ELECTRIC SHADOWS

"What I mean is the idea of detached bodies floating in space, of different sizes and densities, perhaps of different colors and temperatures, and surrounded and interlaced with wisps of gaseous condition, and some at rest, while others move in peculiar manners, seem to be the ideal source of form."

-Alexander Calder, *What Abstract Art Means to Me*, 1951

Beginning with Guy Brett's 2000 landmark exhibition *Force Fields: Phases of the Kinetic* in Barcelona[1], Kinetic Art has been enjoying a surge of interest in the 21st century, so much so that its founders' high-minded ideals from a half-century ago seem prophetic today. While Kinetic Art's comeback might at first be mistaken as the symptom of a general nostalgia for all things mid-century, with the works themselves serving as emissaries from an imaginary society that was once peacefully resolved in its attitudes about new technologies and their role in our daily lives, such a reading is dampened by our awareness that there is little or no evidence that such a society ever existed. Our feelings about new technologies have always been divided between wariness and amazement, no less so now than in the 1950s and 1960s, and our currentfeelings about Kinetic Art reflect that inherent discord. But if we judge by the enthusiastic crowds that flocked to Paris' Grand Palais in 2013 to see the exhibition *Dynamo*[2], it seems more plausible to suggest that the pioneers and key innovators of Kinetic Art were decades ahead of their time, and that the public of the 21st century is in a better position to understand and appreciate this generation's experiments in movement and light than was a viewership far more attuned to the nuances of traditional easel painting.

This exhibition and accompanying publication are rooted in two fundamental premises. The first is that Kinetic Art was one of the most perplexingly underrated developments of 20th century art, and the second is that Latin American artists were pioneers in Kinetic Art's development, as well as among its most profound

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[1] At the Museu d'Art Contemporani, Barcelona

[2] The curators of the exhibition were Serge Lemoine and Mathieu Poirier

exponents. In making both these claims, it's important to cite them in tandem, if only because they appear to be causally connected, at least insofar as the knowledge and familiarity being referred to is understood as pertaining to an audience within the United States. By point of contrast, the first premise would be entirely different if this exhibition were taking place in France, where Kinetic Art was long a popular style; and the second premise would make a different kind of sense in Argentina or Venezuela, where some of the most celebrated artists of the last century were (or continue to be) active in the kinetic mode. However, for reasons that will be explored in greater detail a bit further, Kinetic Art never proved especially popular in the U.S., while even a cursory overview of the subject indicates that most important developments within vanguard Latin American art over the last half century have tended to experience long delays in reaching a North American public. In the face of these respective differences of cultural heritage and historical understanding, it has been left to the present occasion to make the argument in this country that these artists' accomplishments are more than worthy of attention today. Based on how little we do know about them as a result of the genre's exclusion from conventional histories of mid-20th century art, it's even possible that these enigmatic, blinking analog machines and objects from the 1950s and 1960s, which in many ways foretell the screens and devices of our own digital age, have the capacity to communicate something meaningful to our present time and place about perceptual frontiers and the ever-shifting limits between technology and art.

If the most relevant corollary to the premise that Kinetic Art was ahead of its time is that the visual language of movement employed by the artists of that generation – blinking, filtering, fading, rotating, shimmering -- has been fully internalized by the habitants of the world of Snapchat and Vine, another key factor is that the Kinetic Art of fifty years ago uncannily resembles much art being made today[3]. Artistic investigations into how the properties of light could be harnessed as an artistic medium go back centuries, but there is little question that digital technologies have made accessible an endless array of artists' tools, which enable the user to achieve in a series of clicks and drags what might have required hours or days of manual labor in the past. With these tools now in more wide use, a range of visual connections have also started to emerge that might not have seemed meaningful to an earlier generation of art historians or curators, but which now seem to link developments like Kinetic Art with the emergence a few years later of a generation of artists in southern California whose primary interest was in isolating and framing the effects of natural light on visual perception. The relationship inferred is not one of cause and effect, but emerges from the principle that interrelated breakthroughs can and do occur in certain highly specialized fields dispersed around the globe, and that the

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[3] As indicated by its subtitle, the curatorial premise of *Dynamo: A Century of Light and Motion in Art 1913-2013* was based on Kinetic Art providing a continuum to understanding recent art history, with several recent works by younger artists included alongside historical examples.

connection between these distinct breakthroughs is not based on conventional historical models of who traveled where and was influenced by whom.

The occasion for *Kinesthesia* presented itself in the wake of a meticulously selected and installed survey of Argentine Kinetic Art from the 1960s, organized in 2012 by Maria Jose Herrera for the Museo Nacional de Bellas Artes in Buenos Aires. Following an inquiry about many of the twenty artists in the exhibition who were still largely unknown names outside of highly specialized circles, a hidden paradox within the exhibition's subject matter was laid bare. Until quite recently, it would have been extremely challenging, if not impossible, to develop an overview of Argentine Kinetic Art, precisely because so many of its most important practitioners had left the country and moved to Paris fifty or sixty years before, and most of them were already deceased. Despite the dynamic visual interplay between the works within the exhibition, the chronological and geographic framework of these artists' career biographies was cleanly bifurcated: those who left, and those who stayed, and some minute professional or pedagogical territory shared between the two. These were simply the historical conditions in which much of this work was produced, and while until 2012 the Argentine public had been deprived of a composite picture of both the expats and non-expats together, it is unlikely they would have found solace in the Eurocentric reading of the same topic, which tended to minimize the significance of a specifically Argentine history that contributed to many of these artists' formations, and more or less eliminated the Buenos Aires chapter altogether. This problem pointed to another challenge, which was how to determine the degree to which this bifurcated condition affected the way the history of Kinetic Art was eventually written across the continent. Underlying these concerns was a fundamental question: if artists from Latin America had played a pioneering role in the development of Kinetic Art, as appeared increasingly certain, why wasn't there already a historical category labeled Latin American Kinetic Art? Or, to take the Argentine situation as a starting point, under what conditions might a cultural phenomenon that took place on opposite sides of the Atlantic Ocean be referred to today as a single artistic history?

Keeping these conditions in mind, in order to organize the present exhibition and undertake the research that it entailed, a species of art historical fiction had to be developed, in which a new category was coined to collectively identify a group of artists who in their heyday may have been viewed by peers and contemporaries through dramatically different lenses. For example, inside Argentina, where artistic tides have changed just as rapidly (if not more so) as in Paris, artists who had enjoyed limited success through their association with Kinetic Art were more or less sidelined by the 1970s, first as a natural outcome of shifting tastes, and later because of growing political instability within the country, as a result of which intellectuals, activists and cultural workers who might have been associated, whether accurately or not, with the political left were potentially subjected to state-

sponsored terrorism. In the Paris of the 1950s and 1960s, by contrast, not much weight was attached to where a person came from, as the mere fact of having landed in the City of Light was what truly mattered in the city's upbeat postwar atmosphere of cosmopolitan fraternity and fervent political debate. As Isabel Plante articulates elsewhere in this publication, Paris was where one escaped the confines of one's upbringing, and artists from Argentina and Venezuela, in particular, found themselves being pushed to challenge their own limits in light of the real-time artistic experiments being carried out all around them. Paris was where the studios of Fernand Leger, Max Bill and Georges Vantongerloo – artistic giants whose like could not be found in Argentina or Venezuela – were a train ride away. Most crucially, for its international impact to become so extensive, Denise Rene's groundbreaking 1955 exhibition *Le Mouvement* could only have taken place at a gallery in Paris, which was also where so many of its practitioners lived. By the end of the turbulent 1960s, Kinetic Art could be said to have been embraced as the official state style, after the new Musee d'Art Moderne at the Centre Georges Pompidou, which opened in 1977, continued bestowing prominence upon various members of the Kinetic Art movement, a process that continues well into the present day.

Before tackling some of the knotty historical questions that cling to the subject of Kinetic Art and its varying fortunes over the years, it is probably best to pause and try to develop a working definition of what precisely it is. Although a multitude of possible understandings of what Kinetic Art is have hampered the movement's historic specificity, since its heyday some of these parallel definitions have fallen away, through either disuse or changing interpretations of certain artists' work, with the result that only two definitions are considered for the present purposes. 'Active' Kinetic Art, on the one hand, is recognizable by its inherent propensity toward motion, whether by force of wind, electricity, magnetism, water, or other sources of energy. 'Passive' Kinetic Art, by contrast, only appears to be moving so long as the viewer is also doing so, and likewise appears to stop if the viewer remains absolutely still. For some years, Kinetic Art's pioneering critic Guy Brett championed a third definition of kinetic art, which might be retroactively labeled 'Interactive Kinetic,' or art that is only complete once it is activated through the physical intervention of a spectator[4]. The Brazilian neo-Constructivist artists Lygia Clark and Helio Oiticia, whose art prodded the viewer toward a state of play and free association in which the artworks have a dynamic function as garments or manually manipulated objects, offer the best examples of this third category. An intriguing exponent of this third variation is the case of Uruguayan cubist Joaquin Torres-Garcia, whose broad artistic production included simple wooden toys intended to be

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[4] In his 1968 *Kinetic Art: The Language of Movement*, Brett underscores the transformable aspect of both artists' work to make his case, while also singling out the non-kinetic light works of Dan Flavin and Francois Morellet as extending the boundaries still further.

manually manipulated, and which proved highly influential for a group of young Argentine and Uruguayan abstract artists who, as noted in Cristina Rossi's essay in this volume, would cite Torres-Garcia's whimsical, intimate objects as direct precursors for their own experiments.

A close relative of Kinetic Art, from which some differentiation is needed, is Op Art, so named for its propensity to deploy illusionistic representations of geometric lines, patterns and shapes in order to fool the viewer into perceiving either deep space, or a warped and/or fractured relief space. Because its visual impact depends on maintaining a perfectly flat picture plane, Op Art tends be excessively linear, its surface scored by straight or curved lines rendered in close proximity to one another. However, a relatively porous boundary has always existed between Kinetic Art and Op Art, in part because of certain artists whose work has at different times been associated with each camp. Victor Vasarely, who played a key role in the genesis of Kinetic Art, is also Op's most immediate direct forebear. Although Op Art's roots, like those of Kinetic Art, extend to Dutch and Russian Constructivist painting and sculpture of the 1910s and 1920s, the phenomenon did not attain international visibility until the 1965 exhibition *The Responsive Eye* at the Museum of Modern Art, which succeeded in introducing the work of Vasarely and Bridget Riley – not to mention Carlos Cruz Diez, Horacio Garcia Rossi and Julio Le Parc -- to a wider public, while somewhat muddying the clarity of its premise by including such non-Op painters as Kenneth Noland, Frank Stella, Robert Irwin and John McLaughlin. As the direct result of MoMA's efforts, Op Art became something of a household word in the U.S., but almost invariably employed in the pejorative, as an example of an art movement that wasn't really a movement at all, but merely an eccentric symptom of a befuddled era.

Although much of the critical reception to *The Responsive Eye* was openly hostile, and despite the fact that curator William Seitz's departure from MoMA's staff not long afterwards was generally seen as a sign of the Board of Trustees' disapproval, the exhibition was an unprecedented public and media success, drawing record lines of visitors willing to endure long waits to experience the spectacle for themselves. In fact, although it may have briefly seemed like Op might become the abstract counterpart to Pop, the lack of a major American artist who was pursuing Op with the formal rigor of a Riley made it an especially tough sell, especially since by 1965 the names of Andy Warhol, Roy Lichtenstein, James Rosenquist and Claes Oldenburg were already consecrated within the local art lexicon, whereas critic Thomas B. Hess handed *The Responsive Eye* the quintessentially New York snub with an Art News review that dismissed Op as "'Out-of-Town Art'… pursued as fanatically in South Dakota as in the South of France."[5] The notion that for Hess, France and South

[5] Hess's review, "You Can hang it in the Hall," ran in the April 1965 issue of *Art News*, which republished it in 2015 on the occasion of *The Illusive Eye*, Museo del Barrio.

Dakota existed at comparable levels of provincialism illustrates how determined many opinion makers were to make the imprimatur of official French culture an object of disdain. Of particular anathema to this new mind-set was the presumption that an international art movement originating in Paris – where all the movements from Impressionism to Surrealism had been born – could be imported to New York, and that American artists might eagerly jump on board.

At the time of *The Responsive Eye*, a full decade after *Le Mouvement*, Kinetic Art's foothold in the US was still quite tenuous. The cultural tug-of-war then playing out between Paris and New York, not to mention the movement's origins in the Parisian postwar avant-garde, and a membership roster heavily weighted by artists from South America, are among the underlying reasons why Americans know so little about the movement today. Beginning in the late 1940s, the U.S., simultaneously flexing its postwar geopolitical muscle with its recognition of the emergence of Abstract Expressionism as a homegrown style -- albeit with plainly evident international roots --, began to systematically supplant Paris as the capital of advanced art with New York, where many European artists and thinkers had fled for safety in the late 1930s and early 1940s. As historian Serge Guillbaud has persuasively argued, a protectionist spirit regarding art and music emerged in the U.S. in the early 1950s, its goal to persuade reluctant Europeans that brash, uncouth Americans were capable of producing objects of beauty as sublime and accomplished as those of their counterparts across the Atlantic, and that the same critical standards applied to the paintings of Picasso and Duchamp could be used to judge the works of Pollock and de Kooning. The political subtext to this campaign was the Cold War, and the US's efforts to win over European sensibilities of Europeans were tailored to provide an appearance of overall benevolence while its policies in Southeast Asia and Cuba were coming increasingly under rhetorical fire in Europe. The campaign reached a climax of sorts in 1964 at the Biennale de Venezia, when for the first time, an American artist, Robert Rauschenberg, won the Golden Lion for painting, producing scandalized accusations of the US 'colonizing' European culture. Two years later, despite rampant rumors that the Pop artist Roy Lichtenstein would be the Golden Lion winner, the surprise decision by the international jury to award the prize to the little-known Argentine artist Julio le Parc, who had been living in Paris for more than a decade, was interpreted as a potent signal of the European cultural infrastructure re-asserting itself.

One justification for lingering over the impact *The Responsive Eye* has less to do with the exhibition itself than with a phantom exhibition that hovered over a number of conversations undertaken during the research phase of this exhibition. Although no definitive evidence has ever been found to prove or disprove the claim, many people in a position to know a great deal about why Kinetic Art never really took root in this country believe that Seitz was actually working on a follow-up exhibition to *The Responsive Eye* when he and MoMA parted ways, and that this second, never-

realized, exhibition was to have covered the subject of Kinetic Art, whose historic development was, unlike Pop, closely related to Op Art. Since the exhibition never took place, it is pointless to speculate which artists might have been included, but it almost certainly would have been more heavily weighted toward European and Latin American artists than *The Responsive Eye* -- sufficient reason, in the context of an increasingly nationalistic policy on the part of U.S. museums, for its supposed cancellation.

Perhaps it was partially in response to persistent rumors of the ill-fated follow-up to *Responsive Eye* that in 2016, El Museo del Barrio in New York observed the fiftieth anniversary of the original exhibition by presenting a succinct overvieew of Kinetic and Op Art under the title *The Illusive Eye*. Exhibition curator and then-director Jorge Daniel Veneciano explained the title's reference as a way of addressing the exclusion of Latin American artists from previous considerations the subject, while looking beyond European theories of perception for the work's context, in favor of Egyptian and Eastern mysticism. Among the more than fifty artists in the Museo del Barrio project one can find nearly every artist in the present exhibition: Martha Boto, Carlos Cruz-Diez, Horacio Garcia-Rossi, Gyula Kosice, Julio Le Parc, Alejandro Otero, Abraham Palatnik, Jesus Soto, and Gregorio Vardanega, along with Argentine painters Eduardo MacEntyre and Miguel Angel Vidal, who in 1959 launched a proto-Op movement of their own, called 'Pintura Generativa' [Generative Painting]. Without indulging in historicist fantasizing, *The Illusive Eye* offered, a half-century after the fact, the first-ever U.S. glimpse at the accomplishments of these (and an array of other) artists at the heights of their careers.

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Before there was Kinetic Art, there were a range of developments in Modernism that directly incorporated movement, and prior to this a broad historical lineage of art openly explored the qualities of movement. In his landmark study, *Origins and Development of Kinetic Art*, historian Frank Popper highlights tendencies that appear in the work of certain French Impressionists, particularly Degas and Monet, linking them to Eadweard Muybridge's concurrent photographic experiments in rendering animal and human locomotion motion one frame at a time. Tracing movement in Post-Impressionism from Seurat's use of pictorial vibrancy to van Gogh's *Starry Night* and Gauguin's Tahitian "world of rhythm," Popper's narrative effectively fuses the development of Kinetic Art with the core achievements of the Modernist canon: Picasso's and Leger's early Cubism; the Futurists Balla, Severini, and Boccioni;

Kandinsky's early abstractions. Marcel Duchamps was arguably the first major artist to tie his artistic development practice to an ongoing engagement with the kinetic realm was Marcel Duchamp. From his 1912 *Nude Descending a Staircase* to his *Bicycle Wheel* readymade a year later, Duchamp kept returning to the problem of movement through the early 1920s, eventually building the *Rotorelief* series of motorized spinning discs to center on cinematic optical illusions. Notwithstanding Duchamp's consistent efforts to develop movement as a sculptural element, the first artists to apply the term "kinetic" to visual art were the Russian siblings Naum Gabo and Antoine Pevsner in 1920, and it was Gabo -- followed a few years later by the Hungarian modernist Laszlo Moholy-Nagy -- who first exhibited a single steel strip set in motion by an electric motor that same year, giving it the title "Kinetic Sculpture." Although another thirty-five years would pass before the first major exhibition of kinetic art would take place, the wheels, so to speak, were already set in motion.

While a number of Paris-based artists, in particular the American sculptor Alexander Calder, consistently introduced movement into art through the late 1920s and early 1930s, little concerted effort to formalize these efforts within European art can be seen until well into the 1950s. Calder, who had moved to Paris from New York in 1926, evolved during this period from his renowned *Cirque Calder* (1926-1931), made up of small wire figures he referred to as "drawing in space", to exhibiting motorized objects with discrete moving parts -- dubbed "mobiles" by Duchamp himself -- in the early 1930s. The term was eventually applied to all of Calder's moving sculptures, long after their motion was grounded in wind and other passive forces. Calder returned to the U.S. in 1933, but his impact on the Paris art scene persisted for years, so that when the Venezuelan architect Carlos Raul Villanueva began applying his theories about a "synthesis of the arts" to his master plan for the Ciudad Universitaria in Caracas, Calder was one of the artists whose participation was deemed essential to the undertaking. As architectural historian Rafael Pereira elucidates elsewhere in this publication, the Ciudad Universitaria, which occupied a full twenty-five years of Villanueva's life and incorporates forty buildings spread out over two square kilometers, was the first occasion to bring together many of Kinetic Art's historical antecedents and later practitioners. From the formative generation were commissions by Laurens, Leger, and former Dadaist Jean Arp. Representing the new generation of Venezuelan artists were Alejandro Otero, whose long Paris sojourn (1945-1952) had made him the de facto agent of artistic change in Venezuela; and Jesus Rafael Soto, who in 1950 also moved to Paris, where he eventually spent the rest of his life. But the two artists whose work represented a dynamic bridge those two generations were Calder, whose *Clouds* installation of acoustic panels in the Magna Aula is considered by many to be his greatest artistic achievement; and Vasarely, who not only created three major site-specific works on the campus, but acted as Villanueva's agent regarding the works produced in Paris at the Susse Foundry by Arp, Leger and Pevsner.

As suggested earlier, Vasarely's foundational role in the birth of both Kinetic Art and Op Art as separate international movements is difficult to overstate. Born in Pecs, Hungary, Vasarely moved to Budapest in 1925 to study Bauhaus principles, and to Paris in 1930, where he produced the first example of what later became known as Op Art with his painting *Zebra*. Despite this precocious accomplishment, Vasarely's employment as a graphic artist, his pedagogical aspirations, and his tangential chapter painting in an expressionistic style ended up sidetracking his artistic development for many years, so that the geometric optical style for which he became renowned only came to fruition in the late 1940s. By the end of 1939, however, Vasarely met aspiring art dealer Denise Rene (1913-2012) at the Café Flor[6], and the couple's names would soon be closely linked as the most consequential team behind Kinetic Art's successes. Waiting out the invasion and occupation of Paris, Rene opened her gallery in 1944 with an exhibition of Vasarely's works, and soon the pair were fiercely devoted to promoting the visual language of geometric abstraction, which eventually included cultivating a protracted interchange between France and South America that defined the early years of the Kinetic Art movement, which came to include exhibitions of Vasarely's work at the Fine Arts Museums of Buenos Aires (1958) and Caracas (1959). Although he was not a practitioner of Kinetic Art on a sustained basis, Vasarely's sculpture *Plus/Minus* in Villanueva's Ciudad Universitaria, whose floor tile patterns trace the shadow of the sun as it moves across the patio, is a rare example of his more inventive engagements with actual, as opposed to retinal, movement. Although disagreement lingers over how direct a role Vasarely played in the planning and selection of the wildly successful *Le Mouvement*, the inclusion of work by the relatively young Soto alongside better known figures such as Calder, Duchamp and Vasarely himself represents a sea change in the way that Latin American artists had been incorporated into the narrative history of modern art. Rather than serving as belated followers of a major movement in European art, for the first time Latin Americans were active in its inception.

Among expat South Americans in Paris, Alejandro Otero was a key figure. Returning to Caracas in the midst of his Paris sojourn, Otero set off a scandal in 1949 by presenting his series *Las Cafeteras* [The Coffeepots] at the Museo de Bellas Artes. Employing broad, open brushstrokes within a loosely Cubist composition on a large scale, the *Cafeteras* were dramatically unlike anything a Venezuelan artist had attempted before, and even if by Parisian standards they did not quite represent the cutting edge, to a new generation of artists in Caracas the exhibition signaled a new era of dynamic engagement with abstraction. While still in Venezuela, Otero began his *Coloritmo* series, which represents an integral step in the articulation of Kinetic Art in South America, but just as eventful was his formation, on returning to Europe in 1959, of the group Los Disidentes, composed primarily of other Venezuelan expat painters working in abstraction. A tireless agitator for modernism his entire life, Otero was one of the artists closest to Villanueva, and his engagement with the

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[6] The Daily Telegraph, "Denise Rene [Obituary]," 27 September 2012.

Ciudad Universitaria project from its earliest iterations is evident in letters exchanged with the architect and mutual friend Alfredo Boulton, envisioning an outdoor sculpture exhibition throughout Caracas, and inviting the current young Turks of Paris modernism to participate[7]. As Jesus Fuenmayor details elsewhere in this volume, by the end of the 1960s Otero had attracted the attention of MIT with his Zona Feerica series of monumental motorized mobiles, constructed for a Venezuela that was purposefully investing its relatively newfound oil wealth in the development of a technologically advanced democratic utopia.

Jesus-Rafael Soto studied art in Caracas, and ran the Escuela de Artes Plasticas in Maracaibo from 1947-1950 prior to receiving a travel grant to go to Paris for six months, where he quickly fell in with the group of artists connected with Rene's gallery and the Salon des Realites Nouvelles, which included Vasarely, Tinguely and Yaacov Agam (b. 1928). For his first few years, while he developed optical reliefs that incorporated sheets of Plexiglas painted with layers and rows of dots whose arrangement would trigger a *moiré*-like effect as the viewer moved in relation to it, Soto made a living playing his guitar at cafes and restaurants. By 1954 he had arrived at the first of a series of works, *Metamorphosis*, that would qualify him for inclusion in *Le Mouvement*, and he rapidly became one of the leading representatives of the fledgling movement. Because works like Soto's 1954 *Desplazamiento de un Elemento Luminoso* made use of the inherent curvature of its plastic surfaces to magnify the optical impact of the viewer's location, it is also the earliest artwork included in this exhibition. Soto's singular ability to transform the flat two-dimensionality of Vasarely's optical compositions into an immersive sculptural experience that literally projected the visual experience away from the surface of the wall made him a formidable counterpart to the Israeli-born Agam, who had moved to Paris from Zurich a year later than Soto's arrival from Caracas, and followed a similar career path, with the two sharing the honor of being the two artists in *Le Mouvement* whose work was a genuine discovery, even to seasoned Parisian audiences.

The third Venezuelan artist included in this discussion, who made his maiden visit to Paris just as *Le Mouvement* was ending, was Carlos Cruz-Diez, who had only begun working in abstraction the year before, although his interest in color originated with his earlier research, while still a student, into Impressionism. Like Otero and Soto, Cruz-Diez had studied at the Esceula de Artes Plasticas y Aplicadas in Caracas, and participated in discussions with both men, but by 1957 his first encounter with kinetic art at the Rene gallery had pushed him into exploring the possibility of using colored light as a medium. Two years later, Cruz-Diez had become a kinetic artist himself through the invention of the *Physichromie*, which explore the physical

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[7] Letter from Alejandro Otero, from *Alfredo Boulton and his Contemporaries,* pp. 187-188, New York: Museum of Modern Art, 2008.

properties of light through the incorporation of numerous vertical ridges covering the painting's surface, whose gradations changed to the extent that each face of each ridge shows a different part of the same process. When viewed from a position directly standing in front of the painting, these ridges distribute the different colorations equally, but a shift to the left or right activates one position in favor of the other, and the effect on the painting's surface is as dramatic as it had been in Soto's works, with the main differences between the two artists being Cruz-Diez's interest in exploring a full palette and range of colors, while much of Soto's art verges on the monochromatic. Cruz-Diez's most ambitious early works, the *Chromostauration* series first developed in 1965, propels the viewer through a sequence of four rooms, each saturated with a different color, until emerging at the other end. As a direct precursor to the earliest room-size installations of James Turrell and Robert Irwin, Cruz-Diez's *Chromosaturation* was one of the 20th century's most complete expressions of pure color experienced separated from its application to a given surface.

Much as Alejandro Otero's late-1940s sojourn in Paris paved the way for Soto's later successes in that city, Gregorio Vardanega early career seems to have provided a similar blueprint relative to Le Parc, his junior by five years. By 1946, Vardanega was an active participant in the various manifesto-driven factions that thrived in Buenos Aires from the late 1940s through the 1950s, and producing partly transparent relief works using shaped Plexiglas perforated with tightly wound string, and multi-panel painted abstractions attached to vertical sheets of glass. Although Tomas Maldonado has the distinction of being the first Argentine artist of his generation to have traveled abroad in search of direct interaction with the titans of French modernism, in 1948 Vardanega made an extended visit to Paris with Grupo Madi co-founder Carmelo Arden Quin. There he met Denise Rene, Vantongerloo, Pevsner and Max Bill, among many others, and exhibited in prominent Parisian salons, including the *Salon de Amerique Latine*. Vardanega returned to Argentina in 1949, convinced that France offered a more promising future for his generation than Argentina, and it was partly as a result of his enthusiasm that Le Parc applied for the grant from the French government that would bring him to France in 1958. Vardanega and his wife, Martha Boto, followed suit a year later, but by the time of the move Vardanega's approach had already evolved into building his works around arrangements of colored lights timed in sequential patterns, and almost from the moment of their arrival, Boto and Vardanega each focused their artistic energies on developing a longstanding interest in harnessing the motor-driven movement of light for sculptural purposes. While their boxlike vignettes tend to function best in contained spaces, and Le Parc's more open-frame works using projected animated light soon filled much larger rooms, by the end of the 1950s all three artists share a number of overlapping interests. Between them, the frequently complex sequences and variations within Vardanega's programs edged closer to the problem-solving tasks that computer software would soon make universal, whereas the visual complexity of Martha Boto's work is

conveyed through the repetitive movement of multiple identical parts, which produces a continuous, illuminated flow.

The meteoric development of Julio Le Parc's work after his arrival in Paris is central to these considerations, if only because he appears to have played an unusually active role in the artistic trajectories of many of those artists who surrounded him, and he was among the first artists in any medium to articulate the physical and conceptual parameters of what would become installation art. During his studies at the Escuela Nacional de Bellas Artes in Buenos Aires, along with Horacio Garcia Rossi, Hugo Demarco and the Spanish-born Francisco Sobrino, Le Parc was a well-known student activist leader, and the mere coincidence of the three aforementioned artists moving to Paris at the same time as Le Parc, and, with him, becoming co-founders there of the collective Groupe de Recherche des Arts Visuels (GRAV), which generally eschewed object-making in favor of social action, is a fitting indication of his leadership qualities. Barely a year prior to winning the Golden Lion prize in Venice in 1966, Le Parc returned to the convention of signing his works as the production of a solitary artist, but his ability to connect a lifelong set of political convictions with the broad range of ideological paths available in postwar Paris was reinforced by his collaborative work with GRAV, which relentlessly pushed art toward a degree of social interaction that declared the public to be a co-author and primary collaborator. Le Parc has always been deeply concerned that his art be fully accessible to a public that possess no formal background in art, which at the time constituted a marked departure from the increasingly elitist direction of the artistic avant-garde operating in the rest of the world. In purely sculptural terms, Le Parc was also the first artist to fully flesh out the spatial possibilities of the electrically illuminated, or *lumiere*, option that had been hinted at as far back as the early 1950s, and which would in turn be elaborated upon by an entire generation of Le Parc's fellow Argentines, both Paris- and Buenos Aires-based: Boto, Vardanega, Horacio Garcia-Rossi, Hugo Demarco, Armando Durante, Perla Beneviste, and Eduardo Rodriguez.

Not surprisingly, the contribution of Horacio Garcia Rossi to the genesis and flourishing of Kinetic Art is integrally aligned with his close adolescent friendship with Le Parc. Before migrating to Paris and becoming a co-founder -- along with Francois Morellet, Yvaral (Vasarely's son), and Joel Stein, among others -- of GRAV, Garcia Rossi was producing kinetic-inspired gouaches at the end of the 1950s[8], and by 1963 he built his first machine-based box, although it required the viewer to turn its handle. His earliest light boxes, including one from 1965-66 framing his name in luminous block letters, demonstrates a degree of conceptual self-consciousness, largely because they were made with the prior knowledge of Le Parc's, Vardanega's

[8] It is generally acknowledged that this stylistic shift occurred in response to Vasarely's 1958 exhibition at the Museo Nacional de Bellas Artes.

and Boto's forays into the same formalistic niche. And yet Garcia Rossi's contribution to Kinetic Art remains distinct, insofar as he was able to employ screens, filters, and lenses to consistently distort the source of the illumination, so that it would undergo constant subtle shifts in its color, shape, and edge. Hewing as closely as possible to the iconic shapes of circle, line and point, Garcia Rossi developed an internally complex vocabulary of shifting colors and intensities that seemed to come from deep within the worm's core.

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The preceding historical narrative closely follows the contours of Popper's own long-published description of the rise of Kinetic Art, and, it is hardly surprising that his version strongly supports the unspoken yet implicit premise that in spite of the sheer productivity by kinetic artists working in Germany and Italy, Paris invariably functions as the movement's incontestable point of origin, just as it had done for all prior stylistic developments during the modern era. Even Kinetic Art's validation as an historical movement has always been implicitly understood as inseparable from its core location in Paris. While there is little point today in debating the relative accuracy of this reading, it does suggest a narrative overview of Kinetic Art grounded in the perspective that guiding principles behind the Latin American artists most active in the movement might be irrelevant to the movement's articulation as a European phenomenon. For Kinetic Art to have occurred as an 'international' movement, it has always been taken for granted that those artists who played a significant role during its years of maximum impact needed to have first left their various home countries, and traveled to Paris to gather with the artistic rebels and visionaries of all nations, forging new ideas and movements together as part of a universal fraternal order of like-minded poets, painters and intellectuals. Since that scenario did in fact turn out to be more or less true for many of the artists in this exhibition, there is an understandable tendency to want to make it true for all, in the service of an established historical fact that can be deployed to explain how the movement Kinetic Art developed more or less simultaneously in both Europe and South America, when in fact the actual trajectory of each artist's stylistic growth is considerably more nuanced than such an explanation permits, especially when considered together with the variety of events that continue to differentiate how such developments played out in Europe and South America. To take one example, Popper's formulation does not fully consider the implications of the iconoclastic Brazilian artist Abraham Palatnik, who in 1951 produced an installation-scaled, illuminated, machine-driven *Cinechromatic Device* for the inaugural edition of the Bienal de Sao Paulo, and in so doing paved the way for every light-based kinetic artist who followed, whether in South America or Europe. Nor does Popper's account fully explain the case of Alejandro Otero, who drew his deepest knowledge of artistic practice from years living in Paris, but only realized the scope of those ambitions on his return to Venezuela, where he seems fully

reconciled to the reality that during his lifetime, his art would reach a smaller public than it would have had he continued to produce on a more international stage.

Thus far, the Europe-South America artistic interchange has been described almost exclusively as a Paris-Venezuela and Paris-Argentina phenomenon, when in fact the confluence of ideas, events and artistic advances in Argentina and Venezuela from the mid-1940s forward, were increasingly synchronous with developments unfolding concurrently in other parts of the world, and in the case of Villanueva's Ciudad Universitaria, a step or two ahead of most. Argentine and Uruguayan abstract painting, particularly examples from the group Madi and its offshoots, was shown and discussed with some frequency in Paris through the late 1940s and early 1950s, to such an extent that Madi-originated ideas about shaped paintings, for example, were soon absorbed into a generalized European discourse about abstraction's more suggestive possibilities. Even given the reality that neither Argentina nor Venezuela could adequately support the kind of sustained generational transformation that artists from both countries were realizing through their works, it did not make them any less Latin American for persevering with their vision while thousands of miles away from their homelands.

To take the principle of contesting the conventionally Euro-normative view of Kinetic Art another step, one need look no further than the publication of a single issue of a vanguard publication about painting and poetry – *Arturo*, in 1944 --, which brought to the foreground one of Argentina's most influential 20th century artists, Gyula Kosice (1924-2016). Kosice, who was born near the Czech-Hungarian border and brought to Argentina by his parents at age four, became orphaned at age eleven, and subsequently raised by a bibliophile relative who as a matter of course exposed him to the art and writings of Leonardo da Vinci. An autodidact in both art and poetry – at which he particularly excelled --, Kosice was attuned from an early age to the possibilities of merging artistic and scientific ideals, and his greatest continuing project, *La Ciudad Hidroespacial*, was his consummate expression of a fusion of da Vinci's own philosophies. But despite his being co-founder of *Arturo* as well as an active member of both the Arte Concreto-Invencion Group and Arte Madi -- the latter continued to flourish despite Kosice's rancorous falling out with founder Carmelo Arden Quin a few years later --, Kosice's influence on Kinetic Art has never been properly evaluated. As co-founder of Madi, Kosice presented his early paintings (pseudonymously) as part of the Argentine representation -- selected by him -- at the 1948 *Salon des Realites Nouvelles* in Paris. The most sustained connection he would have with European developments occurred Kosice's second extended visit to Paris in 1957-58, where he met Vasarely and Rene and oversaw a group exhibition at her gallery of Arte Madi.

In considering the various reasons why, for most casual visitors to an exhibition of Latin American kinetic art, the name Gyula Kosice might remain largely unfamiliar, it is hard not to take into account that despite a second extended visit to Paris in 1962 and a year-long sojourn in New York solo in 1965, Kosice remained very much a lifelong resident of the city of Buenos Aires. With a growing family and a national reputation, Kosice, despite ambitions to be recognized at the international level, remained very much a part of a local scene, where his work remained relatively secure. Unfortunately, Kosice's absence from most histories of Kinetic Art after Popper's late-1960s effort can be explained not so much in terms of oversight as an intentional relegation to the margins of inconvenient information. Granted, Kosice's deep interest in hydraulics, his visionary insistence on spending decades in pursuit of a single theme, and his irascible temperament, combined with the gradual shift in art world fashion away from Kinetic Art in the 1970s and the political isolation of Argentina during the 1976-1981 military dictatorship, helped shrink Kosice's position from one of the acknowledged pioneers of Latin American Kinetic Art into someone whose achievements are known mostly to specialists. In so doing, it further obscured the deep points of connection between Kosice's achievements and those of Le Parc or Vardanega, and between Kosice and other Latin American artists, such as Palatnik, or the Romanian-born Cuban artist Sandi Darie, or even the Chilean kinetic artist Matilde Perez, who worked in a studio alongside Le Parc's for an extended period in the early 1960s, then returned to Santiago to develop her own brand of Kinetic Art in relative isolation for the next fifty years.

When considered in isolation with one another, such developments seem to be the exception to the rule, but taken as a whole they turn out to be as vital to the history of Kinetic Art as the stories of those artists whose names are incontestably associated with the movement's greatest achievements, such as Soto and Le Parc. In the case of Brazilian artist Abraham Palatnik, the peculiar circumstances of his having participated in the Bienal de Sao Paulo in the first place – he was invited at the last minute due to the unexpected cancellation of a group of Japanese artists – was compounded by the fact that biennial officials, satisfied that Palatnik's contribution was neither painting nor sculpture, simply excluded it from the catalog, despite the fact that it won a handful of international jury awards. The historic irony to his situation lies in the fact that the obscurity of his historic accomplishment trailed Palatnik for a time, since he did not fully perfect the workings of his portable *Cinechromatic Devices* until several years after the Bienal. Another factor counting against him is that, like many of the artists already discussed, Palatnike has a strong proclivity for creating non-Kinetic work, and his oeuvre actually includes a second variation of kinetic art, one much closer in spirit to the whimsical playfulness of a Calder than the enigmatic shadows and biomorphic shapes that emanate from his shadow-boxes. Possibly Palatnik's most remarkable achievement is having spent his entire artistic career working in an artistic context where his practice is unquestionably *sui generis*. Brazil does not simply lack a working base of kinetic artists – the very core of its artistic development from the 1950s forward lay in a

completely reconstituting European movements and tendencies using characteristically local elements, none of which occurs in Palatnik's output. He has never lacked for a loyal following, especially among younger artists captivated by his seeming autonomy from the vicissitudes of artistic taste, but neither has his example spawned a successor from succeeding generations. In that sense, Palatnik is Latin American Kinetic Art's first real trailblazer, and possibly its greatest iconoclast.

The Romanian-born Sandu Darie, while not a pioneer of Kinetic Art in Latin America to the same degree as Kosice, Soto, Palatnik or even Vardanega, was nonetheless the first artist working in Cuba to move beyond the stylistic limits of geometric abstraction to produce installations of moving sculptures that were recorded in turn using fluid camerawork. At a moment when Cuban art was fluctuating between revamped European modernism and a new social realism inspired by the 1959 Revolution that brought Fidel Castro to power, Darie was single-handedly exploring the future implications of video art by filming his installations and presenting the documentation under the umbrella title *Cosmorama*. Decades would pass before Darie's achievements were officially recognized, and despite his early acknowledgment of Kosice's influence on his ideas, in the mid-1960s no other Latin American artist had made the definitive leap from the physical object to the filmed encounter, and the *Cosmorama* documentation continues to offer an unexpectedly rich surprise to first-time viewers.

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It was suggested at the outset of this essay that the works in Kinesthesia might have something meaningful to express to the inhabitants of our time and place, and that conjecture is at least partly intended as a reference to the rapid emergence of the Light and Space movement in southern California during the 1960s and 1970s, just as the heyday of Kinetic Art was winding down several thousand miles away. Coinciding with the growing international acceptance of the importance of Light and Space over the past two decades, the history of its gestation as a movement also tracks the ongoing struggle that the movement's pioneers experienced in their efforts to attract national attention to their collective achievements, or at the very least a recognition of the geographical and cultural particularities of southern California that fed these artists' creative evolution. What is clear is that in the wake of *The Responsive Eye*, most U.S. interest in Latin American art centered on a loosely expressionist model of making art. Typical of these is *The Emergent Decade* (1966), a survey of the art of Latin American countries that was also an institutional collaboration between Cornell University and the Guggenheim Museum, with Thomas Messer serving as curator. Of fifty-five artists illustrated in the *Emergent Decade* exhibition catalog, an overwhelming majority work in a loose, brushy style, derived in varying degrees from expressionism, surrealism, primitivism, and/or folk

art; Jesus Soto is the only bona fide kinetic artist to have made the cut, and only in a section devoted to expats in Paris. The same year, the University Art Museum at Berkeley presented *Directions in Kinetic Sculpture*, with Peter Selz as curator of what was billed as the first U.S. survey of the subject. None of the participating artists in Selz's survey was from Latin America, but considerable effort was spent linking Americans like Fletcher Benton, Robert Breer, Len Lye, and George Rickey to their European contemporaries and predecessors: Pol Bury, Gianni Colombo, Takis, and Jean Tinguely. Between these examples, the clear suggestion is that, to the extent that a renovated conversation about kinetic art can be said to be happening in the art world, it was strictly limited to Western Europe and the U.S.

In short, at the precise historical moment when the artists in *Kinesthesia* were at the height of their creative powers, and just as the example set by *The Responsive Eye* – which did after all include Carlos Cruz-Diez, Luis Tomasello, and GRAV (Garcia-Rossi, Le Parc) – had begun to reverberate through the museum and critical establishment, one major U.S. museum presented an exhibition about contemporary South American painting that downplays its kinetic wing to the point of near-invisibility, while another major U.S. museum exhibition about kinetic art excludes Latin American artists altogether. How might such a dramatic informational lacuna have occurred? The likely answers in Messer's case are many: he saw the art his handlers wished him to see on his research trips, and made his selections accordingly; expat South Americans had become a unclassifiable category unto themselves; and he was likely uncomfortable with Latin American art that didn't conform with established stylistic categories. Selz's starting premise was probably more narrow to begin with: a scholar of German Expressionism, he appears to have first considered those European examples of kinetic art closest to his field of vision, -- the disproportionate favoring of German over French artists bears that out --, and then grafted on a hodgepodge of artists from his adopted country. At the very least, it can be safely assumed little or no incentive existed for either museum to seriously research either kinetic art or recent Latin American artistic developments, despite the fact that by 1966, Galerie Denise Rene had already presented solo exhibitions of Soto, Kosice, Boto, Vardanega and Luis Tomasello in her Paris gallery, and later that same year, Julio Le Parc would win the Golden Lion at the Venice Biennale.

The overall reluctance on the part of the American art world to embrace kinetic art during its heyday, while related to its Parisian and South American roots, was also pragmatic, in the sense that following Calder, relatively few artists in the U.S. were directly employing movement in their work, and those who tended to find themselves relegated to the fringes of the art world. Of the six Americans that Selz included in his 1966 exhibition, four stopped making kinetic art within a few years of the exhibition, and only Rickey continue to occupy a niche in American art history for having dedicated his professional career to concealing motorized infrastructures that animated his otherwise conventional welded steel sculptures. In fact, one of the

odd but uncontested realities of 20th century American art is that despite the fervent celebration within mass culture of all things new and technological, the incorporation of motorized movement and/or light has never been a prominent feature of American sculpture. Even those U.S.-based artists, from Nam June Paik to Jennifer Steinkamp, who over the past fifty years have gleefully exploited the metamorphic visual potential of new digital technologies, have tended to do so in the service of their imagery, not as a means of questioning the visual authority of the object itself. For better or worse, the U.S. never produced the equivalent of a Nicolas Schoffer (1912-1992), the Hungarian-born sculptor who moved to Paris in 1936 and spent a lifetime dazzling the art world with experiments using the spatial dynamics of light and color, eventually producing room-scale installations of whirling machines, whose movements were captured on continuous video feeds[9]. While such artists as Robert Whitman experimented with multiple projections, and Andy Warhol's *Exploding Plastic Inevitable* (1966-67) transformed the Happening into a sound and light spectacle, the closest American art ever came to a Schoffer was the Danish-born inventor-artist Thomas Wilfred (1889-1968), whose *Lumia* projections were written about admiringly as far back as 1922 by Laszlo Moholoy-Nagy, and who showed at MoMA alongside Pollock and Rothko in Dorothy Miller's 1952 *Fifteen Americans* exhibition. Despite MoMA commissioning the large-scale work *Lumia Suite, Opus 158* in 1964 for long-term display in the museum's lobby, and giving him a survey exhibition in 1971[10], Wilfred's work lingered in obscurity long after his death, until American director Terence Malick included passages of it in the opening and closing scenes of his 2011 film *Tree of Life*.

The case of Thomas Wilfred provides an unexpected point of connection between Latin American kinetic art from the mid-1950s through the late 1960s and West Coast Light and Space art of the late 1960 and 1970s, in the sense that at least one artist who saw Wilfred'ss work in MoMA as a boy was the future Light and Space pioneer James Turrell, who years later recalled being fascinated by the work's combination of engineering gadgetry and high-minded aesthetics. Setting aside such paeans, however Wilfred's career serves just as easily as a cautionary tale: despite being championed after years of struggle by such discerning patrons as Miller and Katherine Dreier, Wifred left New York shortly after WW II, and settled in West Nyack, where he worked in relative isolation for the last two decades of his life. Even after his late-career embrace by Howard Wise, the visionary dealer of electronic art, there was little critical or curatorial enthusiasm for Wilfred's work after he died, presumably because it had never been accepted as art by the art market, which

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[9] Nicolas Schoffer was the subject of numerous monographs published during his lifetime, including a 1963 book published by Editions de Griffon in Switzerland as part of the series *The Sculpture of the Twentieth Century.*

[10] MoMA's August 9, 1971 press release for the exhibition describes Wilfred as "the first artist of this century to use light as the sole means of expression."

tended to favor oil paintings and cast metal sculptures over opaque black boxes that blinked and flashed when their buttons were pushed, and could be repaired by any competent electrician. In a very real sense, the paradigm shift that Wilfred's art implies regarding art's materiality was a step too far for the New York market -- a situation not unlike that faced by a generation of southern California artists a few years later. The work of Turrell and Robert Irwin, certainly, but also Eric Orr, Doug Wheeler, Craig Kaufmann, and Dewain Valentine successfully challenged the material limits and perceptual boundaries of sculpture in way that baffled and confused a broad swath of East Coast viewers, while consolidating regional artistic principles set in motion in the 1950s by such abstract painters as John McLaughlin and Frederick Hammersley. In this way, with New York's general indifference as its backdrop, southern California's first truly international style was birthed.

Since the advent of a globalist paradigm for considering the history of 20th century art, conventional ideas of historical succession and influence are beginning to be understood more fluidly. Antecedents sometimes come to light long after the fact, and connections that might seem abundantly clear in retrospect may not have been anything of the sort at the time. This seems the best way of contemplating any discussion of a 'relationship' between Latin American kinetic artists of the 1950s and 1960s, and the surge of interest in light as both material and subject in the Light and Space generation. Just as Thomas Wilfred with his *Lumia* in New York almost certainly had no direct influence on Gyula Kosice in Buenos Aires and Abraham Palatnik in Rio de Janeiro, so it is worth venturing the premise that in the mid-1960s, almost nobody in Los Angeles was paying very close attention to the program at Instituto di Tela in Buenos Aires, the Galeria Bonino in New York, or even Galerie Denise Rene in Paris. Even after Julio Le Parc's Golden Lion award at the 1966 Venice Biennale, a full fifty years would pass until a museum in the US – the Perez Miami Art Museum -- would offer him a one-person exhibition, and very few individual examples of Le Parc's work have ever been shown on the West Coast. Despite the likelihood of such resemblances being little more than coincidence, it is worth considering how, with the advent of Thomas Wilfred's first luminous inventions and Naum Gabo's spinning machines, a trajectory of high-tech artistic creativity was launched that would help define the middle years of the century, until the digital age swept the 1970s and stunned any visionary remnants of the analog age into a protracted spell of suspended animation.

What Latin American Kinetic Art of the 1950s and 1960s is capable of articulating for a 21st century public is the shared desire to understand how our imaginations have always been transported by the elementary combination of movement, color and light. Today we are so accustomed to experiencing the manipulation of visual imagery through the use of digital tools whose workings we don't need to understand that the elaborate manual transformation of mechanical and optical parts that went into producing these abstract visual sensations seems nearly as

distant and primordial to us as cave paintings viewed by a campfire's light. The flickering shadows and shifting palettes that we experience through the Kinesthesia artists operate as a coded message sent to us by our analog forebears, who after all had no awareness of the boundary-less realm of the digital that was about to burst open the world. They achieved, through their fusion of private invention and traditional techniques, a hybrid state of feeling, in which the humming and blinking machines all around us seem to be trying to communicate sublime messages, if only we would make the effort to understand them. The realm of mechanization, which would loom in art's background for so much of the 20th century, might seem impoverished and hokey when considered within the context of the visceral clarity and intensity with which screens and projections today can transport us to other worlds. But there is nothing that inspires a reconsideration of the archaic tools and formulas of the recent past quite like the realization that the most sophisticated digital visualizing tools in the world cannot compare to witnessing the remarkable visions can be conjured through the precise use of a simple motor, a single colored light bulb and a translucent screen just thick enough to camouflage the moving parts and frame the flickering shadows.