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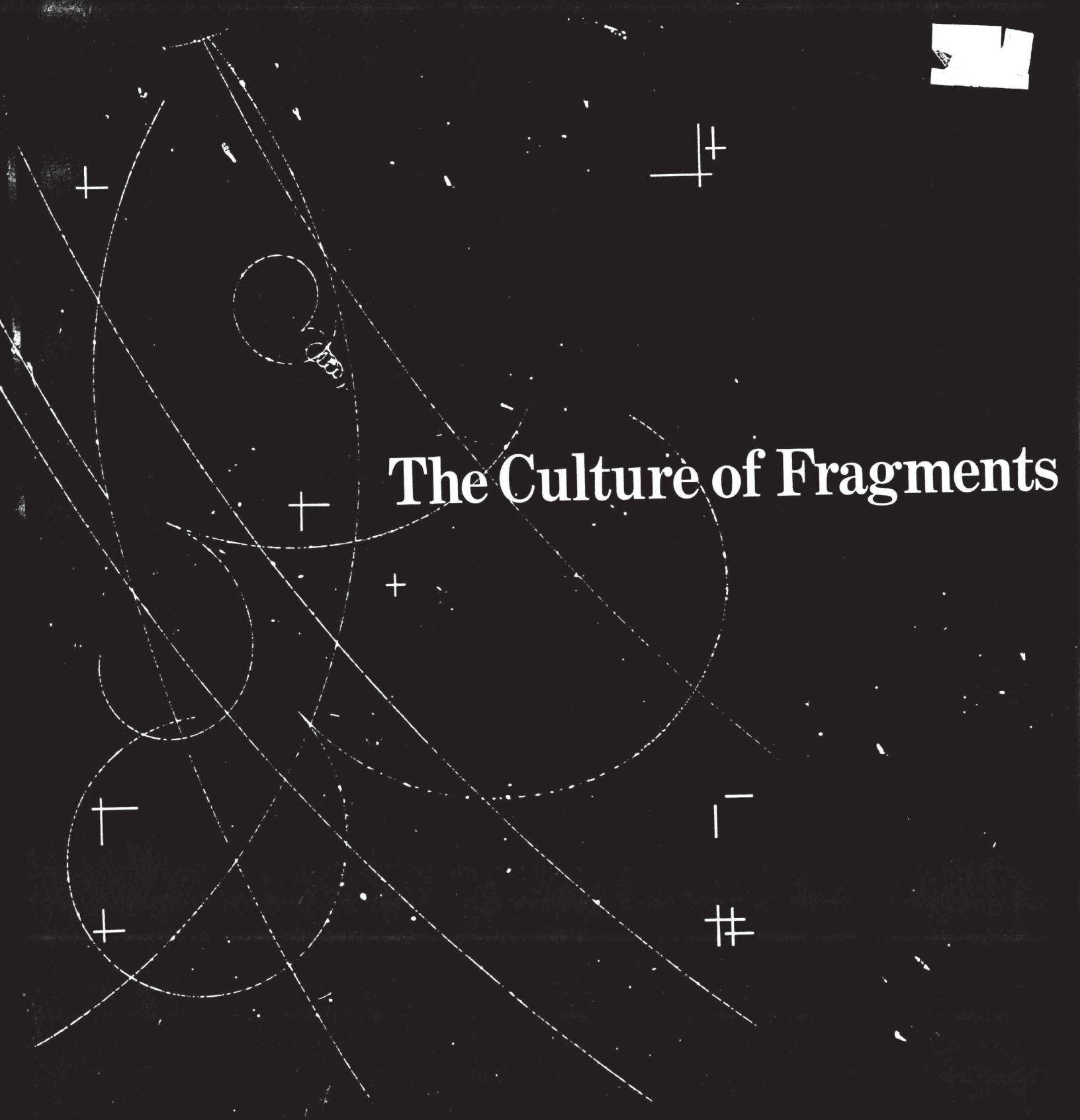

The Culture of Fragments

Notes on the
Question of Order in a
Pluralistic World

The Question of Unification and the *Musicalization* of Art

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The idea of *unification*—by which is meant the merging of artistic disciplines into an original and inclusivist artform—has considerable potentials in the evolution of artistic discourse. It would introduce, on the one hand, new *structures of play* and fertile working hypotheses to further experimentation, on the other, a search for higher forms of *techne*—both in the invention of methods and the creation of new media. Furthermore, from the point of view of cultural analysis, the idea of *unification* reflects a postmodern desire toward inclusivism, away from the impoverishment of modern specialization and the compartmentalization of its aesthetic experience.

In the light of these considerations, the following essay will explore some of the assumptions behind the idea of artistic *unification*. After a brief discussion of *dynamic* vs *static* expression—and the difficulties involved in creating architecture by analogy with music—the essay will address the more general issue of *musicalization* in the visual arts through the development of a *diachronic medium*. A brief survey of early avant-garde film will lead to concluding remarks on the impact of the advanced technologies as the definitive *diachronic* instruments for the historical development of *synesthetic* art.

"Tatlin, Rodchenko, Gabo, Moholy-Nagy, Fontana, Duchamp, Kandinsky, Mondrian, Pollock, and twice that many more artists of this century testify to the drive toward dynamic organization of energy and force in Art and toward the ephemeralization of the art object in painting and sculpture. The past decade has seen that direction lead many artists to cinema, exotic technology, and experiments in cybernetics. Yet it has passed generally unnoticed that this preoccupation of the last one hundred years has been toward a musicalization *of visual art. For the urge to produce abstract architectonic structures that possess fluid transformability in visual space is no less than a grand aspiration toward music's double in the visible world."*

—John Whitney

Dynamic versus Static Expression and the Problem of Musicalization in Architecture

The issue of *musicalization* in architecture rests on the nature of *synchronic* versus *diachronic* expression.

Music, the ultimate *diachronic* artform, derives its vitality from *change* and from its continuous permutations in the medium of time: it conveys emotions diachronically. Architecture, on the contrary, derives its artistic value from the relationships of structural and volumetric parts fixed in the medium of space: it is inherently *synchronic.*

Because of the antithetical nature of the two artforms a clarification of what is meant by synthesis becomes imperative. Two approaches in the creation of architecture by analogy with music suggest themselves on the basis of the concepts of *synchrony* and *diachrony.*

The Synchronic Approach

The *synchronic* approach reduces music to its architectonic dimension outside of time. Music is seen as a *synchronic* structure governed by mathematics. Structural relationships are then extracted from music and applied to architecture.

A rich tradition is documented in the literature of architecture. In the Renaissance, for instance, ideas revolving around the concept of "frozen music"—in itself a phrase invented by 19th century romanticism—were linked to a Platonistic metaphysics of universal harmony of which all the artforms where meant to be the expression.

Because of the abundance of literature and the well understood nature of the analogy the *synchronic* approach will not be further explored in the present discussion.

The Diachronic Approach

In the *diachronic* approach time becomes the medium; the reading of architecture unfolds through time. Architectural space is perceived sequentially in discrete time increments and experienced diachronically through the observer's movement. The analogy by *diachrony* involves a relativistic reversal of positions where the observer is required to move in order to "set" the architectural composition "in motion."

No established tradition exists in architectural literature. However, recently developed theories of "optical flow"—in the young field of time-varying image and motion analysis—could provide a theoretical framework. Primarily for the purposes of simulation (the dominant representational mode of the postmodern) motion is abstracted into groupings of flow patterns with the objective of reconstructing three-dimensional structures from *optical flow* information. Although such motion simulation studies are primarily motivated by technoscientific applications, *optical flow* theory could provide a general understanding of the phenomenon of motion for specific applications in architecture and art.

The *diachronic* approach may be implemented by dynamic scene analysis and *optical flow* design. From carefully designed *optical flow* patterns it would be possible to derive three-dimensional structures which, when observed by moving through them, would re-enact the original flow patterns. The diachronic effects are activated by the observer's movement.

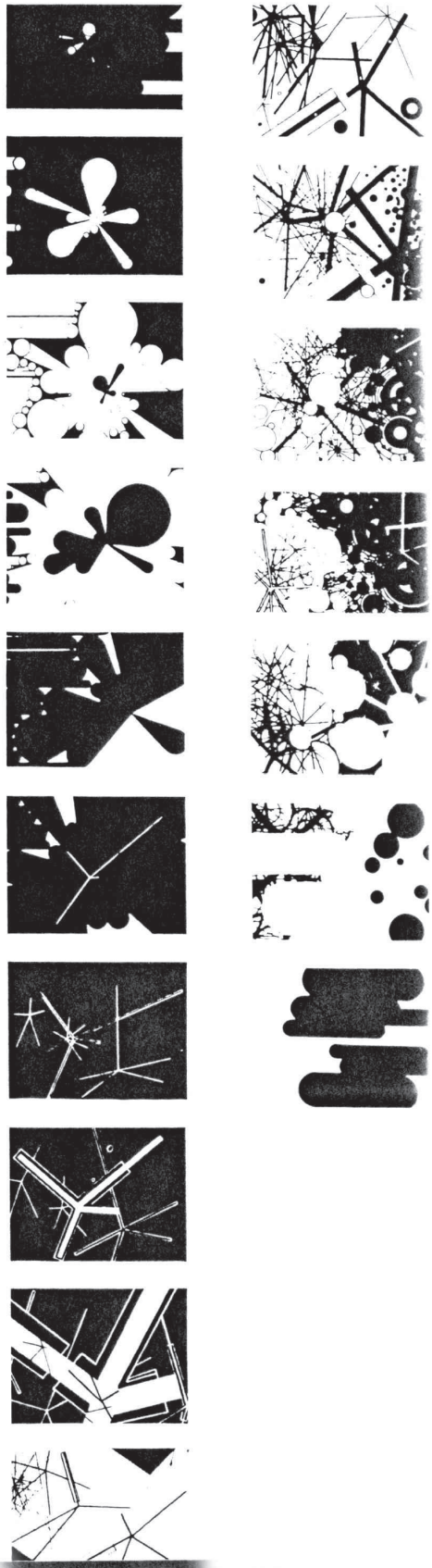
With the diachronic mechanism in place, the parameters governing the analogy are then defined by establishing taxonomies of elements in music (tone, timbre, duration, pitch, dynamics) and architecture (texture, material, light, color, scale). By establishing relationships between musical and architectural elements it then becomes possible to capture relevant events in music and reconstruct or "transpose" them into architectonic space/structures. *Pitch* is transposed into *color, tones* and *timbres* into *textures* and *materials,* musical *dynamics* into contraction and dilation of *scale.* It becomes apparent, furthermore, that the kinds of space closer to activities of movement and circulation might lend themselves more readily to a *diachronic* treatment.

Limits of the Analogy by Diachrony Using Architecture as Medium

While music develops around a static observer—music actively changes in time while the observer is passive — the *diachronic* approach in architecture requires the observer to actively change in time and position while the architectural structure remains what it can only be—static. The resulting artform does not possess "fluid transformability" and is not *ontologically dynamic;* it becomes such only through the active interpretation of the observer forcing a *diachronic* reading. Furthermore, the impossibility to accurately control the *optical flow* of a generic observer moving through musically determined space could weaken the intensity of the *diachronic* experience. It would introduce a degree of play far superior, for example, to that usually involved in the interpretation of musical compositions during the execution of the written scores.

These considerations suggest that the issue of time in art cannot be adequately addressed through fundamentally static media such as architecture, painting, or sculpture in its traditional, non-kinetic development.

Not until a truly diachronic visualization of music is achieved will the synesthetic project be on its way.



Kurt Kranz, *Black: White/White: Black*, pen and ink on paper, 1928-29.

Necessity of a Diachronic Medium and the Evolution of Absolute Cinema

The problem of unification makes it necessary to develop both a medium and a visual artform that are *ontologically dynamic.*

In the twentieth century the necessity of a *diachronic medium* has been felt since the early phases of the modernist avant-garde, in connection with ideas of "painting in motion" and the development of film.

In the 1920s the application of film to the idea of artistic unification gave rise to a development variously referred to as "pure cinema," "abstract cinema," "absolute cinema," or "intended cinema."[1] As Patrick de Haas points out, such terms describe a "broad movement" toward artistic unification which was attracting members from various disciplines with an interest in the relationship of painting to cinema.

Following early futurist experiments, reportedly by Corra and Ginna starting in 1912, Viking Eggeling and Hans Richter were the first to produce relevant examples of abstract film. Both connected to the avant-garde developments of constructivism, dada, and surrealism, their objective was the formulation of a "new order of art" based on *dynamics* and *abstraction.*

In connection with the work of Viking Eggeling and the first showing of *Diagonal Symphony* on May 10, 1921, Theo van Doesburg writes on the role of film in the liberation of the visual arts from static painting:

"The abstract style film composition presented by the artists Hans Richter and Viking Eggeling does not come as a complete novelty. The idea of overcoming the static character of the painted image by making use of the dynamic principle of film technique already existed among those artists who wished to solve the topical problem of visual art by taking advantage of the great strides in film technique and thus to effect an aesthetic union between the dynamic and the static. As yet, however, this has not led to a satisfactory result...which meets the demands of a new age...

"This motion picture composition cannot only serve as a medium for collaboration of all the arts according to a new harmony, but it can also release the modern artist from the old primitive method of manual oil-painting."

What makes Eggeling's work particularly relevant is the theoretical framework behind the idea of dynamic art. Influenced by Bergson's *L'Evolution Creatrice* (1907), Eggeling's theory is based on the necessity of a structured language regulating both the creation of tensions and the movements of attraction and repulsion of opposite poles in a dynamic composition. Through such "universal painting vocabulary," termed *generalbass der malerei*, Eggeling's art aspires to a vision of transcendence and mysticism.

Eggeling's ideas were not unrelated to contemporary developments in painting where the idea of unification was debated by a growing number of avant-garde artists. Wassily Kandinsky and Franz Marc's activities in *Der Blaue Reiter* group, founded in Munich in 1911, centered on the idea of an artform resulting from the synthesis and "interlinking" of all the branches of art. Kandinsky's *Uber das Geistige in der Kunst*—a pamphlet advocating a theory of harmony for painting in analogy with music—expresses a suprematist spiritualism deeply rooted in a romanticist sensibility:

"A painter, who finds no satisfaction in mere representation, however artistic, in his longing to express his inner life, cannot but envy the ease with which music, the most non-material of the arts today, achieves this end. He naturally seeks to apply the methods of music to his own art. And from this results that modern desire for rhythm in painting, for mathematical, abstract construction, for repeated notes of colour, for setting colour in motion.

This borrowing of method by one art from another, can only be truly successful when the application of the borrowed methods is not superficial but fundamental. One art must learn first how another uses its methods, so that the methods may afterwards be applied to the borrower's art from the beginning, and suitably...

And so the arts are encroaching one upon another, and from a proper use of this encroachment will rise the art that is truly monumental. Every man who steeps himself in the spiritual possibilities of his art is a valuable helper in the building of the spiritual pyramid which will some day reach to heaven."

The idea of artistic unification—ultimately related to romantic ideals of synesthesia—is also linked to experiments in the dynamic composition of color and sound. The parallelism between sound and color — which inspired the 18th century experiments with the *clavecin oculaire*— led, in the 20th century, to the development of light projection techniques, where color dynamically changes its hue, saturation, and shade to achieve effects of "visual music." Suffice it to mention the academicist development of Wallace Remington's *The Art of Color Music*—a classic text on the subject. At the Bauhaus, Ludwig Hirschfeld-Mack and Kurt Schwertfeger conducted similar experiments with projected colored lights while, in general, ideas of unification and synesthesia interested many artists from Klee to Moholy Nagy in his "Partiturskizze zu einer mechanischen exzentrik" (Outline Score for a Mechanical Eccentric) which included color light projection, cinema, music, and smells.

Oskar Fischinger's film production, initiated in Germany in the '20s and '30s and continued in the U.S. well into the '60s, while remaining distant from it, parallelled the achievements of the early avant-garde. The early black and white studies can be considered his masterpieces even if still rather experimental in flavor. The later production involves experiments with color. The impact of Fischinger's work on later kitsch developments (with which he refused to have any connection, despite having provided his entire filmwork for training at animation studios in Hollywood) can be seen in the "Toccata and Fugue" excerpt of Disney's *Fantasia* —a "vulgarized" interpretation of the synesthetic ideals of romanticism.

In the '40s and '50s Norman McLaren's few experiments with audiovisual synchronicity represent further examples of the idea of synthesis even if rather weak in ideological content.

[1] The development of *form sequences* on paper preceded their dynamic translations to film. Although Eggeling's and Richter's *scrolls* led to the earliest examples of abstract cinema, other attempts were not as successful. Among the early Bauhaus experiments, Kurt Kranz's sequences were recorded on film only in the seventies and Werner Graeff's scrolls were destined to remain on paper. Similarly Mieczyslaw Szczuka's projects for abstract films in 1924 were never implemented.

Viking Eggeling, *Diagonal Symphony*, abstract film, 1921-23.

Oskar Fischinger, *Study #6*, animated film, 1930.

John Whitney, *24 Variations on a Graphical Matrix*, abstract film, 1940.

The Advanced Technologies and the Musicalization of Art

The enthusiastic and insightful response to film in the early decades of this century testifies to the successful integration of that recently developed technology into artistic research. Far from being deterministic, film happened to reflect the desire for a *diachronic artform* and to meet its technical demands.

The desire for a dynamic artform has not lost its impetus; it is informing significant developments today, even if, for the most part, still confined to highly specialized research. In fact the issues related to the development of a *diachronic medium* are still central to the problem of artistic unification.

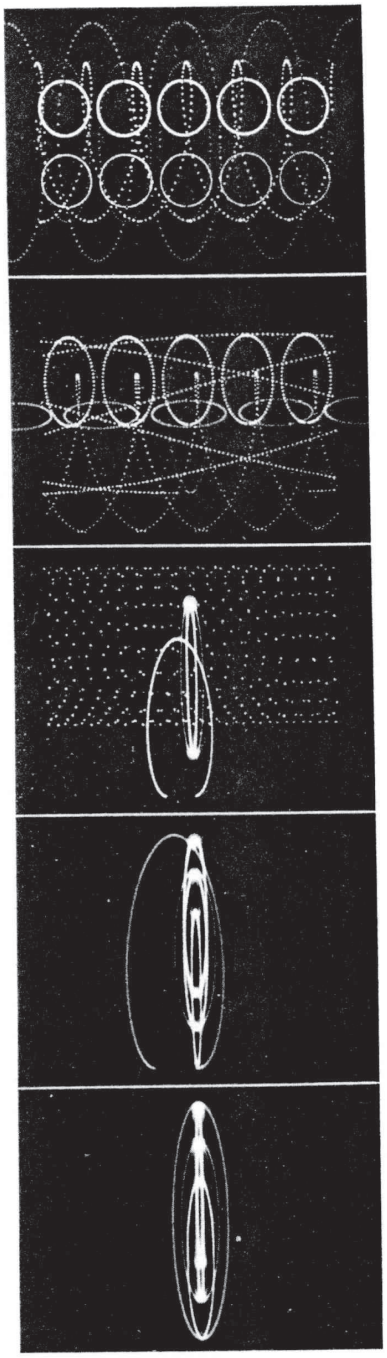
The advance of technoscience, observed with a mix of intellectual curiosity, euphoria, and skepticism by prominent philosophers of postmodernity, has already begun to provide the means to express the ideals of a truly diachronic artform.

Heir of the early avant-gardes in their 1960s revivals, John Whitney was the first to apply the ideas of absolute cinema to cybernetics for the creation of "liquid architecture" and the development of a "new unified field for a heterodimensional art—a field whose special dimension is time." John Whitney's "Digital Harmony" is the most advanced formulation to date of the idea of synthesis and artistic unification:

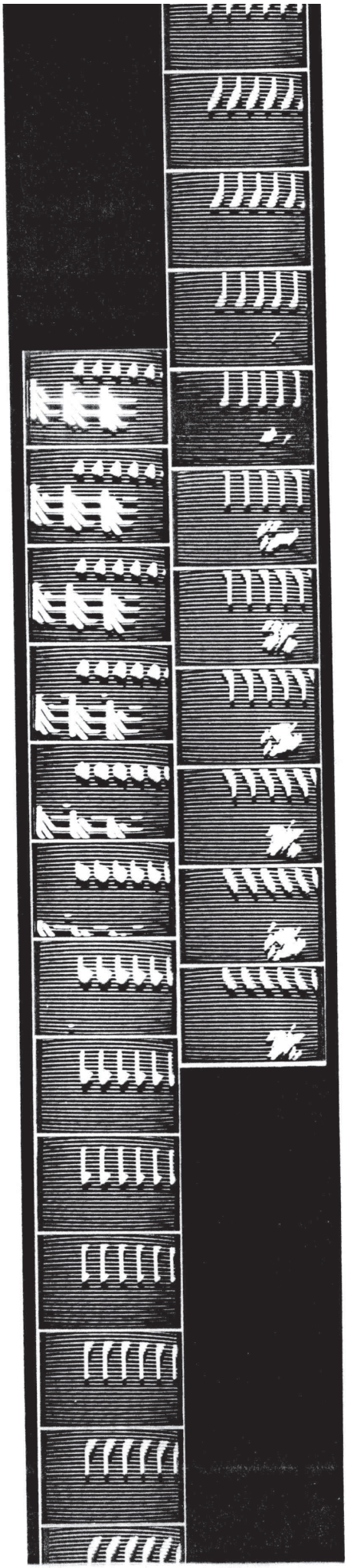
"Cross-fertilization and synthesis opened many eyes and ears to new and different points of view regarding art and music. So it is timely to compare the perception of music with the viewing of art...

The ear resides at the center of a spherical domain. We hear from all around. We hear music as patterns of ups and downs, to and fro in a distinctly three-dimensional architectonic space—a space within.

John Whitney, *Arabesque*, computer graphics film, 1975.

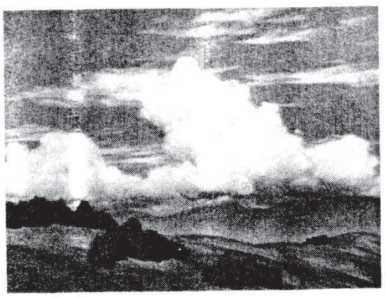


Larry Cuba, *Calculated Movements*, computer graphics video, 1985.



Jacob van Ruisdael, *View Toward Haarlem*, 1628?-82.

Geoffrey Y. Gardner, *Landscape Using Combined 2-D and 3-D Cloud Model*, 1985.



Geoffrey Y. Gardner, *Cloudscape Using Combined 2-D and 3-D Cloud Model*, 1985.

The eye, more outwardly oriented, perceives objects and events outside at the point where our eyes focus. Yet the eye enjoys design equally as well as the ear. The mind's eye shares with the ear any inward experience of architectonic spatial constructions and would perceive them with the same pleasure were they to exist.

The fact is, however, that these interior fluid visual edifices hardly exist...Each century since Leonardo, a vision, grand and obscure as its myth, compelled one or two inventors to struggle with the pathetic inadequacies of the color organ. Twentieth-century abstract art has been a training ground for visual response to musical experience, but in the mind's eye, architecture in motion *lies at the root of our enjoyment of music...*

The exact perceptual experience of music needs a more precise term than the lame metaphor "architecture." There are no words for the dynamics of architectonic pattern which stress the fluidity and diverse expressiveness of musical motion...

In the last third of this century, we acquired a visual medium which is more malleable and swifter than musical airwaves. That medium is light itself. While it was always available, the means to modulate light precisely and faster than sound (on a cathode-ray computer display, for example) is a very recent practicality...

The imagination of many composers, including Scriabin, and painters, including Kandinsky, symbolize the ongoing search, over many generations and with inadequate technology, to discover complementarity *for eye and ear. Both Constructivism in art, seeking a rapport with music, and modern trends in music, probing for a way beyond its traditions by any and all means, will realize a kind of consummation through this complementarity...*

Composers will discover a congruence of aural-visual partnership as productive as that which they found for centuries in writing for combinations of all kinds—keyboard, skin, string or wind. That partnership will be grounded on valid harmonic interrelationships equally applicable to sound and image."

—John Whitney, Digital Harmony

Larry Cuba, a follower of John Whitney, has in recent years created a series of abstract film pieces reminiscent of the early black and white studies of Oskar Fischinger, re-interpreted, digitally, on a higher plane of complexity and accuracy. Cuba's work represents, formally and technically, a still higher formulation of the art of *visual music:* perhaps a better representation of Whitney's theories than Whitney's work itself. In its aesthetic discourse, however, it still remains bounded within the unquestioned tradition of modernist abstraction.

Synthetic Naturalism and the Anachronism of Euclidian Abstraction

The idea of a *heterodimensional art*—variously identified as abstract or absolute cinema, or, more recently, as "compositional periodics" or "digital harmony"—emerges from the anti-academic reaction of the early avant-gardes against realism, mimesis, naturalism and toward the Euclidian abstraction of "pure form."

From the vantage point of the late twentieth century, however, the discourse of abstraction with its reductive set of geometric primitives is susceptible to anachronism. The emergence of probabilistic geometries may invalidate modernist abstraction as a "throwback to Euclid" (Mandelbrot) in a time of non-Euclidian discoveries in form description.

Concerning the issue of representation, the recent advances of simulation techniques—the simulation of nature through mathematical procedures—are creating the premises for a reopening of the discourse of naturalism in art.[2] No longer simply mimetic—as passive recording of natural form—*synthetic naturalism* involves an *active mimesis* where natural form is recreated through the application of intelligible geometric models evolving in time in a simulated three-dimensional space. The complexity and beauty of these four-dimensional models, could provide a parametric field in which structured play can occur in the invention and manipulation of form—a field where new forms of realism but also new forms of "complex" and "non-Euclidian" abstraction will equally be possible.

Epilogue

As technoscience is providing the instruments for the development of an art that is, by philosophical necessity, four-dimensional, simulation gives rise to new naturalisms through the geometries of nature: the non-Euclidian descriptions of turbulence governed by mathematics.

Such developments point toward a *heterodimensional* synthesis in the arts where the formal complexities of nature—grafted onto the diachronic syntax of both abstract film and music—could provide new and dynamic interpretations of art: an art of interdisciplinary unification described by the old saying of the gothic master mason: *'ars sine scientia nihil est.'*

[2] "In the early Twentieth century, Modern artists, notably Suprematists, Cubo-Futurists and Constructivists, rejected scientific perspective and descriptive art. Although this dismissal of the world of appearances in art was never accepted by the general public, Modernism evolved from that rejection.

Computer art in the 1980s is, in turn, a rejection of Modernism...

In the Eighties, artists returned to figurative imagery. It is the return to the descriptive that draws people to computer art."

—Patrick D. Prince "Computer Aesthetics: New Art Experience, and the Seduction of the Masses," *ACM SIGGRAPH 86 Art Show Catalog:41*

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