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ARTIST INTERVIEW

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I'd like to start by asking about your background. You are a trained engineer. How and why did you become an artist?

I was exposed to photography by my grandfather, and to science by my father. My father was an aerospace engineer who encouraged my involvement with science and technology. Growing up, a lot of our dinner conversations revolved around his field and he helped me set up a laboratory in our basement where I could experiment. I went to Brooklyn Technical High School to study pre-electrical engineering, araduatina in 1959. I then went to the Carneaie Institute of Technology, where I studied electrical engineering before receiving a Bachelor of Science degree in 1963. I spent the summer of 1963 studying photography and mural painting at the Instituto Allende in San Miguel de Allende in Mexico, after which I traveled to Los Angeles to take an engineering job at Wyle Laboratories. I was employed as a senior instrumentation engineer. I worked on special projects and was tasked with designing and constructing the high intensity acoustic/vibration test laboratories for NASA Houston. I left engineering in 1967 because I had an automobile accident that put me on crutches for a year. Disability insurance provided me with enough income that I didn't have to work, so I focused on photography. One of my first assignments in 1968 was photographing Frank Stella prints for the back cover of Artforum magazine. At the time I was sharing a Venice Beach studio with Charles Maddox, one of the early kinetic sculptors. In 1970, Charles got a job teaching in New Mexico, so I ended up having his studio totally to myself. I began experimenting using his wood lathe, horizontally spinning a metal cylindrical mold partially filled with colored polyester resin. I started out using three colors: violet, amber, and blue. The results were my first multi-layer, multi-colored polyester cylinders. which I then cut into various shapes to make my first pieces of plastic sculpture.

Eric Orr, John McCracken, and John Altoon were my immediate neighbors and we all became good friends. In early 1969, John Altoon died and his widow Roberta gave me their studio, which had been designed for them by Frank Gehry. I acquired a small, vertical multiple-speed turntable for casting my twenty-inch diameter parabolic lenses. I worked and lived in that same Venice Beach studio until 2019, and continued making three-color/three-layer polyester castings until the last day.

In 1972, my next door neighbor, John McCracken said, "I've made enough black sculptures," and gave me his can of black pigment, which I used to make my first opaque casting. It came out great, but it was different than anything I had ever thought about making. My secretary Margret Willard liked it a lot and suggested that I make a white one, which was also successful, as were the gray lenses that resulted from combining black and white. Experiments with opacity, partial opacity, and partial transparency informed the work I made over the next years.

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Can you tell us a little bit about the work you did for NASA?

I worked for Wyle Laboratories in El Segundo, California, which was contracted by NASA to design and build facilities for testing the capsules that went to the moon on the Apollo and Gemini missions. Those capsules had extreme acoustic vibration problems during launch and atmospheric entry. So I built laboratories with very high-intensity acoustical generators, and all of the instrumentation for monitoring effects on the capsules and human occupants. Most of the acoustical sound measurement and control instrumentation equipment was made by Brüel & Kjær (Sound and Vibration Measurement A/S) in Denmark. I traveled to Denmark two times to visit their facilities, and I purchased their products for NASA and for other US government agencies. I also specified their products for the French Atomic Agency laboratory in Bordeaux, France. I spent a couple of weeks there teaching the French engineers how to use the B&K instrumentation.

Fred Eversley

Where do you see the cross-pollination between science and art? I think the connection is very clear in your own work, but what about art in general?

I'm probably more aware of it than most artists and I've thought a lot about it, both in terms of my own work and the institutions that surround science and art, respectively. I grew up in science, and it's the basis of my art for sure, but it is also the basis of life in the broad sense of the word. Given its importance to human life and beyond, it should also be the basis for a certain amount of art.

I spent three years (1977-80) as artist-in-residence at the National Air and Space Museum in Washington DC. They provided me with a large studio, built and furnished to my specifications, in the museum basement. The only limitation was that I could not produce any fumes, which meant I couldn't work casting polyester. I started making a series of sculptures utilizing multi-layered acrylic shapes which I either glued or bolted together. They evolved from pedestal-mounted spires and arches to wall-hanging arcs, to freely hanging sculptures with both linear and spiral forms, to large outdoor constructions using alternating layers of painted metal and clear acrylic constructions. I also had two major solo exhibitions at the National Academy of Sciences in Washington, DC, one in 1976 and another in 1981, which resulted in my getting exposure and feedback from a large number of scientists from various specialized fields. I am still very involved with the science of energy.

Principles of physics and optics seem particularly relevant to what you do, and the parabolic shape seems to be something of a recurring element. What attracted you to that particular form?

I've been playing with the parabola since I was about fifteen years old. A lot of my interest in it comes from an article I read in Popular Mechanics magazine, about how astronomers in the seventeenth century used a parabolic mirror to look at the sky—a kind of reflector they made by spinning a can of liquid mercury. (Trouble is, mercury is poisonous, and all of those early researchers died.) The article also explained that the parabola constitutes the only perfect concentration of all forms of energy. I went down into my

father's basement and spun a pan of Jello, creating a parabolic top surface in the Jello. That process of discovery formed the basis for all my vertical spun parabolic lenses.

You just mentioned something about the parabola being a concentration of energy...

A parabola channels all energy, in-pinging it, to a single focal point. All of my art deals with the subject of energy in one way or another. Most of it is optical energy gathered using parabolic surfaces, but there's also wind energy, which I capture in the use of certain kinds of shapes.

Can you tell me more about how you actually make these sculptures? What is your process for creating polyester resin pieces, for example?

Most are made by spinning a liquid about the vertical axis, which creates a parabolic shape.

I can change the speed at which I'm spinning the material for the second and third or fourth layers. So you have different parabolas overlapping one another but of different focal points. That's when you get into a much more complicated piece, where you have multiple focal points that add up internally to much more complex physical phenomena, making even more possible visual combinations as you look and walk around it. Polishing is also a crucial part of the process, as the lenses have to be finished very carefully to maintain the precision of their shapes. All are unique, handmade and come out very different.

You've been quoted as saying you make "moving art without moving elements." Could you speak a bit more about that? Your sculptures don't appear to have kinetic components, so in what sense can they be said to move?

I did make a series of hanging spiral acrylic pieces that actually rotated as a result of small, naturally occurring air currents. I also did a big two-element sculpture in front of the Miami airport, which is a vertical-axis windmill designed to turn with wind currents. But yes, most of my art has been cast polyester, parabolic sculptures that do not move in a kinetic way, and instead change appearance with natural changes in light and depending on viewing angles. It's as much about the movement of light as it is about the movement of the viewer.

Many of the Light and Space artists have been influenced by the landscape around Los Angeles: the sun, the sea, the traffic, etc.

That's right. And for me, having lived by the beach in Venice even before I started making art, it was always about energy. The sun, the wind, the waves—it's all energy.

In what other ways did the Los Angeles environment influence you and your practice?

The atmosphere fostered free experimentation and innovation. Also the industrial presence made a lot of interesting things possible. For instance, in the early 1970s, I was going to a lot of industrial auctions. In 1971, I purchased two large, very heavy-duty turntables which had been used to machine the first series of atomic bomb casings together with the variable speed motors used for powering

them. I retrofitted these turntables to spin-cast all of my forty-inch diameter polyester sculptures—like the two lenses you have in this Copenhagen show. 1971 is also the year when I made a larger, ninety-six-inch mold and spun-cast my largest three-color/three-layer casting with an asymmetrical center, which was a commission for Lenox Square in Atlanta.

It seems both the presence of the viewer and their movement have an important role to play in your art. Would you say that's a fundamental difference between West Coast and East Coast Minimalism?

That's one way to look at it. It's interesting, Donald Judd's former studio is a block away from my New York studio. Judd's pieces are not kinetic in any obvious way. A Judd is a Judd and it doesn't change. So no, the New York school did not, for the most part, consider movement a big factor. It's also interesting to think about someone like Rauschenberg, with whom I was close, and whose work has more variation than Judd's but still doesn't seem to directly address the changes in appearance that occur with variations in natural light or because of the movement of the spectator, all of which I'm thinking about as I make my sculptures.

The 1960s and '70s were a turbulent time in Los Angeles and in the US in general; there was a lot of talk about race and gender roles. Did you sense that these political developments were affecting artists as well? Did they affect the way you viewed your own work, for example?

I was involved in all of that for sure. One could say that the movement and spirit were all about liberation and freedom of expression. That certainly affected us in various ways, but my work as such is not politically based.

You seem to be the only Black artist considered part of the so-called Light and Space movement—why do you think that is?

I was living out by the beach in Venice, which was the only beach community I could choose to live in as a Black person. Still, there were relatively few Black people there, aside from a few musicians. There was one Black photographer, Harry Drinkwater, who was right across the street from where Larry Bell's studio is now, just a block and a half from where my Venice Beach studio was. He photographed a lot of the artists in the area. He had incredible rooftop parties on Saturday nights, where I met most of the Los Angeles artists that I ended up knowing, but in those days the communities were very local and we didn't pay very much attention to what other artists were doing further away. The issues we dealt with were very much related to where we were living, and implicit in everything we did-where we worked, the people we knew-and in terms of my work, I've always concentrated on principles like energy and cosmological connections. I choose to focus on universal appeal, what we all have in common, rather than what separates us, and aimed for the work to be open and free for interpretation. I wanted to encourage any viewers to discuss all kinds of associations, reflections, and issues in relation to it.

How did you experience the art scene in 1970s Los Angeles as opposed to the one in New York City?

It was totally different, but there were some connections. First of all, there were far fewer museums in Los Angeles. The Pasadena Art Museum, with Walter Hopps as its director, showed mostly New York artists like Robert Rauschenberg and Carl Andre. I knew all of those people well. At a party not long after my accident, Rauschenberg pushed me into a swimming pool, with my three-piece suit and crutches and my drink. Leo Castelli ended up being one of the people who pulled me out of the water. Rauschenberg and I remained close friends until his death.

The Los Angeles County Museum of Art (LACMA), with Maurice Tuchman as its curator, was the only other major museum, and other kinds of things were happening there. They had a major show called "Art and Technology" that I was part of. I was also the technical adviser for the entire show. I made a piece using liquid crystals. I worked with Ampex, an electronics corporation in San Francisco. We made little models which worked perfectly. But the big piece, which was going to be a twenty-foot-diameter room that you walked into, was simply too advanced for the technology at the time and therefore too expensive for any museum to sponsor at that time.

Do you still get the sense that you are trying things out and treading new ground? Or did these big technical issues factor more into your earlier work?

I never stop trying out new things. For instance, as part of the Getty's upcoming Pacific Standard Time programming dedicated to Art and Technology, I have a big solo exhibition coming up in 2024 at the Benton Museum of Art, California. I'll be making new work for both indoor and outdoor spaces there. My technical adviser for the show is Barry Barish, who recently won the Nobel Prize in Physics for observing gravitational waves, so we'll be incorporating cuttingedge ideas.

So what's your next experiment?

One of the works I'm developing for the Benton is a major wind-powered piece. I've been doing research toward a solar-powered one, too. And over the last years, I've been exploring new materials and processes for a large, eight-element outdoor commission in Florida. All of this research has been very rewarding, and it will probably generate even more new ideas.

Exhibition credits

COPENHAGEN CONTEMPORARY

LIGHT & SPACE Copenhagen Contemporary (CC) December 3, 2021—September 4, 2022 Copenhagen

Curated by: Marie Nipper, Jannie Haagemann, Janna Lund, and Line Wium Olesen, assisted by Marie Amalie Skinnebach, and Kristine Vindahl

Copenhagen Contemporary Refshalevej 173A, 1432 Copenhagen, Denmark, copenhagencontemporary.org

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Copenhagen Contemporary (CC) would like to thank

All the artists, artist studios, lenders, and galleries who contributed to the Light & Space exhibition.

For financial support, we would like to express our gratitude to

The City of Copenhagen, The Augustinus Foundation, The Danish Ministry of Culture, private donation, The Danish Arts Foundation, The Aage og Johanne Louis-Hansen Foundation, Independent Research Fund Denmark, The A.P. Møller Foundation, The Knud Højgaard Foundation, The New Carlsberg Foundation, The Terra Foundation for American Art, The philanthropic association Realdania, 15. Juni Foundation, The Novo Nordisk Foundation, Minister Erna Hamiltons Legat for videnskab og kunst, The LEGO Foundation, Solar Fonden af 1948, Konsul Georg Jorck og Hustru Emma Jorcks Fond, Overretssagfører L. Zeuthens Mindelegat, The US Embassy in Denmark, The Beckett Foundation, Dreyers Foundation, Refshaleøens Ejendomsselskab, Kvadrat A/S, and Carhartt WIP

LAS

ROBERT IRWIN: LIGHT AND SPACE (KRAFTWERK BERLIN) LAS (Light Art Space) December 5, 2021–January 30, 2022 Kraftwerk Berlin

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LAS would like to thank

Robert Irwin Studio (Nina Howard, Joseph Huppert, Jeff Jamieson), Kraftwerk Berlin, and all those who were involved with the exhibition.

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Designed by: Melanie Mues, Mues Design London

Printed by: MAS Matbaa, Istanbul, Turkey

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Acknowledgements

The editors thank all the authors for their contributions to this publication.
We also deeply thank the artists for their engagement and enthusiasm as well as their studios and galleries. Also a huge thank you to designer Melanie Mues, who has been exceptionally dedicated to the realization of this publication.

First published by Copenhagen Contemporary, Refshalevej 173A, 1432 Copenhagen, Denmark; LAS, Almstadtstrafze 24, 10119 Berlin, Germany; and Koenig Books, Ehrenstrafze 4, 50672 Cologne, Germany

ISBN 978-87-999426-8-8 (Copenhagen Contemporary)

ISBN 978-3-00-072333-9 (LAS)

Distribution by Koenig Books

EUROPE

BUCHHANDLUNG WALTHER KÖNIG Ehrenstr. 4, 50672 Cologne, Germany Tel. +49 (0) 221/20 59 6 53 verlag@buchhandlung-walther-koenig.de

UK & IRELAND
CORNERHOUSE PUBLICATIONS LTD.
2 Tony Wilson Place,
Manchester M15 4FN, UK
Tel. +44 (0) 161 212 3466
publications@cornerhouse.org

OUTSIDE EUROPE

D.A.P./Distributed Art Publishers, Inc. 75 Broad Street, Suite 630, New York, NY 10004, USA Tel. +1 (0) (212) 627 1999 orders@dapinc.com