

Movement in Vision: Architecture and László Moholy-Nagy's Light- Space Modulator

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László Moholy-Nagy's 16mm film *Lichtspiel: Schwarz, Weiss, Grau* (1930) commences with black, stylized text printed on a transparent globe. It rotates, and in a rather self-conscious display of umbrage and diffusion, throws shadows and reflections across a white surface, revealing the words: "Moholy-Nagy zeigt ein Lichtspiel." We see the shadow of a person handling film stock, and then laying transparencies with the words *schwarz, weiss, grau* printed upon them. The values are represented in their inverse, white text on black, black text on white, and black text on grey, respectively. This title sequence discloses a number of concerns and preoccupations of a Hungarian artist, who forwarded one of the most ambitious materialist agendas within early modernism. Moholy-Nagy's *Light Prop*, or *Light-Space Modulator*, as it would subsequently be called, was originally intended as a stage element, but eventually underwent a transformation when it was made the subject of *Lichtspiel*, one of Moholy-Nagy's only abstract films. The existing literature about these projects makes little mention about the significance of the film, except to perhaps off-handedly suggest its superiority to the *Light-Space Modulator*, the very kinetic sculpture it represents.

Indeed, one of the most significant debates that surrounds Moholy-Nagy's *Light-Space Modulator* is its categorization as either a theatrical stage element or as a sculpture in its own right.¹ It could be said that the modulator exists in a number of operational modes, which determine its disposition at any particular point in time. As a static object, its highly polished metallic surfaces and its incorporation of transparent elements epitomize the desire of the 1920s to harness the tools of industrial production. As a prop for theatrical performance, it is inseparable from the space which contains it, while at the same time exceeding the normative bounds of the modernist work of art. More often than not, the work is typically encountered within the confines of gallery walls. However, it is the modulator's potential for spectacular display that has accorded

it a troubled status with regard to the modernist avant-garde.

While Moholy-Nagy expresses discontent in the postwar years with the "complete separation" of sensory and subjective experience from intellectual development, and attributes the epistemological crisis in the formation of modern subjectivity to the prevailing system of industrial production (exemplified by Taylorism, career specialization, vocational schooling, professionalism), his work itself as well as his writing during the Weimar years, in *Painting, Photography, Film*² tells a slightly different story.³ Flirting dangerously close to kitsch in its close attention to commercial design, its ambivalent "detachment" from bourgeois culture, and its fetishization of industrial materials, the *Light-Space Modulator* perhaps best exemplifies the incommensurability of all types of objects in this class with the modernist project of aesthetic autonomy. On the one hand, the artist's decision to incorporate movement into the work of art characterized the kind of scientific rationality that pervaded modernity in the early twentieth-century. On the other hand, his aesthetic appeal to industrial forms, and the introduction of the mechanical energy of the machine to the work of art undermined the *Light-Space Modulator's* credibility as an object of modernism.⁴ It is my intention to discuss the extent to which the modulator's relative proximity to cinema and to spectacular display questions both its ontological status and its relationship to the modernist avant-garde, and to consider its implication for architectural concerns.

In Moholy-Nagy's seminal book *Vision in Motion* there is a demonstration by a student at the Institute of Design in Chicago of how a so-called "light modulator" can be made with a pair of scissors out of a single piece of paper.⁵ A sequence of images is annotated with the following list of instructions:

- "(1) a sheet of white paper on a dark back ground,
- (2) cutting a slit in the paper a number of grey tones occur,
- (3) another cut is made,
- (4) one corner bent, causing a gradual darkening as the paper curves away from the light source,
- (5) the effects of bending up two sides,
- (6) fastening four corners produces more complicated shadows,
- (7) and punching holes adds more values."⁶

Here, in the transformation of a flat sheet of paper from two to three dimensions, one can see how Moholy-Nagy explores ideas that are not necessarily exclusive to one medium. In fact, his preoccupation with a range of abstract phenomena, particularly

light and kinetic principles, has never been tied exclusively to any one medium. As he writes, "A flat surface does not modulate, it only reflects light," but "any object with combined concave-convex or wrinkled surfaces may be considered a light modulator since it reflects light with varied intensity depending upon its substance and the way its surfaces are turned toward the light source."⁷ Rather than this procedure with paper purely reflecting a desire to work with sculpture, the modulator takes on a cursory form. Relations in three dimensions represent crucial *intermediary* steps in Moholy-Nagy's experimentation in other media—namely film and photography. Rather than exploring the three-dimensional properties of the modulator for the sake of defining sculpture, it becomes a means of extrapolation, much like the *Light-Space Modulator* itself was for the subsequent film *Lichtspiel*.

In *Lichtspiel*, Moholy-Nagy not only asserts rhythm, movement and temporal schemes in the work of art, but, by recording the modulator on film, a medium of duration, it perhaps came to embody these ideas in a literal sense. The camera abstracts the three-dimensional, rotational light effects of the modulator, and reconstitutes it in a linear format through montage. No longer legible as a self-contained object in the film, the modulator is transformed into a veritable phantasmagoria of machine parts and transparency-effects. In his reclamation of Henri Bergson's vitalism for cinema studies, Gilles Deleuze argues that "mechanism involves closed systems, actions of contact, immobile instantaneous sections," and that it was through montage, the mobile camera, and the emancipation of the viewpoint, that film introduces an endless stream of random combination.⁸ According to this logic, the modulator could then be said to exemplify a "closed" system, and *Lichtspiel*, in its ability to capture the infinite permutations of the modulator, an "open" one. One might wonder if there was something lacking in these elaborate, light displays that the artist felt compelled to eschew the haptic intervention of the rotating sculpture in favor of the flattened opticality of film. Does the reclamation of the work through montage achieve the mobilization of vision that Moholy-Nagy initially aspired for when making the sculpture?

As identified by Rosalind Krauss, kinetic and light experiments in their foregrounding of temporal schemes, engage with what critic Michael Fried negatively identified as "theatricality."⁹ Theatricality comes to the fore when the work of art exceeds the boundaries of proper modern aesthetic experience by either emphasizing its status as an object or asserting "a kind of stage presence."¹⁰ Although it is not entirely clear whether Fried's indictment would necessarily include the *Light-Space Modulator*, the artist's decision to make it a subject of a

film does complicate the work's relationship to modernist aesthetics even further. Its autonomy could be said to be compromised as a result of its close proximity to a range of aesthetic supports (sculpture, film, photography) and its flagrant cohabitation of the phenomenological space of the viewer.¹¹ What does it mean to say, as Fried so provocatively states, that "cinema, even at its most experimental, is not a modernist art"?¹² Could it be that Moholy-Nagy's appeal to cinema by way of kinetic sculpture heralds the artist's modernity, at the same time that it discredits his engagement with modernism?

Consideration of the nature of its relationship to social conditions, the built environment, and mass spectacle might be the best way to address this question. To begin with, the modulator reduces the techniques of industrial production to an exercise in formal abstraction—a strategy that heralds the work's modernity at the same time that it consigns it to merely simulate, and therefore, affirm the fantasy of industrialized capitalism.¹³ The *Light-Space Modulator* is, therefore, difficult to reconcile with any account of modernism that requires an artwork to have an intrinsically tactical relationship to social and political reality. Moreover, if it is indeed a machine, it is hardly a productive one. It carries out a kind of 'action of appearances,' as if it had a tangible effect on reality. As Guy Debord writes, "the abstraction of all individual work, as of production in general, finds perfect expression in the spectacle, whose very manner of being concrete is, precisely, abstraction."¹⁴

Secondly, its relationship to its potential audience is contingent upon the space and the architecture which contains it. Architecture represents the most tangible means that the modulator becomes categorized as either a mechanical thing, and aesthetic object, or a scientific instrument. Whether it is in the autonomous space of the gallery or the theater stage, its placement within different built structures significantly transforms the meaning of the work and its reception. Not only do the architectural elements of the stage seek to produce and maintain a fictive space that would need to conform to the narrative of any particular theatrical production, but it also "frames" what would otherwise be a free-standing sculpture.¹⁵

Thirdly, its participation in the newly emerging mass entertainment of cinema appears to further isolate the work with regard to modernism. As much of the criticism of the 1920s illustrates—there was an ambivalence in the social sciences towards the movie houses in which the experimental films would be projected to large audiences. To many of cinema's critics, the retreat into the darkened theatre offered the modern subject the means to either escape the external pressures of social reality or capitulate to prevailing political agendas, and the

architecture of the movie house reinforced these sentiments. As historian Janet Ward describes, Weimar movie palaces were "facades on facades,"¹⁶ which "ideally lent itself to the full range of electric transformation,"¹⁷ and their interiors, outfitted with the seductive curves "filled the minds of spectators with a false sense of unity and wholeness,"¹⁸ and prepared them for the partaking of cinematic spectacle. However in practice, these spaces, although they attempted to generate an autonomous sphere, very often reinvented and reasserted "real life" phenomena that regularly unfolded in the world beyond the cinema walls.

Lastly, Moholy-Nagy's move away from traditional modes of artistic reception ultimately inspired a range of kinetic and light experiments, exhibitions, and criticism in the postwar era and beyond. His *Light-Space Modulator* was situated at the forefront of avant-garde practice, even at the same time that his technological fetishism and close relationship to commercial design worked against it. Engaging with a variety of forms of mass entertainment (sculpture, film, theater) and the social, political, and aesthetic conditions that "frame" these phenomena, his work reveals at the very least what was at stake in the production of a number of unconventional objects that emerged in the early

twentieth century, and continues to raise questions today. In his 1968 book *Beyond Modern Sculpture*, Jack Burnham would celebrate the automatism found in kinetic art, and like many of his peers would cite Moholy-Nagy's objects as a presaging of the cybernetic discourses which developed out of the second world war.¹⁹ Twenty years later in 1988, experimental filmmakers like Vlada Petric, founder of the Harvard Film Archive, would use new digital technologies to reconstitute *Lichtspiel* according to Dziga Vertov's theory of intervals. Even more recently, in January 2007, the Whitney Museum of American Art in New York invited a group of contemporary electronic musicians called Text of Light, whose members include Sonic Youth's Lee Ronaldo, Christian Marclay, Allan Licht, and William Hooker, to carry out a performance, as they typically do, in relation to moving visual images, typically films from the avant-garde. During this traveling exhibition, which brought together the work of László Moholy-Nagy and Josef Albers, the *Light Space Modulator* and *Lichtspiel* "set the stage" for an immersive sound experience. Clearly, the reception of this work of art and its mutable relationship to its audience and its architectural frame continues to remain in flux.

Notes:

- 1 In the archive of the Busch-Reisinger Museum at Harvard University, for example, where the original modulator is housed, there is no definitive consensus on the title of the work. "Light Display Machine," "Light Prop," and "Light-Space Modulator" are all commonly used terms. One of two reconstructions of Harvard's original is in the collection of the Bauhaus-Archiv—Museum of Design in Berlin.
- 2 László Moholy-Nagy, *Malerei, Fotografie, Film*, Bauhaus Bücher 8. Munich: Langen, 1925.
- 3 For a demonstration of this line of thinking, see László Moholy-Nagy, *Vision in Motion*, ID book, Institute of Design [Chicago]. Chicago: P. Theobald, 1947.
- 4 As the work of theorists and critics from Siegfried Kracauer to Alois Riegl, among others, would seem to suggest, "movement" has been a rather free-floating concept—at once applicable to a range of early modern phenomena (magic lantern displays, phantasmagoria shows, and cinema) and social dynamics, and subject to both scientific and aesthetic inquiry. The word "kinetic" has taken on a number of different connotations in the field of art history—most commonly it is used to refer to a range of pre- and postwar objects, including Calder's mobiles, Gruppe Zero's light displays, and the sculptures and environments of Julio Le Parc. Yet when one considers these objects individually, separate them out from their broader context, it becomes apparent that each of these examples expressed and engaged a completely different set of operations and economies, which were intrinsically distinct from one another.
- 5 Undoubtedly one of the most pervasive texts of Moholy-Nagy's thirty-two year career, *Vision in Motion* synthesizes the artist's practical experimentation with light and materials, his theoretical interests in notions of space-time, and above all his pedagogical aspirations at the Bauhaus in Germany and its new incarnation in Chicago. Slightly unwieldy in scope, the book has an agenda that is quite international and incorporates a staggering amount of illustrations of work by artists from such widely diverse locations as Tokyo, Italy, and of course Chicago, where the New Bauhaus and later his new Institute of Design was situated. Published shortly after his death in 1946, this large text (at approx. 360 pages) also assures the extension of the artist's legacy into the twenty-first century, offering its readers on the one hand, a summation of a number of competing artistic styles and traditions, including Cubism, Futurism, Constructivism, while on the other hand, presaging the very clear influence of Moholy's work on post-war artistic practices. See László Moholy-Nagy, *Vision in Motion*. ID book, Institute of Design [Chicago]. Chicago: P. Theobald, 1947.
- 6 *Ibid.*, 202.
- 7 *Ibid.*, 198.
- 8 Gilles Deleuze, *Cinema 1: The Movement-Image*, Trans. Hugh Tomlinson and Barbara Habberjam, Minneapolis: University of Minnesota Press, p. 59.
- 9 Rosalind E. Krauss, *Passages in Modern Sculpture*, New York: Viking Press, 1977 and Michael Fried, "Art and Objecthood." *Artforum* 5 (Summer 1967), pp: 12–23.
- 10 Michael Fried, *Art and Objecthood*, Reprinted in Charles Harrison and Paul Wood, eds. *Art in Theory: 1900–2000: An Anthology of Changing Ideas*. 2nd Edition. Oxford: Blackwell Publishing, 1992 [2003], p. 839.

- 11 Aesthetic autonomy, so important for the theorization of modernism, hinges upon the relationship of the object to its frame. Clement Greenberg has defined autonomy as an aspired process of Kantian self-reflection; each medium should be limited to its most "unique and irreducible" characteristics and autonomous from other media and social reality at large. Alternatively, Peter Bürger characterizes autonomy as having unnecessarily shifted the emphasis in aesthetics of the work of art from content (social and political engagement) to form, from 'statements' emerging from a historically specific context to a kind of "production aesthetics." Clearly, these two definitions of modernism are not easily reconcilable with one another, but it would seem that the modulator is entangled between two seemingly incompatible, yet inseparable spheres. See Clement Greenberg, *Modernist Painting* (1960). Reprinted in Charles Harrison and Paul Wood, eds. *Art in Theory*, see note 10, p. 774; Clement Greenberg, *Towards a Newer Laocoon*, *Partisan Review* 7:4 (July-August 1940), pp. 296–310; Clement Greenberg, *Avant-Garde and Kitsch* (1939). Reprinted in Charles Harrison and Paul Wood, eds. *Art in Theory*, see note 10, pp. 539–549; and Peter Bürger, *Theory of the Avant-Garde*, trans. Michael Shaw. Minneapolis: University of Minnesota Press, 1974 [1984], p. 19.
- 12 Fried, see note 10, p. 843.
- 13 Clearly, working with the engineer Stefan Sebök and the Allgemeine Elektrizitäts-Gesellschaft (AEG) to develop the object and its electronic motor, provides the *Light-Space Modulator* with a certain level of mechanical credibility; however, the work's actual relationship to the techniques of industrial production might be said to be one of mere appearance. Although it shares a morphological affinity with a "fully-operational" machine, it cannot enact tangible transformations upon physical reality; it is most profoundly disconnected from the material culture which embodies the Weimar period, while at the same time, emulating it through the superficial adoption of its form. Moreover, the ontological status of the *Light-Space Modulator* as a work of art perhaps precludes any possibility of achieving what is effectively the main objective of human technology: utilitarian productivity.
- 14 Guy Debord, *The Society of the Spectacle*, translation by Donald Nicholson-Smith. New York: Zone Books, 1967 [1994], p. 22.
- 15 This opposition is most significantly revealed in the artist's original intention to enclose the object inside of a five-sided box. Lined with 140 small light bulbs, the container would effectively remove the apparatus from view without foreclosing its ability to generate a light show.
- 16 Janet Ward, *Weimar Surfaces: Urban Visual Culture in 1920s Germany*, Berkeley: University of California Press, 2001, p. 163.
- 17 *Ibid.*, p. 173.
- 18 *Ibid.*, p. 179.
- 19 Jack Burnham, *Beyond Modern Sculpture: The Effects of Science and Technology on the Sculpture of This Century*, New York: George Braziller, 1968.