Per Biorn (1937-2015): A Memorial Tribute

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Per Biorn passed away on June 15, 2015 at the age of 78. Biorn was a strong believer in the experiments in art and technology (E.A.T.) movement initiated in New York, primarily by Billy Klüver along with others. Per Biorn was perhaps the most accomplished of the various engineers involved with E.A.T.; in many ways, he epitomized E.A.T. Biorn was an electrical and mechanical genius. I am convinced he could construct anything – and make it work reliably.

Per Biorn was born in 1937 in Denmark. The Danish military sent him to the United States to study radar, and here he met his wife Jackie. Together they went to Denmark, and Biorn then emigrated to the United Sates in 1962. A few years later, Biorn began his technical career in 1964 as an employee of Bell Telephone Laboratories (Bell Labs). Despite living in a new country, he was quite proud of his Danish heritage.

Over the last few years, I came to know Biorn through interviewing him. During our time together, we would discuss what it was like at Bell Labs back then, in its great years of the 1960s. I was amazed to learn that he had lived just a few blocks from my current home in New Jersey.

Ken D. Smith hired Biorn in 1964 to work at Bell Labs in semiconductor research at Murray Hill, New Jersey. Biorn initially worked on test gear for tunnel diodes as a Technical Aide, but was soon promoted to Senior Technical Aide. At Bell Labs, it was talent that mattered – and he blossomed there. Biorn related how his management, William Boyle and George Smith, were at lunch working on ideas for a new device that would become the charge-coupled device (CCD) later used in digital and video cameras.

Per Biorn was the engineer -- the technologist -- behind many artists, including Robert Rauschenberg. Biorn was always in the background, making the technology work, and probably also contributing to the art. He was a true believer in the art and technology movement of Billy Klüver.

Biorn collaborated in 1988 with Rauschenberg in designing and constructing the sensor towers for the ballet *Astral Convertible* for Trisha Brown and her dance company.[1] The work premiered in 1989. The eight towers responded to the movement of the dancers as they approached them. Biorn, Jackie, and his mother all worked on soldering and constructing the towers. Biorn would later work on the restoration of a number of Rauschenberg works. He even worked on the restoration of Alexander Calder mobiles for exhibition in the 1968 “The Machine” exhibit at the Museum of Modern Art (MOMA), and collaborated with the choreographer Merce Cunningham.

For “Nine Evenings” in 1966, he worked with artists Yvonne Rainer and Lucinda Childs. He also collaborated with artist Carolee Schneeman for *Snows* exhibited in 1967 at the Howard Wise Gallery. Biorn constructed “Minuphone” for artist Marta Minujin, and their work was another of those shown at the Howard Wise Gallery in New York City from

June 27 to July 28, 1967.[2] Per mentioned the challenge in getting this large piece onto the elevator to the second floor of the gallery.

Starting in 1965 (under the auspices of E.A.T.), Biorn worked with artist Lillian Schwartz on her plastic sculptures. He was proud that the engineering department at Columbia University could not figure out how he made their pieces work technically. Later, in 1968, he collaborated with her on *Proxima Centauri*. This work was one of those chosen to be included in the results of an E.A.T.-sponsored competition that were shown in an appendix to "The Machine" exhibit at MOMA. "[The] Purpose of the competition … was to find the most inventive contribution by an engineer to a work of art produced in collaboration with an artist."[3]

After working at Bell Labs, Biorn went to work for Bell South. Then, even after retiring to Florida, Biorn never stopped working. He was an active reader and curious about everything. As an ingenious tinkerer, Biorn was always active in challenging himself to design and build – to create – such as an outdoor shower and a battery-powered wheelchair. His video interviews at the website of the Daniel Langlois Foundation attest to his contributions and demonstrate the clarity of his memory and public speaking ability.[4]

Per Biorn had a strong artistic sense. Without the ingenuity and creativity of his technological contributions, the art works on which he collaborated would, most likely, have not been created. His technological designs and constructions were equally essential as the artistic vision of the artists with whom he collaborated. In my conversations with Per, he was saddened that some artists with whom he worked, over time seem to forget to credit his contributions to their collaborative works. Per was modest and in the background, and he respected all the artists that he worked with.

The art and technology movement has lost one its most talented contributors and advocates.

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[1] "First Hand: The Saga of Astral Convertible" IEEE Engineering and Technology History Wiki, http://ethw.org/First-Hand:The_Saga_of_%22Astral_Convertible%22

[2] See: http://www.aaa.si.edu/collections/howard-wise-gallery-records-9357/more

[3] See: http://www.moma.org/momaorg/shared/pdfs/docs/press_archives/4149/releases/MOMA_1968_July-December_0081.pdf

[4] http://www.fondation-langlois.org/html/e/page.php?NumPage=1940