Giorgio Scarpa's Transformable Objects: Geometry as Art, Science, and Play

Pino Trogu, San Francisco State University, Visiting Scholar TU Delft, 2017-2018

"We can assume that the infinite possible modulations of a few elementary basic shapes, on the plane and in space, are implicitly related to some organizing principle regarding their transformation, development and organization. The aim of my work is the search of fundamental organizing components, through which it will be possible to regulate and orient, in a logical way and in a continuity of connections, the transformation and the development of the modular organizations."[1]

"Exploration has within itself a bit of an exciting game: a measure of the unforeseen, of mystery, an undefinable formative and structuring potential that acts on the imagination, stimulates the mind, and favors action."[2]

1. G.S. *Models of rotational geometry*, 1978, p. 118.
2. G.S. *Bionics: exploration between play and research* (unpub. notes, c. 1970).

Giorgio Scarpa (1938-2012) was an Italian designer, artist, and teacher who worked in bionics, topology, and rotational geometry. Although much of his work is still unpublished, his bionic model of the sea urchin has recently inspired prototypes for an experimental biopsy harvester and for a mini-rover to collect soil samples on Mars.

Wednesday 20 June 2018
Fast Forward Session II – Lecture Room A, 15:30
Interactive Session II – Lagerhuysch, 16:30–18:00

ReMAR 2018

4th IEEE/IFToMM International Conference on Reconfigurable Mechanisms & Robots, 20–22 June 2018 remar2018.org

Delft University of Technology
Faculty of Mechanical, Maritime and Materials Engineering (3mE)
Building 24, Mekelweg 2 – 2628 CD Delft – The Netherlands

Front: models of sectioned cubes, modular chains, and unknown mechanisms. Box #15, Castel Bolognese, Italy, November 2017. Photo: Pino Trogu, courtesy of Oda De Sisti Scarpa.

Above: various transformable, articulated chains seen in different configurations; some published in *Modelli di geometria rotatoria* (Models of Rotational Geometry), Zanichelli, 1978. Model replicas built by Lorenzo Bocca.

online.sfsu.edu/trogu/scarpa
boccalorenzo.blogspot.com
trogu.com