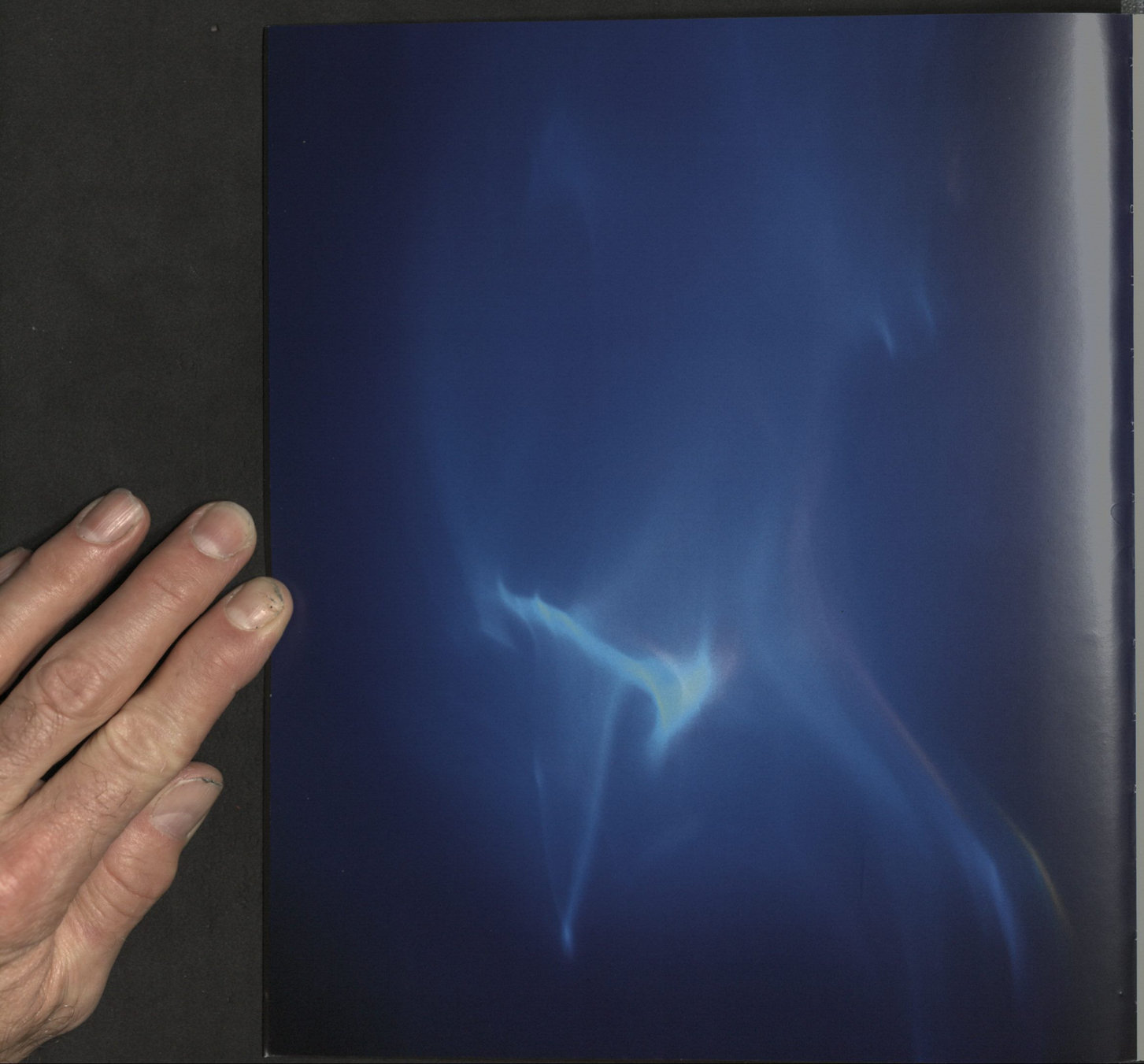

LUMIA

THOMAS WILFRED AND THE ART OF LIGHT

KEELY ORGEMAN

With a foreword by James Turrell

And essays by Maibritt Borgen, Jason DeBlock,
Carol Snow, and Gregory Zinman

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Lumia and Postwar Art: Space, Time, Drama

Maibritt Borgen

In lumia, your sole medium of expression is light. You must fashion it into form, color and motion. . . . You must project your visual sequence onto a flat white screen with such skill that your form elements appear to have volume, and to move through three-dimensional orbits in space.

—Thomas Wilfred, 1948

For almost a decade and a half, Thomas Wilfred's magnum opus, *Lumia Suite, Op. 158* (pl. 13), spellbound visitors to the Museum of Modern Art (MoMA) in New York.[1] In the darkness of its specially constructed theater, spectators encountered a continuous flow of brightly colored, seemingly three-dimensional luminous forms that morphed endlessly on a backlit six-by-eight-foot screen. "Lumia," as Wilfred called the self-invented medium in which he worked, was a potent reply to one of modern art's most radical proposals: the idea that aesthetic form could capture not only space but also movement and time, and that, perhaps, it could extend this manifestation to truly communicate lived experience.

The attempt to make inanimate material express movement has a long trajectory in the history of twentieth-century art. Pablo Picasso and Georges Braque's first Cubist paintings are considered a watershed moment in the history of modern art—a moment that overlapped with the exact time during which Wilfred was advancing his lumia experiments while in Paris studying painting and music at the Sorbonne, from 1908 to 1910.[2] In their paintings, Picasso and Braque represented everyday objects as intersecting planes within the frame. Each plane existed in a separate "time-space," and the coexistence of these planes gave the viewer the impression that their position in front of the object continuously shifted. In this way, Picasso and Braque effectively transformed the object on the canvas from a static, singular form into a series of representations or continuous perceptions, a sequence of events progressing over time. Marcel Duchamp, an artist who later became aware of Wilfred's work, continued this investigation with his famous Cubist painting *Nude Descending a Staircase (No. 2)* (fig. 1), in which he attempted to depict the continuous flow of a body as it moved through space.[3] As this essay will show, this interest in temporality forms a crucial foundation for the later, close relationship between lumia and the postwar American painting that subsequently developed concurrent to Wilfred's own explorations. This relationship determined Wilfred's place within a set of collection and exhibition practices at MoMA, the institution that remained the biggest supporter of Wilfred's art through his mid- and late career.

Wilfred's interest in three-dimensionality that extends beyond the frame of the screen can be seen in another of his drawings, which shows the effect he hoped this would have on the viewing experience (fig. 3). As Wilfred's lumia forms traverse the screen or the frame, they move through what the artist called the "first field," or the *visible* section of space. In the notes on the drawing, Wilfred wrote that the artist "aims to perform [a lumia work] so convincingly spatial that the spectator imagines he is seeing it through a large window in the cabin of a magic space-liner." Seated in front of this imaginary window, the viewer may see only a fraction of a total form at any given moment, but he or she is at the same time completely surrounded by and aware of the totality of the cosmos. Thus, a lumia composition extends the movement of forms beyond the screen, or first field, and into the "second field." In Wilfred's words, it extends in the viewer's eyes "beyond the seen and into the world of imagination."[13] In this way, Wilfred states, "Most lumia compositions may . . . be considered as an extensive visual realm completely surrounding the spectator."[14] Wilfred attempted with his lumia compositions to breach a space dimension beyond that of the screen, beyond the sheer marvel of viewing something technologically and aesthetically groundbreaking, to a spiritual experience of reaching toward elements of the natural and other worlds.[15]

Wilfred's enduring attempts to breach the imaginable scales of time anchors this spiritual experience. With its endless possibilities for variations in color and form, *Lumia Suite*—if its duration is defined as the interval between instances in which a specific form-group repeats—is practically infinite.[16] While Duchamp, in *Nude Descending a Staircase*, thus compressed the continuous flow of a body traversing a space into a sequence of moments or snapshots within the picture frame, Wilfred consistently insisted on foregrounding lumia's ability for *continuous* movement. He avowed the priority of this element in a lumia composition—so much so that he was reluctant to even capture lumia on film, as it would subdue its continuous flow to the limits of twenty-four frames per second. Such emphasis on uninterrupted flow can be read in relation to the philosophical problem of how to bridge the gap between the actual, lived experience of moving through the world (the real) and the representation of that experience in aesthetic form (art). Early twentieth-century French philosopher Henri Bergson called the lived experience of moving through the world *la durée* (duration).[17] To Bergson, duration, the true experience of being in the world at any given moment, can only be felt, because it is housed in the perceiving body. It cannot be translated into form, as it remains a conscious experience that is rooted in the continuous unfolding of a present moment. Representation, on the other hand, must always choose between representing time as a trajectory between two points or freezing a single moment in time, making it forever static. These choices separate representation from the real. As Bergson said, "It is not the 'states,' simple snapshots we have taken once again along the course of change, that are real; on the contrary, it is flux, the continuity of transition, it is change itself that is real."[18] Wilfred's lumia compositions, which the artist described as "free of time and space," can be read as attempts to depict Bergsonian duration.[19] Through lumia's gliding forms, Wilfred aimed to visualize the true sensation that the body feels as it moves through the world. In Wilfred's words, "Life itself is a drama in time and space. So is lumia."[20]

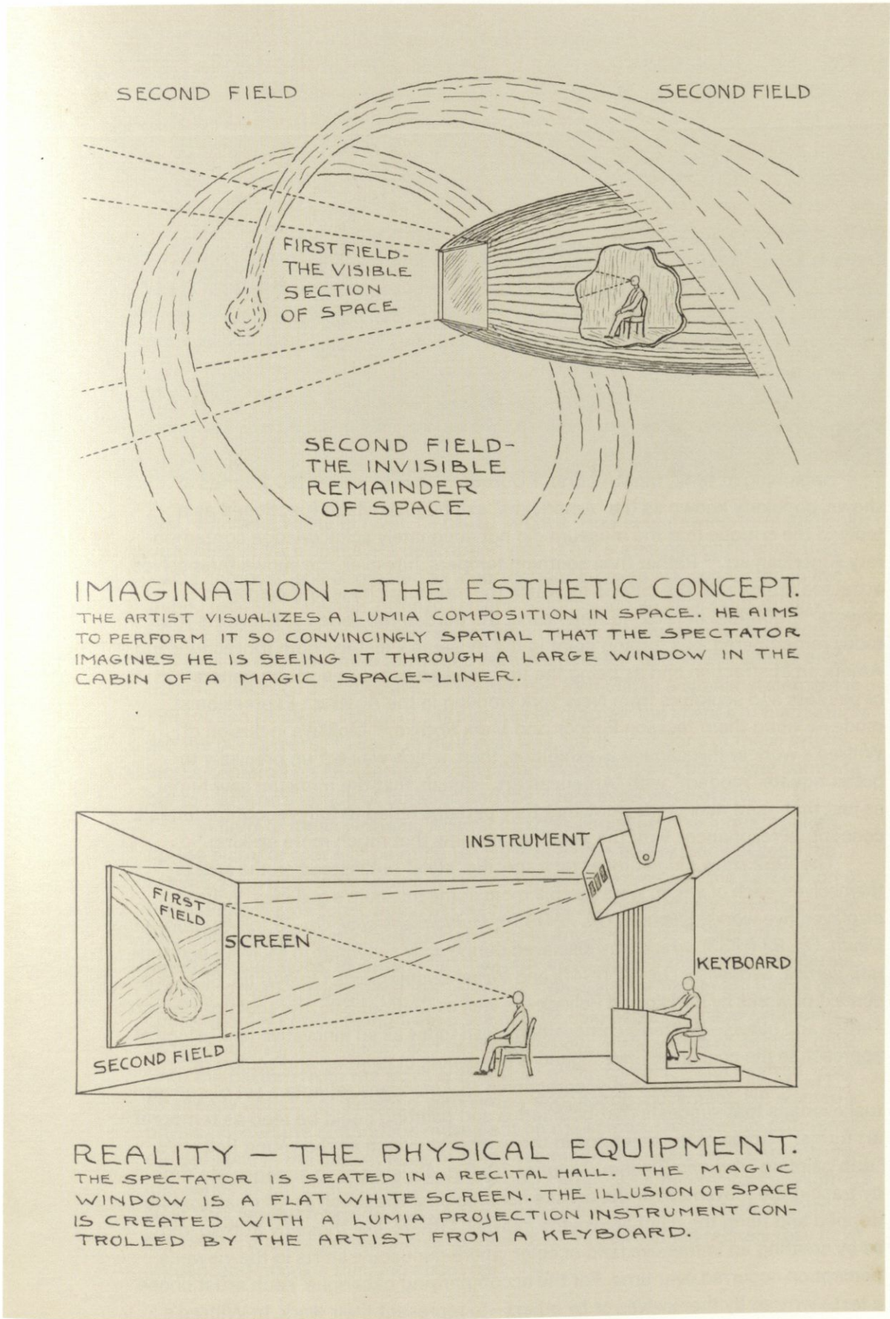


FIG. 3.
Thomas Wilfred, *Imagination—the Esthetic Concept; Reality—the Physical Equipment*, ca. 1940-50. Ink on paper. Thomas Wilfred Papers (MS 1375), box 22, folder 244, Manuscripts and Archives, Yale University Library, New Haven, Conn.

FIG. 1. Color records from *Unit #86*, from the *Clavilux Junior (First Home Clavilux Model)* series (pl. 3)

chandelier crystals and other pieces of glued-on glass—what he called a "lens disc"—to further distort the light that would be projected from the mechanism.[6] Later in his career, from about the 1940s until his death, he instead favored the hand-painted color records as well as a new type of record consisting of variously shaped pieces of colored glass in many different shades with some aluminum inserts, all loosely fit together (to allow for thermal expansion) and secured with bronze wire and lead solder within bronze caming—similar to stained glass (fig. 2). As plastic theater gels became available in the 1950s, Wilfred incorporated strips of those into another type of disc, which he called a "color rotor" (fig. 3).[7]

From light and color Wilfred created form. In a 1931 interview the artist stated, "These pictures [in lumia] are built up in three dimensions as a sculptor shapes a statue. . . . They have a depth impossible to obtain with oils and water-colors, and furthermore they are imperishable since the colors are fused in glass."[8] Wilfred manipulated light in myriad ways, filtering it through colored glass, refracting it through clear lenses and ribbed glass, diffracting it around cut sheet metal, and reflecting it off polished aluminum and concave mirrors—all without any formal training in physics. The "canvases" for these works—the materials onto which he projected light—were curved illustration board, translucent glass, and rear-projection screens.

In the late 1920s, Wilfred began to abandon his lever-controlled lumia, such as his first performance Claviluxes, and instead created objects that incorporated electric motors, switches, gears, chains, cables, and counterweights. His lumia thus became more complex and more kinetic, and yet the objects themselves were drastically reduced in scale and were now made to be operable by anyone, not

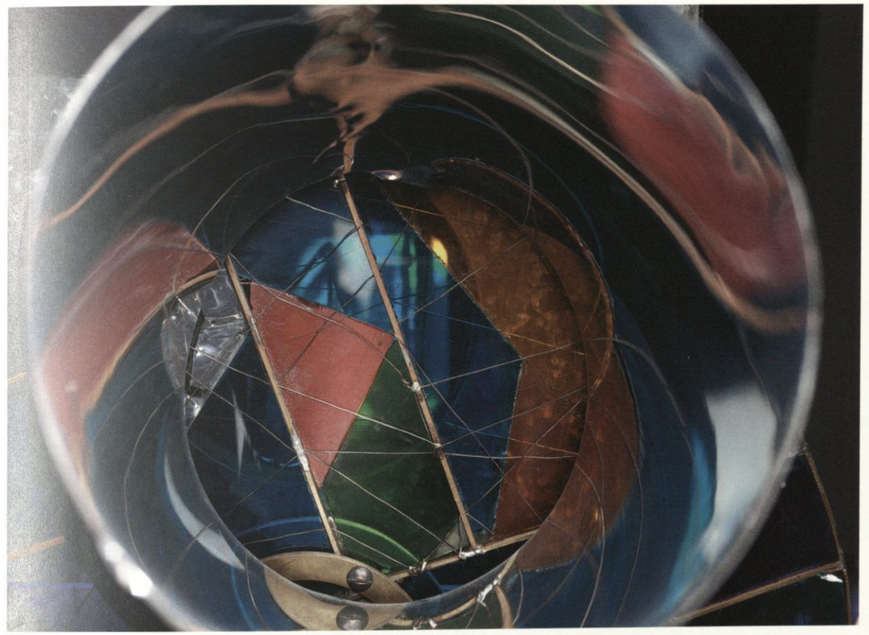


FIG. 2. Detail of cut glass color record from *Lumia Suite, Op. 158* (pl. 13)

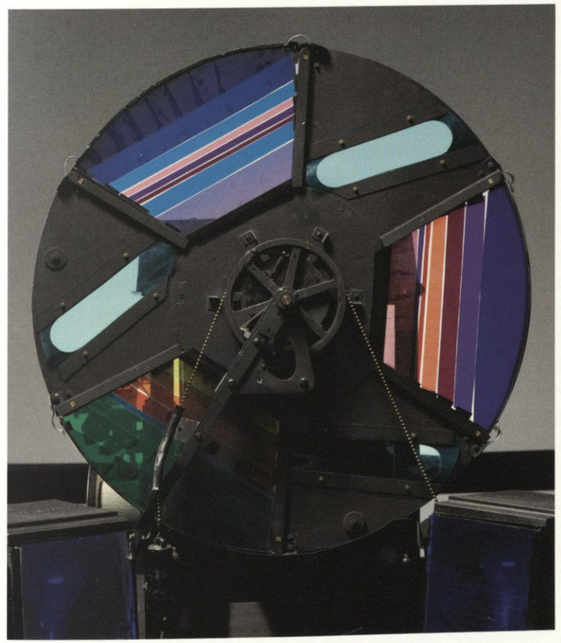


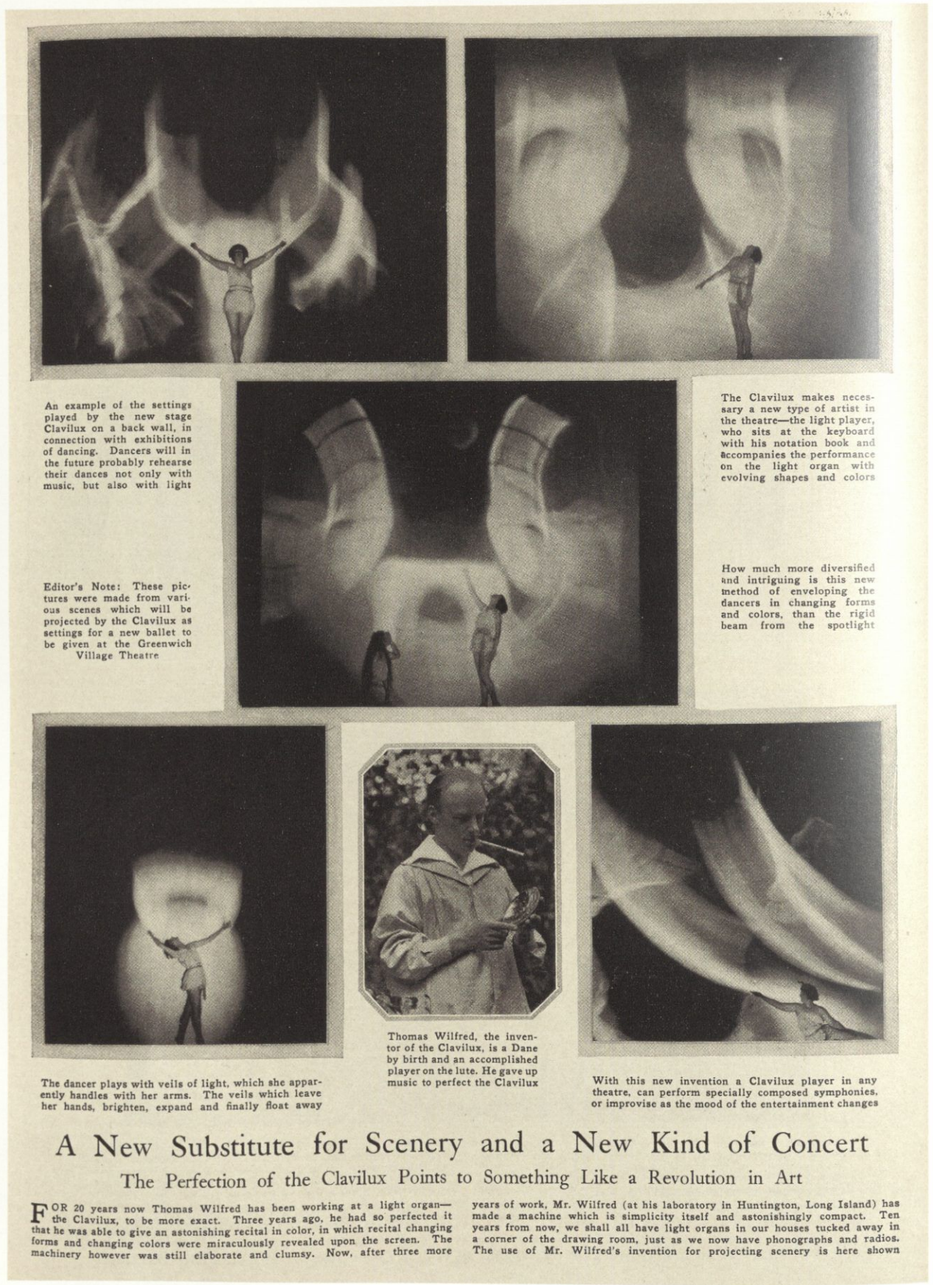
FIG. 3. Color rotor from *Lumia Suite, Op. 158* (pl. 13)

Thomas Wilfred's Aesthetic Legacy

Gregory Zinman

In May 1925, *Vanity Fair* ran a series of photographs of Danish émigré artist and inventor Thomas Wilfred and images from his Clavilux (fig. 1), a playable projection apparatus with sliders and keys that made use of a reflective mirror, small rotating platforms, and bent pieces of metal to shape light thrown by a series of lamps and lenses. Guided by Wilfred's hands, the Clavilux produced slowly morphing apparitions of shifting form and vibrant color, flames of jewel-like brilliance. Wilfred called this art of light "lumia." When the magazine featured the Clavilux, its light effects employed as a backdrop for ballet dancers, it was an attempt at prescience. "Ten years from now," the accompanying text declared, "we shall all have light organs in our houses tucked away in the corner of the drawing room, just as we now have phonographs and radios."[1] *Vanity Fair* was not alone in its enthusiasm for Wilfred's work; in 1930 *Scientific American* similarly averred that the Clavilux would soon be "superseding the fire-place," claiming a home in living rooms worldwide.[2] While these predictions concerning lumia's imminent ubiquity may not have come true, Wilfred's light shone brightly in a variety of media forms and practices throughout the twentieth century, and it continues to illuminate others in the twenty-first. Lumia's legacy reveals a shared desire among artists working across decades and in a variety of media to create, modify, or rethink technology in an effort to produce transcendent art.

Even in the earliest days of Wilfred's performances, critics believed that his lumia compositions had significant implications for other media. Several of the era's contemporaneous art-historical volumes, including Willard Huntington Wright's *The Future of Painting* (1923), Sheldon Cheney's *A Primer for Modern Art* (1924), and László Moholy-Nagy's *Malerei, Fotografie, Film* (Painting, Photography, Film; 1925) opined that painting's potential rested in the projection of colored light.[3] Cheney, for one, argued that "color music" was a logical progression from painting and compared Wilfred's lumia compositions to "a super-colored movie" that eschewed figuration. He was particularly impressed with the way in which a lumia work took on "a new dimension," imparting depth to the moving image: "It appears not on a sheet or wall, but plastically, as a space composition in color rather than painting in color, as an interpenetrating, space art rather than an imposed two-dimensional art."[4] The analogies to other art forms, the combined use of light, time, and space, and the invocation of a "spiritual and radiant art," as Cheney later termed lumia, all came to be associated with Wilfred and his work, as well as with those who followed him. In this way, Wilfred functions as an aesthetic connector, linking wide-ranging developments across film, kinetic art, painting, performance, video, and installation art.



An example of the settings played by the new stage Clavilux on a back wall, in connection with exhibitions of dancing. Dancers will in the future probably rehearse their dances not only with music, but also with light

Editor's Note: These pictures were made from various scenes which will be projected by the Clavilux as settings for a new ballet to be given at the Greenwich Village Theatre

The Clavilux makes necessary a new type of artist in the theatre—the light player, who sits at the keyboard with his notation book and accompanies the performance on the light organ with evolving shapes and colors

How much more diversified and intriguing is this new method of enveloping the dancers in changing forms and colors, than the rigid beam from the spotlight

The dancer plays with veils of light, which she apparently handles with her arms. The veils which leave her hands, brighten, expand and finally float away

Thomas Wilfred, the inventor of the Clavilux, is a Dane by birth and an accomplished player on the lute. He gave up music to perfect the Clavilux

With this new invention a Clavilux player in any theatre, can perform specially composed symphonies, or improvise as the mood of the entertainment changes

A New Substitute for Scenery and a New Kind of Concert

The Perfection of the Clavilux Points to Something Like a Revolution in Art

FOR 20 years now Thomas Wilfred has been working at a light organ—the Clavilux, to be more exact. Three years ago, he had so perfected it that he was able to give an astonishing recital in color, in which recital changing forms and changing colors were miraculously revealed upon the screen. The machinery however was still elaborate and clumsy. Now, after three more years of work, Mr. Wilfred (at his laboratory in Huntington, Long Island) has made a machine which is simplicity itself and astonishingly compact. Ten years from now, we shall all have light organs in our houses tucked away in a corner of the drawing room, just as we now have phonographs and radios. The use of Mr. Wilfred's invention for projecting scenery is here shown

FIG. 1. "A New Substitute for Scenery and a New Kind of Concert," *Vanity Fair* (May 1925): 67

Lumia's potential applicability to other media can be seen, for example, in critic and theorist Gene Youngblood's groundbreaking book *Expanded Cinema* (1970), a sweeping, techno-psychedelic treatise on the emergent, unbounded sensibilities in the media arts, which begins its chapter "Intermedia" with a quote from Wilfred:

> Shall we . . . use the new art as a vehicle for a new message and express the human longing which light has always symbolized, a longing for greater reality, a cosmic consciousness, a balance between the human entity and the great common denominator, the universal rhythmic flow?[5]

Wilfred's art arose out of such contradictions. He sought an art that was both imminent and transcendent, one that simultaneously expressed the ineffable while evoking natural phenomena. He achieved this through technological ingenuity, creating idiosyncratic light instruments and devices that stretched both light and time. "The universal rhythmic flow" that Wilfred associated with lumia was contained within all things and all people, and yet he also strove for a "greater reality" wherein humanity could reach beyond its own senses and understanding. He worked tirelessly, constantly revisiting and revising the design and construction of his various apparatuses to make his lumia effects seem more mysterious and otherworldly. He insisted that lumia was "the eighth art" even as he found rhetorical footing by invoking other media to describe or promote his work. At times, for example, he suggested that lumia was an evolutionary development in painting, in that it brought a time element to abstraction. In 1948 he wrote,

> Painting remains a static art in the sense that it can only suggest motion, but abstract and non-objective directions in painting have led us to a closed gate beyond which lies the realm of motion. Lumia is the key to this gate. We have opened it ajar and we stand on the threshold, awestruck, quite bewildered, with a feeling of tremendous responsibility.[6]

Scholar Stephen Eskilson has also pointed out that even as Wilfred endeavored to establish lumia as an independent art, he was not so dogmatic as to resist using analogies to other arts to introduce his work to a wider audience.[7] Between 1928 and 1935, Wilfred began to move away from his live "recitals" with the Clavilux, focusing instead on constructing a type of self-playing module that could be displayed in the manner of an easel painting or sculpture. This device was called the *Clavilux Junior* (or *First Home Clavilux Model*) (see Orgeman, fig. 2), and was housed in a wooden cabinet, taking on a physical appearance similar to other domestic electronic appliances, such as the radio, the phonograph, and eventually, the television. Given the diversity of lumia's technological iterations, applications, and reception, it is therefore unsurprising that the art made by Wilfred's aesthetic and conceptual followers rarely matches the breadth of his output. Nevertheless, his legacy is evident in the pursuits of other artists who explore light as a medium and who share a conceptual interest in creating work that transmits a sensation