, is an absolute artifice that is concerned not with generating but with excluding synchronous sound."[63] The routine of comedy, with its expected laugh lines, gag effects, or subtle, ironic twists, makes a travesty of the purported technical agility of synchronous sound technology. Canned laughter can be turned on or off with ease, a line can by synched with a laugh, or a shot–reaction shot can serve the gag-laugh sequence. As Frampton would put it, "synchronicity is a lot more obscure, a lot less clear" than the movie industry's plastic use of it suggests.[64] In *Magellan*, Frampton camps the industry of sync sound: cactus prickers purr with the sound of a pneumatic hammer, rivers honk as if they're busy urban streets, phallic towers topped with flaming torches are accompanied by five minutes of canned laughter.[65]

Found Noise

If Ezra is my father, then Rrose Selavy is my mother.

—Hollis Frampton, 1971[66]

From his earliest micro-experiments in *Surface Tension* to his grand project, *Magellan*, Frampton's studies in sound montage were permeated with a sense that sound—if done right—could transform the cinematic project even more profoundly

60. Michelson, "Frampton's Sieve," p. 160.
61. Feldman, http://swipenet.se/sonoloco9/mode/feldman4.html.
62. Simon, "Talking about *Magellan*," p. 16.
63. Ibid., p. 17.
64. Ibid.
65. Even earlier, in *Special Effects* (1972), Frampton is experimenting with *Magellan*'s ironic, humorous relationship to synchronous sound. The sound track, which was generated entirely on a Buchla synthesizer, screams like a sci-fi thriller over a cartoonlike square made of dotted lines, threatening to float off the screen (and acts as its nemesis, mirroring the limits and possibilities of both the cinematic "frame" as well as the projection screen). It also demonstrates the tenuous relationship sound has to the visual, making a vaudeville out of what Michel Chion has called the acousmetre (disembodied voice) and sound's ability to float on and off the screen or to be everywhere at once.
66. Letter to Sally Dixon, August 22, 1971. Frampton files at Carnegie Museum, Pittsburgh, n.p.

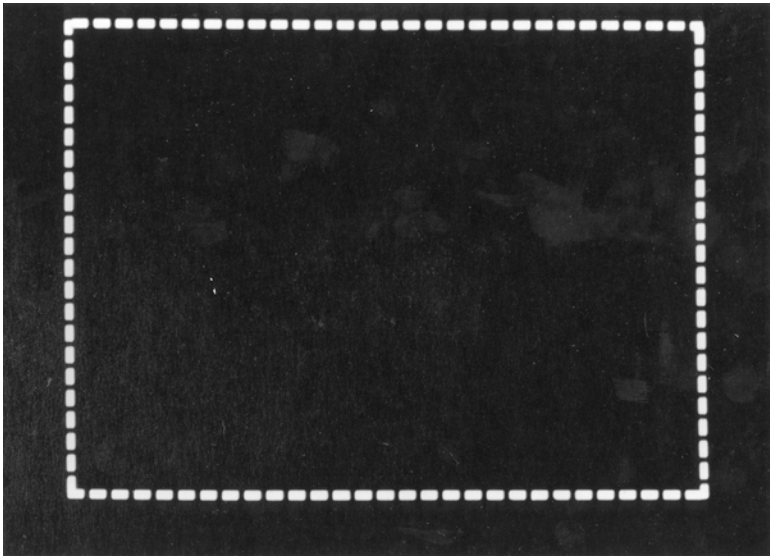
than phenomenological silence. *Palindrome* is Frampton's *Hidden Noise*. As Michelson has suggested, Frampton's systemic montage projects were as deeply related to his lifelong literary interests in the great open systems of Pound, Joyce, and Stein as they were to the serialists and post-serialist composers, or, most importantly, to the experimental music of John Cage.

Finally, Frampton saw *Magellan*, especially *Mindfall*, as having an intimate relationship to Duchamp's layered projects, especially *The Bride Stripped Bare by Her Bachelors, Even (The Large Glass)* (1915–23) and its written component, *The Green Box* (1912–34). Frampton invokes Duchamp's *Large Glass* as early as 1964 in a letter to Odlin in order to explain how he imagines his master project, *Magellan*: "Both *MAGELLANS* to be rather kits along the lines of *BRIDE/BOXES*, etc., that is, the pieces to be accompanied by their working-drawings, macquettes, etc. *CLOUDS* in particular will need a substantial atlas or installation manual."[67]

In an informal note, almost a doodle, found at the Carnegie Museum Archive, Frampton draws a rectangle around the word *Magellan* and, next to it, writes: "green box." Then, he writes "Mindfall," underlines it, and next to it writes "Sound," and circles the latter several times.[68] In a sense, Frampton sees the sound in *Mindfall*, and eventually the larger *Magellan* project, as enacting a similar turn that Duchamp's written notes in the *Green Box* would do for *The Bride Stripped Bare* (Duchamp's writing on *Hidden Noise* would serve similar purposes): it would translate

67. Odlin, "Letters from Framp," p. 45.

68. Bill Judson, former film and video curator from the Carnegie Museum, believes that if this doodle is not from Frampton directly, it was made by him during a phone conversation with Frampton (in October of 1978), as per Frampton's description of his plans for further development of *Mindfall* and the larger *Magellan* project.



Frampton. Special Effects. *1972. Courtesy Anthology Film Archives.*

and extend the visual into a system of linguistic and mathematical terms. This system, like Frampton's film projects, contained horizontal and vertical axes, which Duchamp described in the *Green Box* as slowly losing their positions to one another: "there is gradually less differentiation from axis to axis, all the axes gradually disappear in a fading verticality."[69] For Frampton, Duchamp takes Eisenstein's notion of vertical montage and turns it on its head: the inscriptive of the visual performs itself underneath an open system. Through his experiments in sound montage, Frampton discovers the horizontal axis slowly turning into the vertical—always already there in audible rotation.

69. Marcel Duchamp, "*The Green Box*," p. 29.