

## Relationships of Science, Mathematics and My Constructive Art: A Personal Survey

Thomas Michael Stephens  
Art Research Center  
4923 Walnut Street  
Kansas City, Missouri 64112

The real source of all technical progress: **divine inquisitiveness**; and the instinct for play, the constructive and pondering researcher; and, no less the constructive imagination – the technical inventor. The technicians not only ease the daily work of humans, but also make available the works of the finest thinkers and artists to the general public.

Einstein

Like Sherlock Holmes, Captain Nemo, Carroll's Alice, and Wells' Time Traveler; Albert Einstein was a major mythic inspiration of my youth (a sort of scientific Cyrano). I came to mathematics as I did to science, theatre and art for the **visualizable demonstration** of such literary **mythos** through number geometry: topology – 'the shape of things to come.' Stimulated by existentialism and science fiction, I laboriously studied creative writing simultaneously with physics, art history and theatrical design, which led to a thesis on "Theatre of the Bauhaus" and immersion in Moholy's *Vision in Motion* resulting in my first kinetic and luminal **abstract** stage design.

My painting became purely abstract; invented, constructed – dynamically asymmetric. My paintings of 1964 (shown in my co-founded New Center USArt Gallery) were horizontal, rectangular with 'acentric intersection.' These "Blue Paintings" led to 'projective reliefs' then to suspended curvilinear, kinetic works. Beginning more multi-disciplinary collaboration, traveling and lecturing I met Naum Gabo (one of the first Russian Constructivists), R. Buckminster Fuller (philosopher/engineer of geodesics), Charles Biederman (*Evolution of Visual Knowledge*), Len Lye (America's first kinetic artist/filmmaker) and Gyorgy Kepes (*The New Landscape, Vision + Value*); all whose ideas had urged me on. By 1966 (the first exhibition of the new collective group, Art Research Center) my work was well into kinetic 3D constructions from linear Möbius and complex curves (some utilizing minimal surface-to-area forms). Arriving at a "Universal Model" concept I began to insist that geometric structuring and curvilinear patterning were synthesized through motion.

Renewed interest in mathematics was apparent in my architectural maquettes and speculative structures in A.R.C.'s Symposium on Art, Science and Technology at Linda Hall Library in 1967 (with our exhibition in the space where Newton's *Principia* was displayed). In 1968 began the computerization of the complex curves into grid-skinned surfaces I termed "warped planes;" overlapped versions of these drawings I began to show in *New Tendencies* (4, Zagreb, 1969). These shapes were also made physical as inflated vinyl and translated into actual motorized wire grids, or engraved suspended luminal drawings in space in a series of exhibitions (begun at The Electric Gallery, Toronto, 1974) entitled "Mined

Warps." Probably from my experience with experimental theater, I developed a playful, humorous approach to perceptual concepts of 2D to 3D to 4D (before and beyond).

Reexamination of earlier "Blue Paintings" and a multitude of drawings revealed the presence of underlying 'Divine Proportions.' So evolved a new set of six basic Linear Golden Rectangle Drawings and their grid matrix. [*A.R.C.'s international drawing and print exhibition MATRIX of 1972-73 dealt with 'grids systems', 'continuous field' and 'dimensional ambiguity'; the essence of the problems of planar draftsmanship.*] Still preoccupied by space, I layered my new modular and golden rectangle works as sets of four to six suspended panels of transparent or translucent mesh or perforated metal (visual interference materials) in a series of exhibitions entitled "Layers of Space." These efforts continue with the inclusion of "coin-and-die" tapestries, wall hangings, sand-blasted glass and now modular reliefs and collage, often with "impossible space" images.

Collaborative works on huge "public celebrative and constructive events" with the A.R.C. Group toured in the US, Canada and Europe building tension structures, "space-nets" of helium-filled balloons; multimedia systems (light and scenic projection) in domes and giant cylindrical theatres proclaimed our work as "Analysis, Structure and Joy" (*NT5*, Zagreb, 1973).

Teaching experimental photography and film-making allowed me to incorporate my proportional compositional interests as well as kinetic theatricality in abstract, animated films and special light workshops. Experimental theatre/performance based on constructivist principles of "reciprocity" of "module and movement" paralleled sound works of "resonance and duration," since 1971 forward.

Architectonic applications of modular, systematic, and even kinetic ideas have produced 'public space' planning, design and construction of parks, plazas, wall graphics and large site works from the sixties through the nineties.

Finally (especially since my 1989 presentation at the great Madrid Exhibition and Conference on *Constructive and Systematic Art*) I have maintained and expanded my interest in linguistics and structural writing. For me, like music for Leibnitz, poetry is "...a hidden practice of the soul, which does not know that it is dealing with number."