FRANK MALINA: LIGHT ART AND SCIENTIFIC ABSTRACTION

edited by Camille Fremontier. The preface was by Roger Malina, the contributions were by Margit Rosen and Annikki Luukela, and the interview with Frank Malina was conducted by Frank Popper. Published with RCM Galerie, 2025. 252 pp., illus. ISBN: 978-2-37896-558-7.

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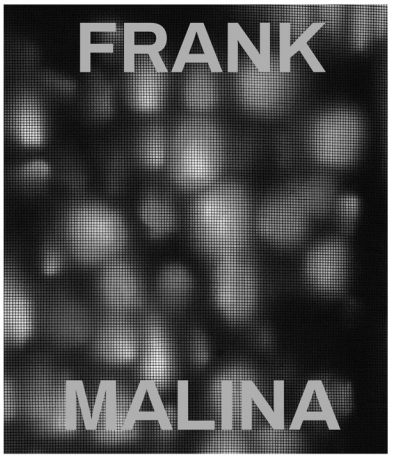
The artist Frank J. Malina (1912–1981) is renowned across the Leonardo community as the founder of the *Leonardo* journal. Many within the community also know that he was one of the fathers of light art. Yet, given the breadth of his accomplishments as an artist and scientist, it is striking that *Frank Malina: Light Art and Scientific Abstraction* is the first comprehensive work to focus on his art. As the book presents the superb pictorial luminosity of the artist's pioneering artwork, it also places his artwork within the context of his remarkable life as both an artist and a scientist. This valuable resource makes it possible to now supersede the vague sketch many of us have about his life and replace it with a more comprehensive understanding of his depth and cross-disciplinary achievements.



To amplify, *Frank Malina: Light Art and Scientific Abstraction* conveys how he navigated the political, security, and multimedia creative landscape of the Cold War as he transitioned from aerospace engineering to art. Born in America to musician parents of Czech origin, Malina began his career as a ground-breaking rocket scientist before becoming a United Nations diplomat, an artist, and then a publisher and author. From 1944 to 1946, he was a cofounder and director of the Jet Propulsion Laboratory in Pasadena, the primary American university rocket laboratory, before falling victim to the McCarthy era witch-hunt. Here, unfortunately, his story recalls much that is in the news today. In 1946, Malina began to spend time with UNESCO in Paris and was soon forced to resign due to his left-wing politics. Taking advantage of the Parisian milieu, Malina decided to pursue art. Then, in 1951, the United States refused to renew his passport, leaving him stranded. Unlike many caught up in the biases of politicians today, Malina was able to transition to art because dividends from Aerojet, a company he had founded a decade earlier, gave him the financial security he needed to underwrite his art practice. The journal *Leonardo* was begun in 1968. One takeaway was how artfully he blended his American cultural heritage with the ambitions of the European avant-garde art world while retaining his scientific stature.

Another is how his trademark interdisciplinary and inter-community exchanges paved the way for the many art/science collaborations today that are now inscribed within the mission of the *Leonardo* community overall.

Given that his son Roger Malina has broadened Frank Malina's cross-disciplinary legacy, it was not surprising to see that he authored a preface to this book. What was surprising was to discover that the young Malina also contributed to an early work: *The Family with Roger's Help* (1953). In an interview, Frank Malina told Frank Popper: "[I used] pieces of paper and built up that collage as the background with copies of the child's drawings he (Roger) made at the age of 3" (p. 84).

By 1954, Frank Malina's artistic career was professionally established when the Paris Museum of Modern Art purchased *Deep Shadows*. The FBI noted the sale in their file on him, showing the degree to which they monitored his activities even while he was in Europe. By contrast, Malina wrote to his parents that this sale officially baptized him as an artist. From there, his career blossomed. He exhibited extensively, and his groundbreaking work soon found its way into many collections such as the Pompidou Center in Paris, the Smithsonian Institute, ZKM in Germany, and the National Gallery in Prague.

Additionally, the book demonstrates how Malina's manifold vision threaded his artistic and scientific mind together. His ability to visualize solutions to complex problems is noteworthy, as is the fact that he melded the two approaches throughout his life, even before calling himself an artist and becoming involved with the art world directly. For example, Frank Malina financed his bachelor's degree at Texas A&M by doing illustrations for science books.

Similarly, his fascination with manipulating materials served him well in both art and science. We see this in Malina's first kinetic paintings. He used a system of switches, which accentuated that he was not trying to represent light or movement in the manner of the Impressionists. Rather, his desire was to create his works of art through the material use of light and movement. On the one hand, he saw his materialist approach to painting as derived from Constructivism and the Bauhaus. On the other hand, it gave him a means of expression that allowed him to capitalize on his scientific interests, and his work clearly expresses this. Not only did his penchant for scientific subjects lend itself to his art, but we also see him as a problem-solver. For example, when working with electric light, he had to resolve the issue of how to prevent the overheating of canvas. By 1955, he was incorporating light and movement into his art. Randomness followed. Chess was also a recurring theme in his work. His range included string and wire paintings, narrative paintings, and moiré paintings. In the book, we also find some more unexpected works, such as his pastel portrait of Theodore von Kármán (1952), his thesis advisor and colleague.

Malina's evocative grids are among the series that expose how perceptually illuminating the work is. They stand out visually, and it is evident that these are livelier and more perceptually dynamic than the static structural look of most Mondrians. Commenting on the Mondrian approach, Malina insightfully explains the difference. Mondrian was seeking to present a spiritual system of universals; he felt that curved lines were too emotional to be drawn. As Malina notes, "therefore everything must be rectilinear. This is an arbitrary assumption and pushes you out of the real world" (p. 136). He also said, "I'll tell you what worries me with Mondrian: he tries to say this is the only way. It becomes such an obsession that anyone who doesn't work only in the rectilinear patterns is not really aesthetically correct" (p. 134).

Given Mondrian's devotion to spiritual universals, it is worth noting that, like Gombrich, Malina felt that artistic expression cannot exist without a dialogue with the cultural context in which it is produced. Indeed, in terms of the artwork, it is Malina's recognition of the hands-on

details within an art practice—or process— and its diversity that stands out, even as he incorporates scientific universals into his own pursuits. The upshot is that the book is intellectually stimulating and maintains a lively pace as it walks the reader through how Frank Malina experimented to achieve results.

Extensive quotations juxtaposed with the rich imagery provide a further window into how Malina viewed his process. Some of his thoughts on art were taken from his correspondence. Other primary commentary comes from a 12 December 1962 interview with Frank Popper that I wish had been longer. In terms of art as a language of communication, Malina's thoughts brought to mind those of Peter Bradley, a painter whose career I recently reviewed in *Leonardo.* In that piece, I noted that Bradley showed no interest in incorporating technology into his painting process. Yet, his comments on abstract art as a genre with its own vocabulary were very comparable to Malina's. It was fascinating to see that both artists reached the same conclusion despite adopting totally different tools and themes in their approach to artmaking.

Aside from Roger Malina's preface and Frank Popper's interview, there are other noteworthy contributions. One essay by Camille Fremontier traces his life's interdisciplinary trajectory. His assistant Annikki Luukela talks about working in Malina's studio early in her career. Margit Rosen sums up his legacy in an essay entitled "The Scientist's Brain, the Poet's Heart, the Painter's Eyes." She drew this title from *The New Landscape in Art and Science*, where György Kepes wrote that we must "use all of our faculties to the full—assimilate with the scientist's brain, the poet's heart, the painter's eyes" [1]. Kepes, another father of light art, was Malina's colleague and friend.

In summary, the strength of *Frank Malina: Light Art and Scientific Abstraction* derives from its clear design and the use of a robust selection of images to introduce artwork. The book's large format brings the reader into the work. It works as a communication device by positioning black-and-white photographs of the artist next to an expressive color reproduction of the artworks discussed. Enlarged details further highlight features and are used as spreads between sections. These thoughtful elements add clarity to the presentation.

While the range of the book is impressive, it was also clear that it only offered a hint of the artworks' luminosity. This led me to conclude that the book offers a delicious taste of the work and its perceptual impact. Saying this, I must also acknowledge that seeing Frank Malina's pieces at their actual size and scale would provide a physical presence that would offer much more. In fact, this opportunity will soon be available at RCM Galerie, where they are presently launching an exhibition that will include kinetic art, string and moiré paintings, and some 1950s technology devices he developed to make iterative sculpture. Although visiting with the work itself would be ideal, without a doubt, this book adds immensely to our understanding of this artist's path and projects. For those who cannot visit the exhibition, this book ably captures the artist and places him within his interdisciplinary community. I highly recommend it to libraries and anyone connected to the *Leonardo* community's mission.

Reference

1 G. Kepes, *The New Landscape in Art and Science* (P. Theobald, 1956), 286.

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