

PINO TROGU – SAN FRANCISCO STATE UNIVERSITY

FILIP JELÍNEK – AUSTRIAN CENTER FOR MEDICAL INNOVATION  
AND TECHNOLOGY

# ORIGAMI ENGINEERING AND DESIGN

28TH CONFERENCE OF THE INTERNATIONAL SOCIETY  
FOR MEDICAL INNOVATION AND TECHNOLOGY

DESIGN OF MEDICAL DEVICES EUROPE 4TH EDITION – JOINT CONFERENCE

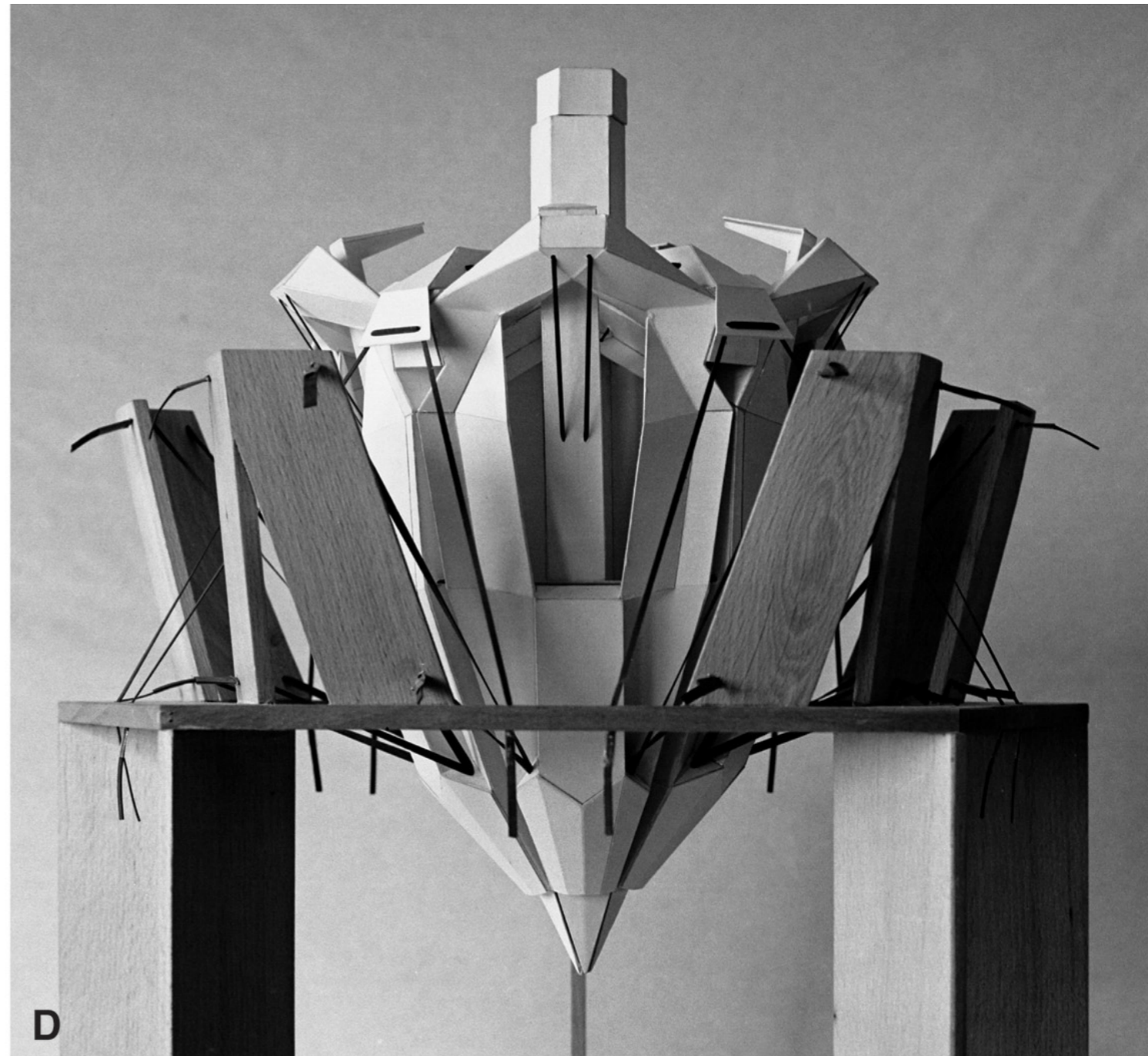
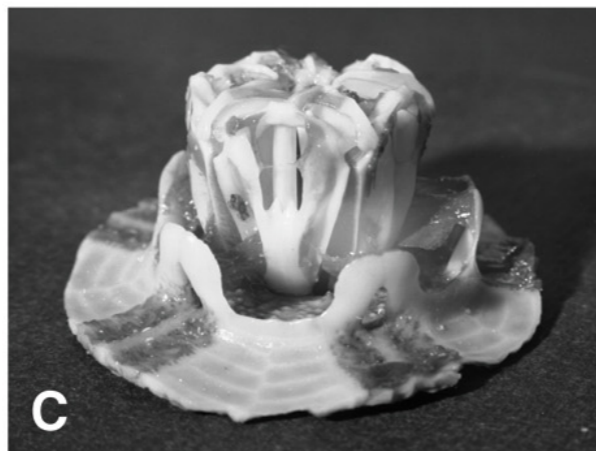
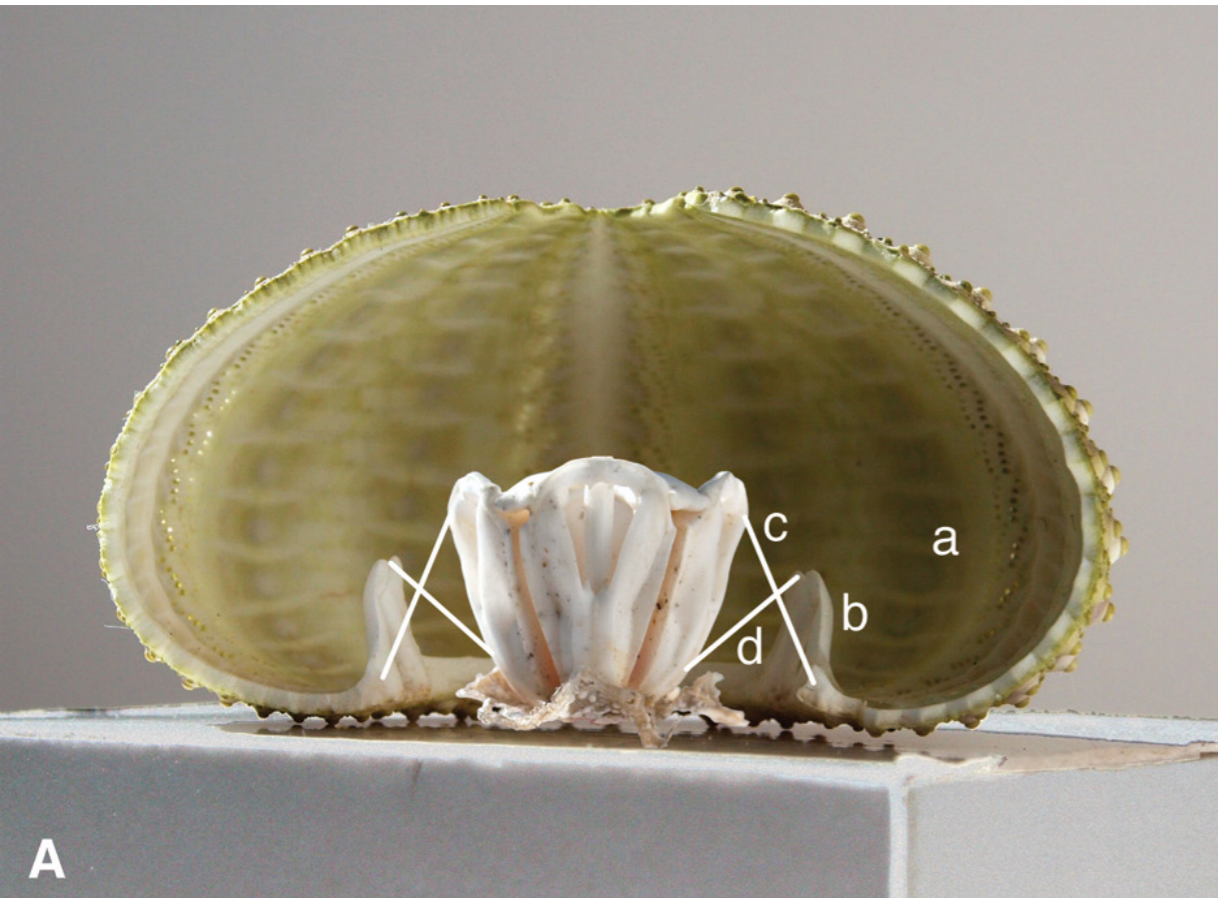
[go to last slide \(p.23\)](#)



Giorgio Scarpa's bio-inspired and geometric folding models.

# BIONIC MODELS

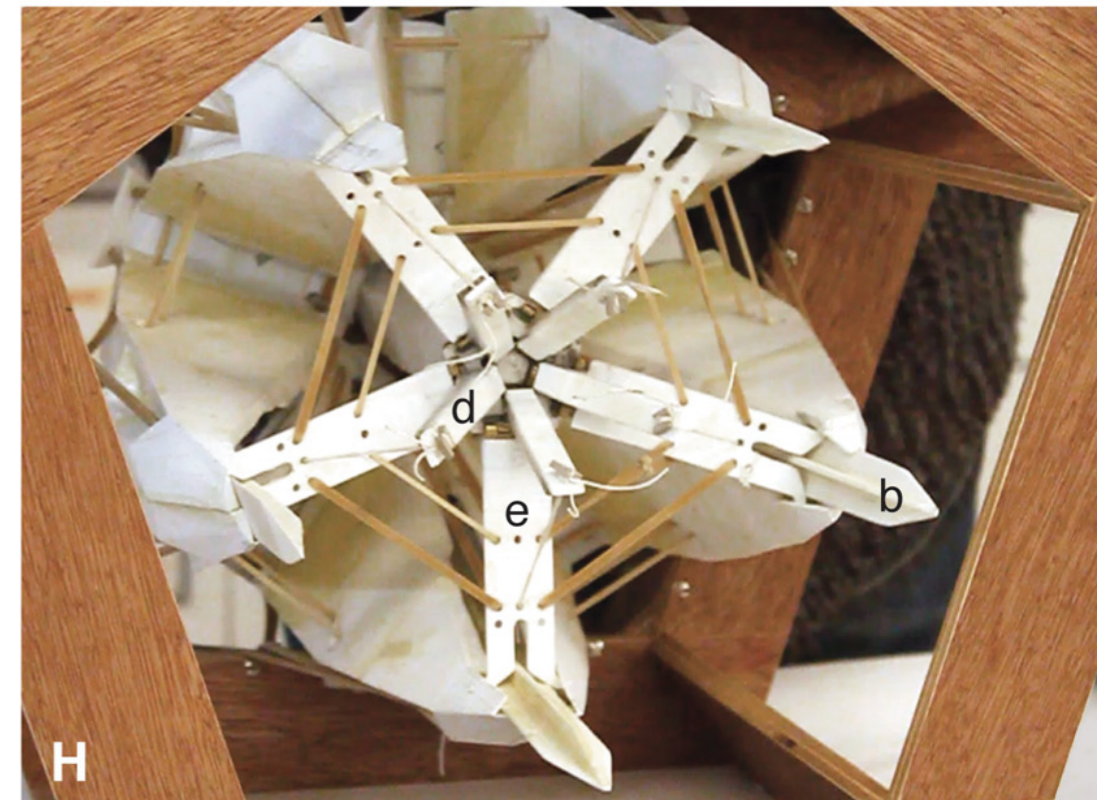
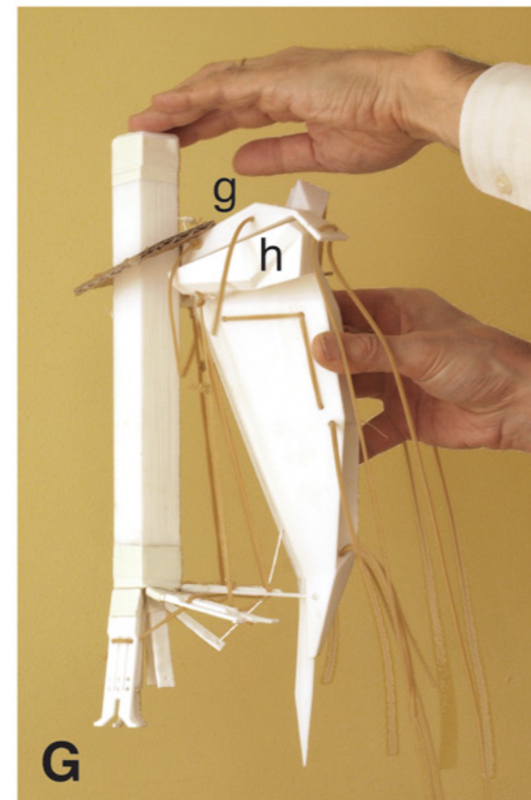
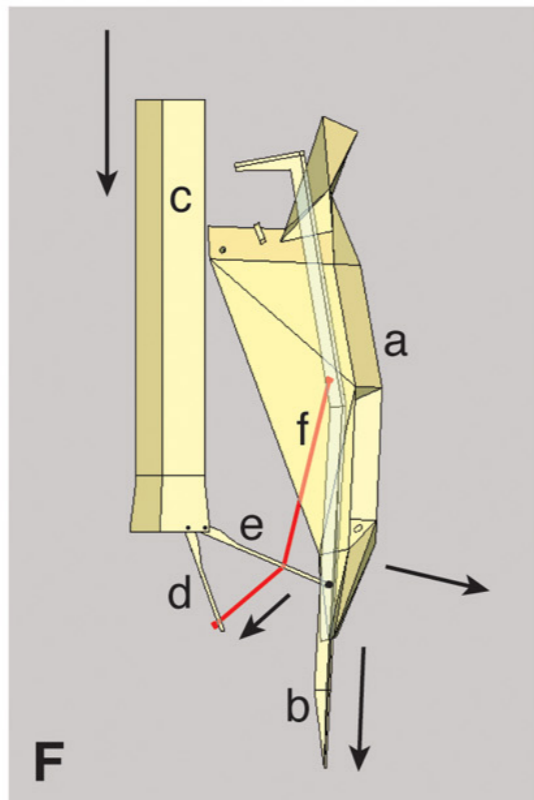
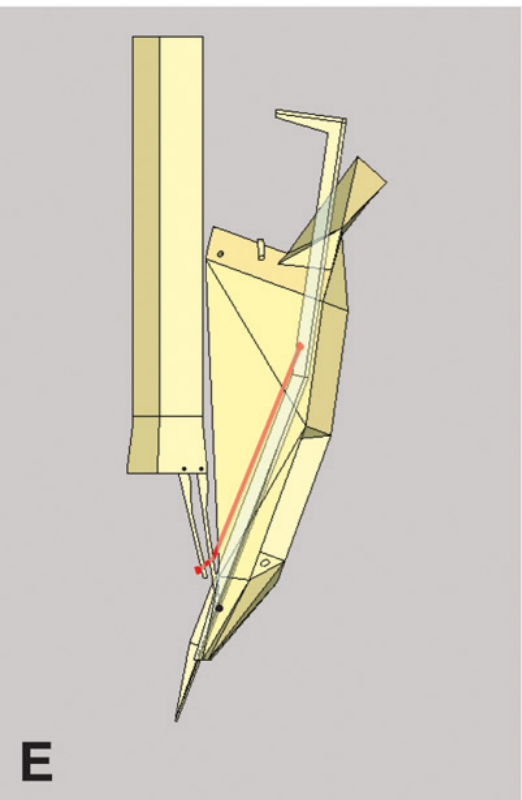
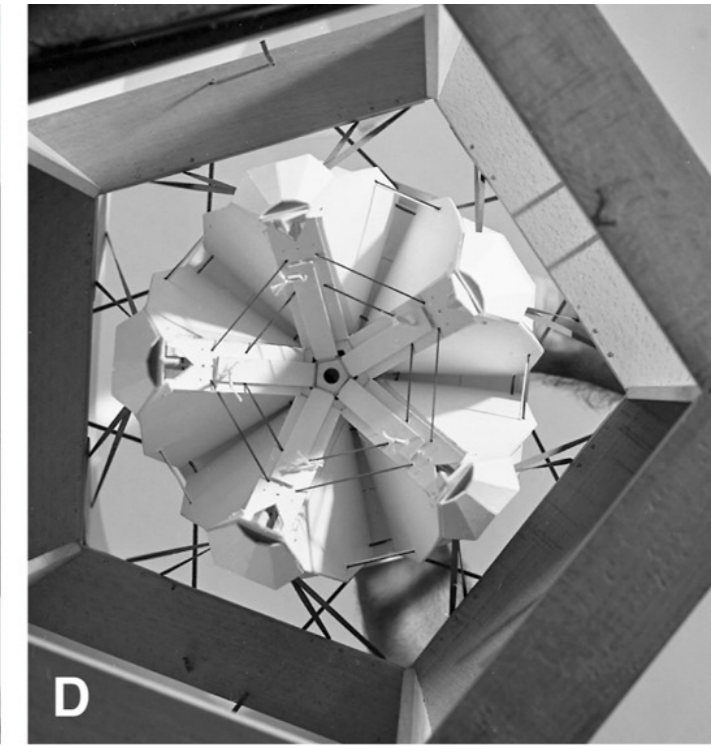
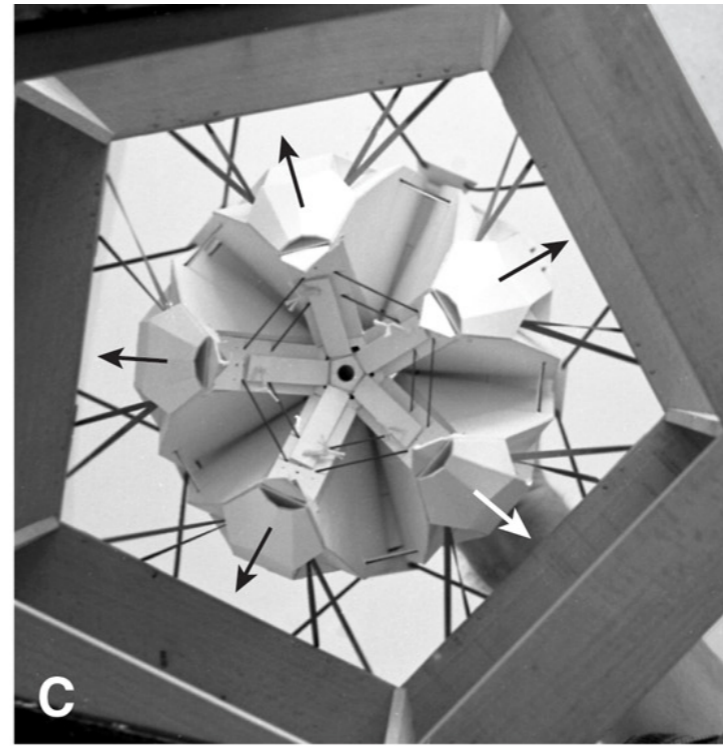
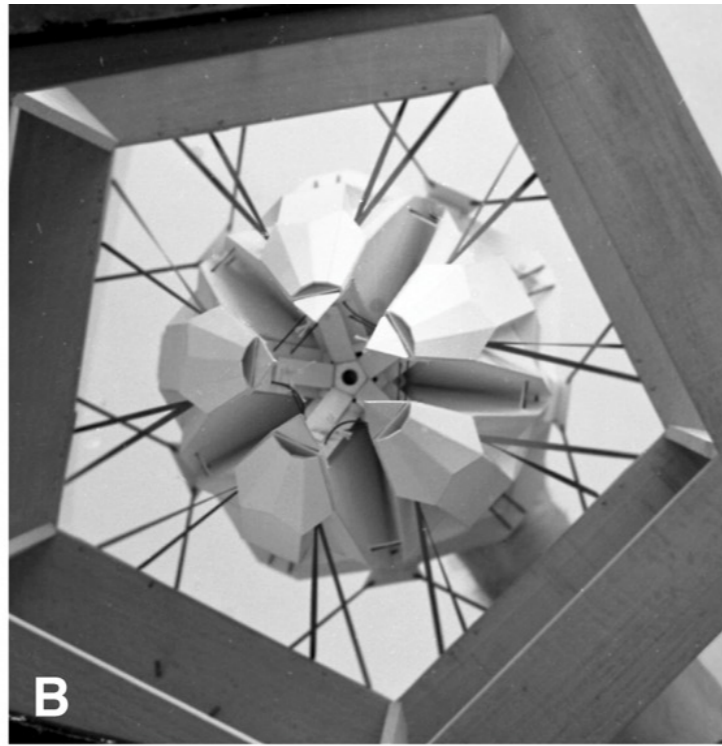
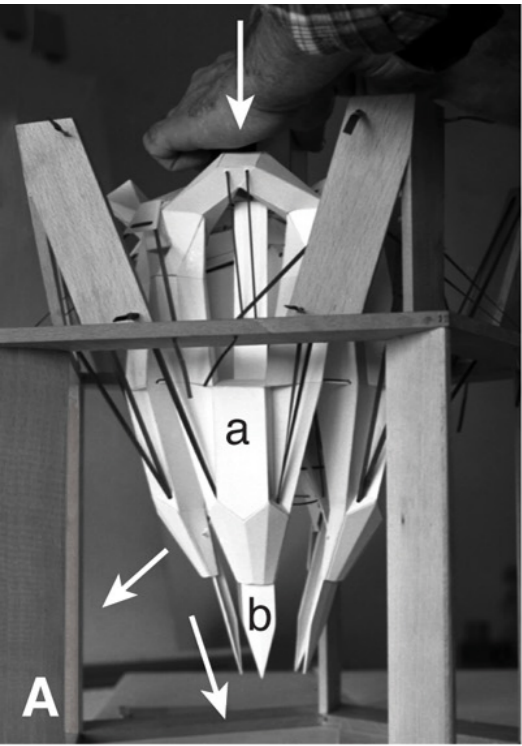




Scarpa, *Bionic Models*, 1985

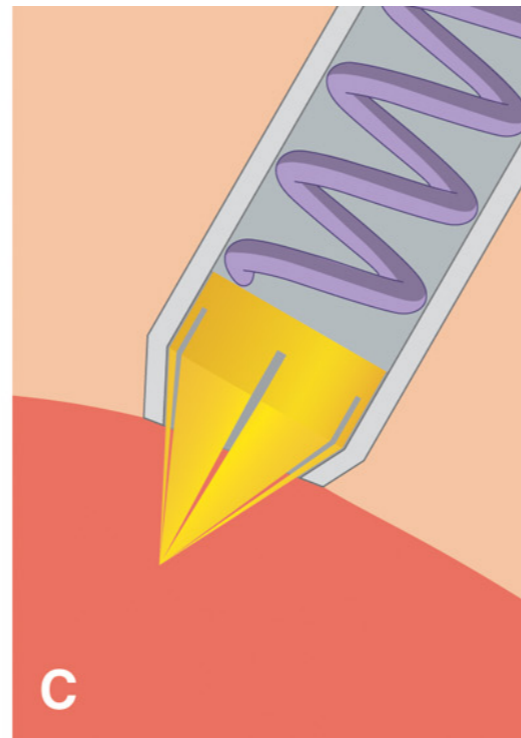
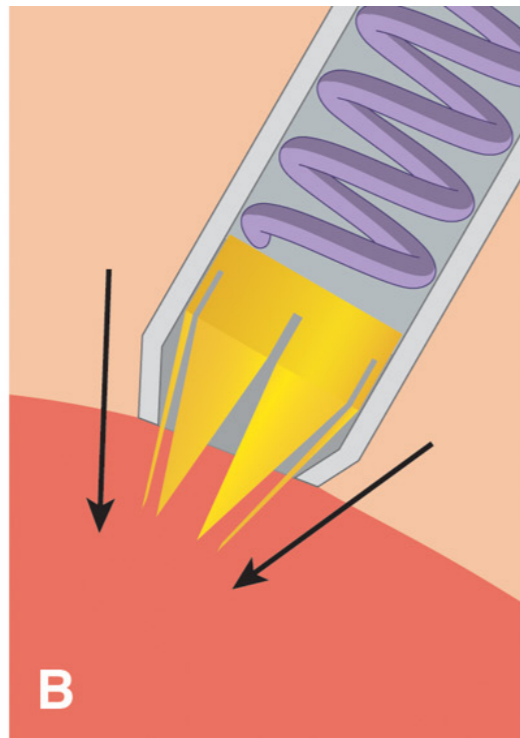
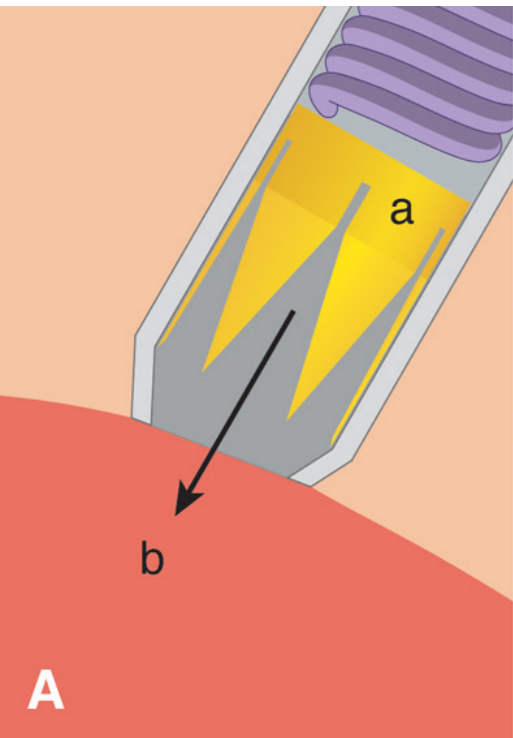
Photo: G. Cireddu  
Diagram: P. Trogu





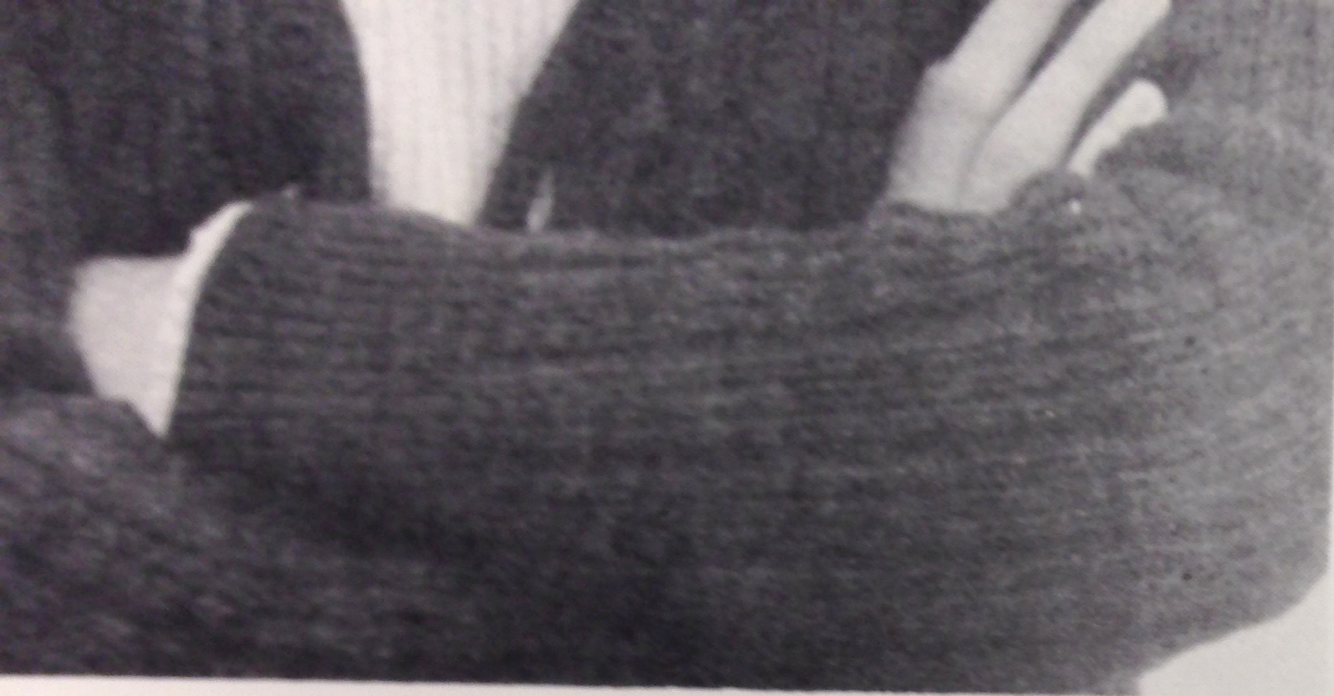
Top photo: G. Cireddu  
 Bottom: lantern replica: P. Trogu





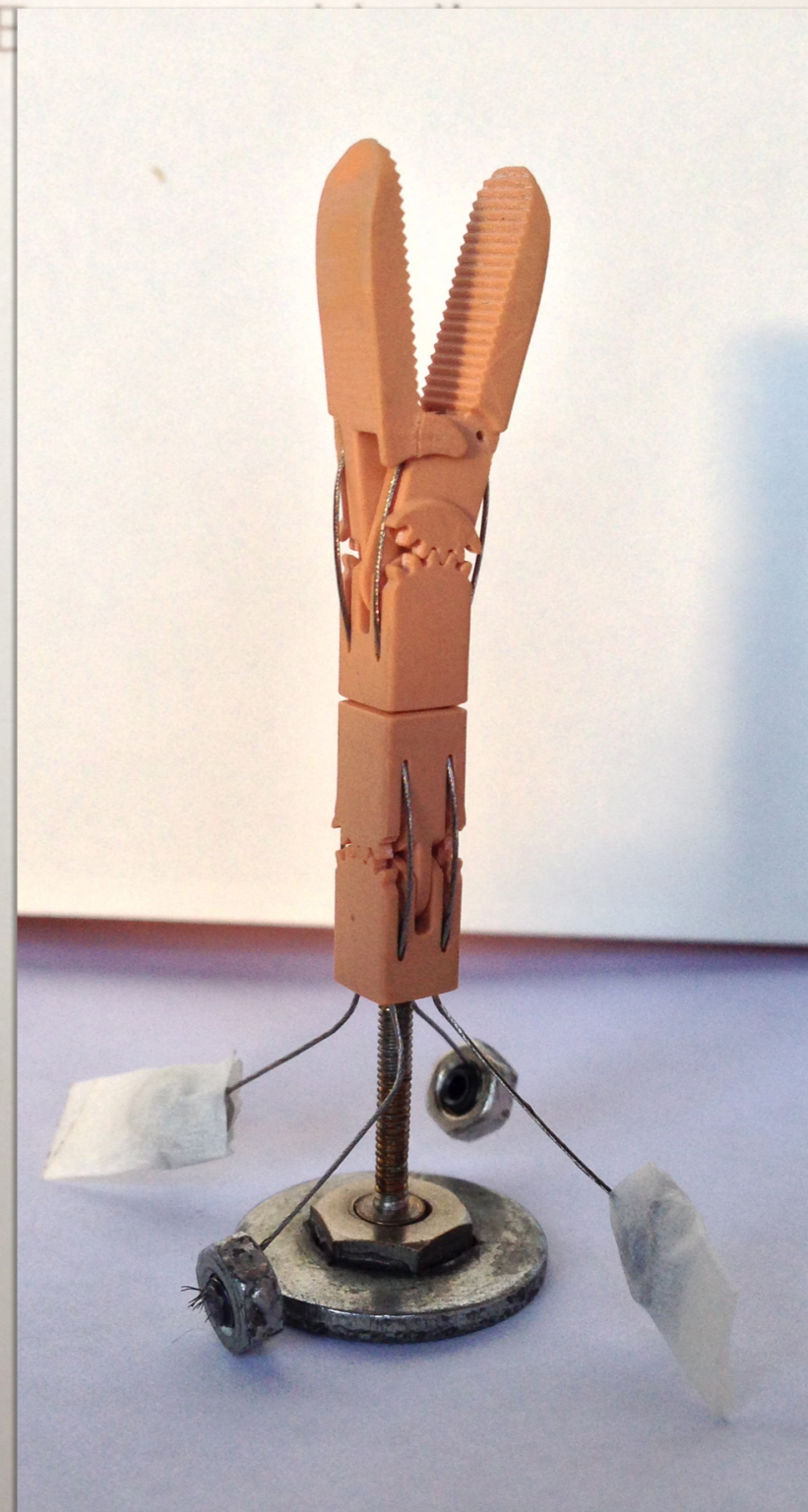
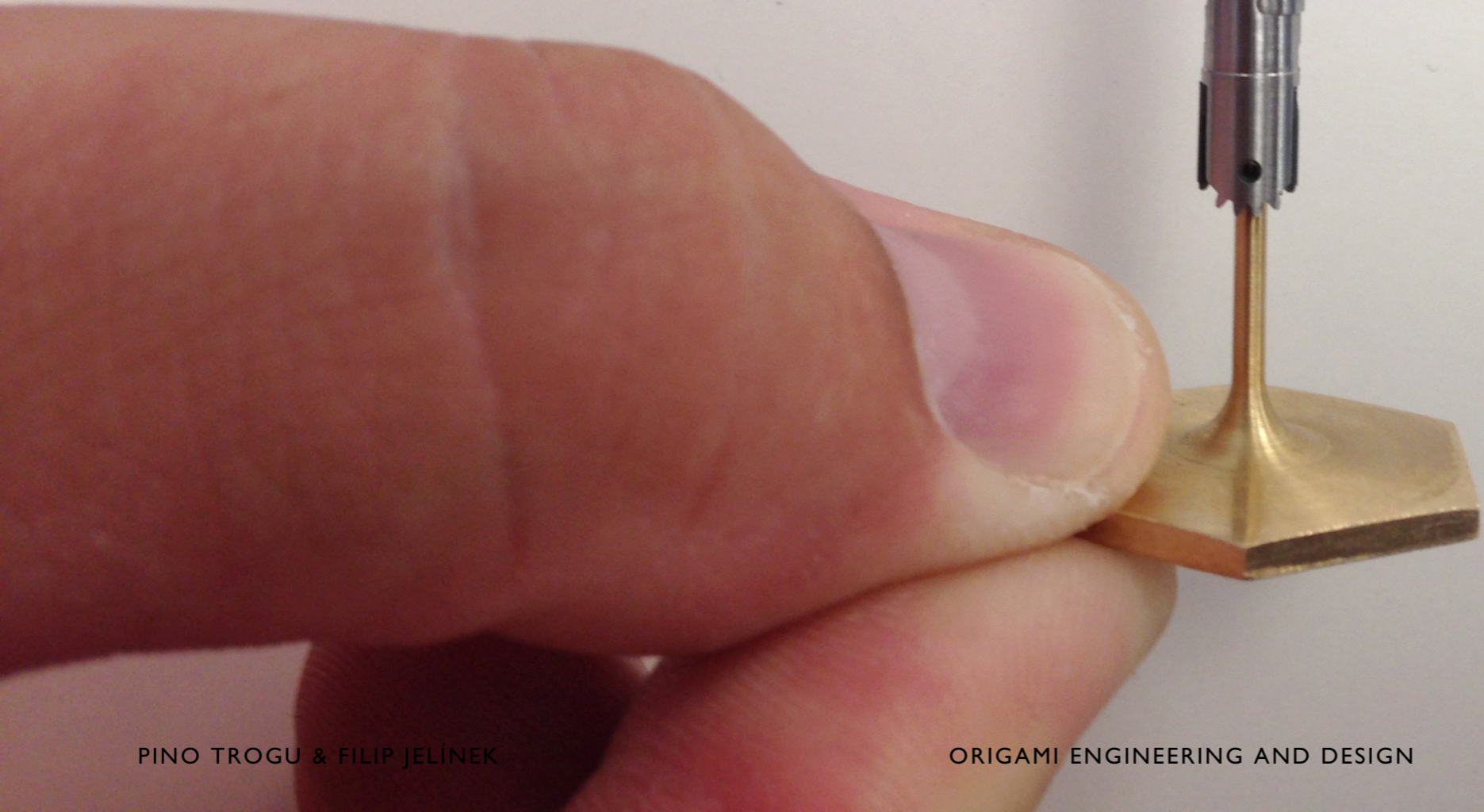
(Jelínek, Smit, Breedveld, TU Delft; ACMIT, Austria, 2014)





manipulation.  
Scarpa calls himself an 'aesthetic operat  
title he has participated in many exhibit  
those dealing with new tendencies, kine  
research, in E

(Jelínek, Smit, Breedveld, TU Delft;  
ACMIT, Austria, 2014)

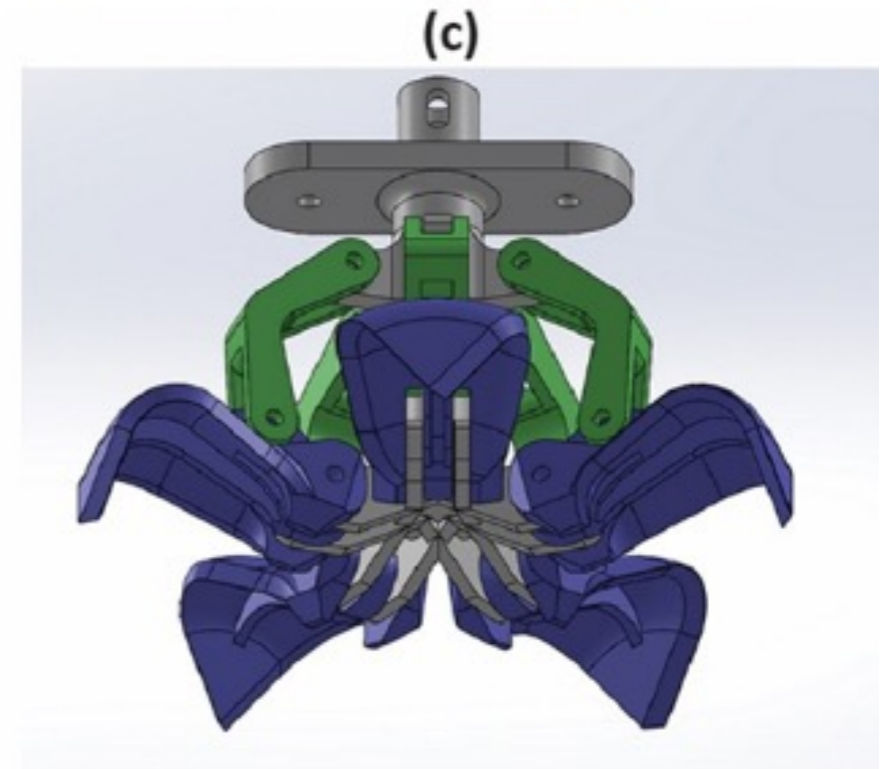
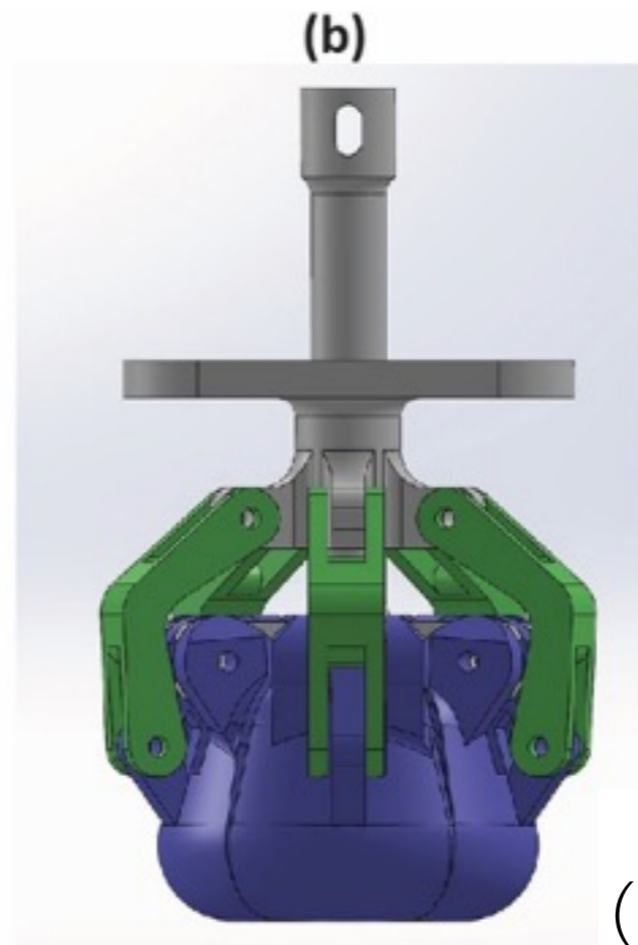
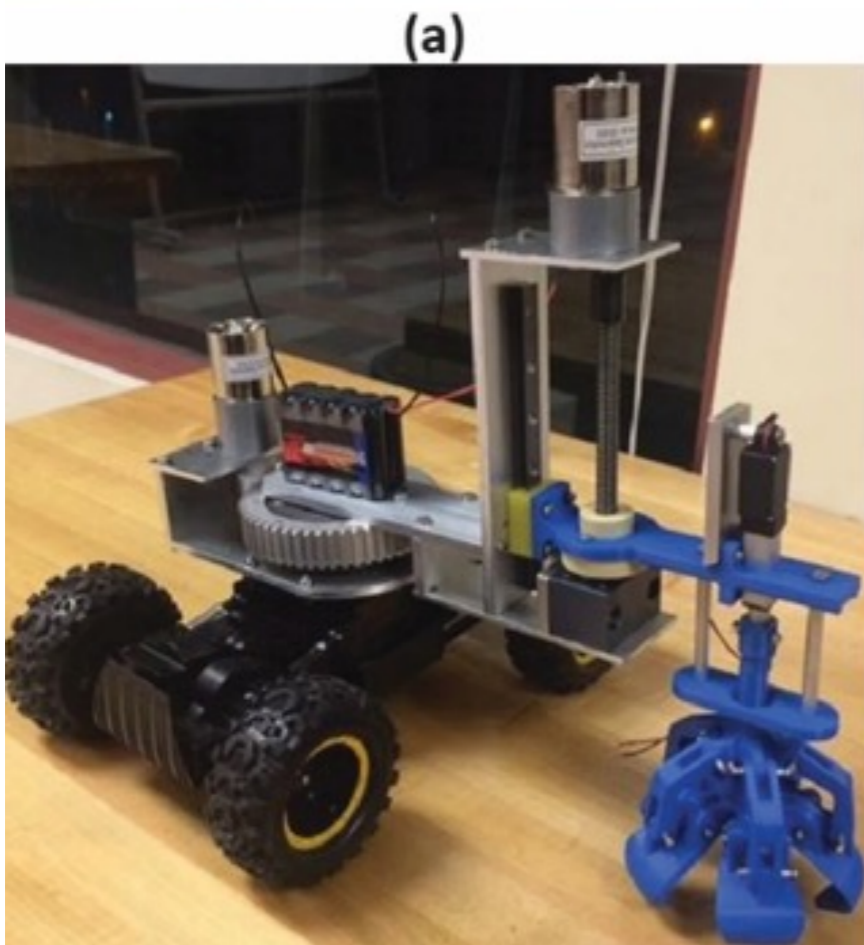
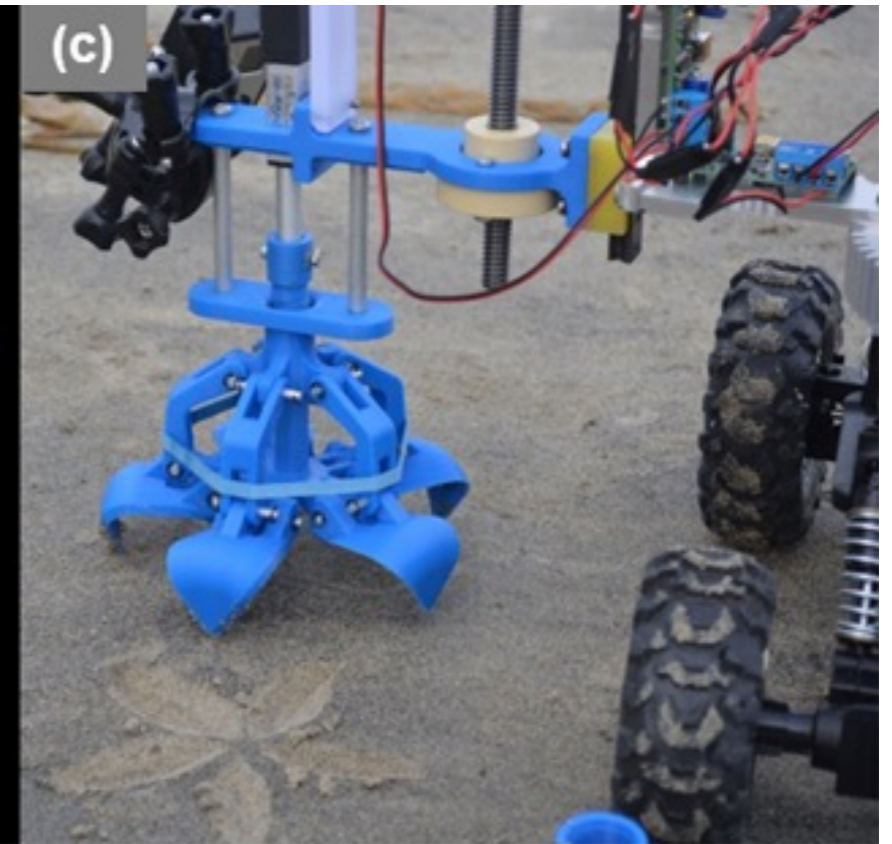
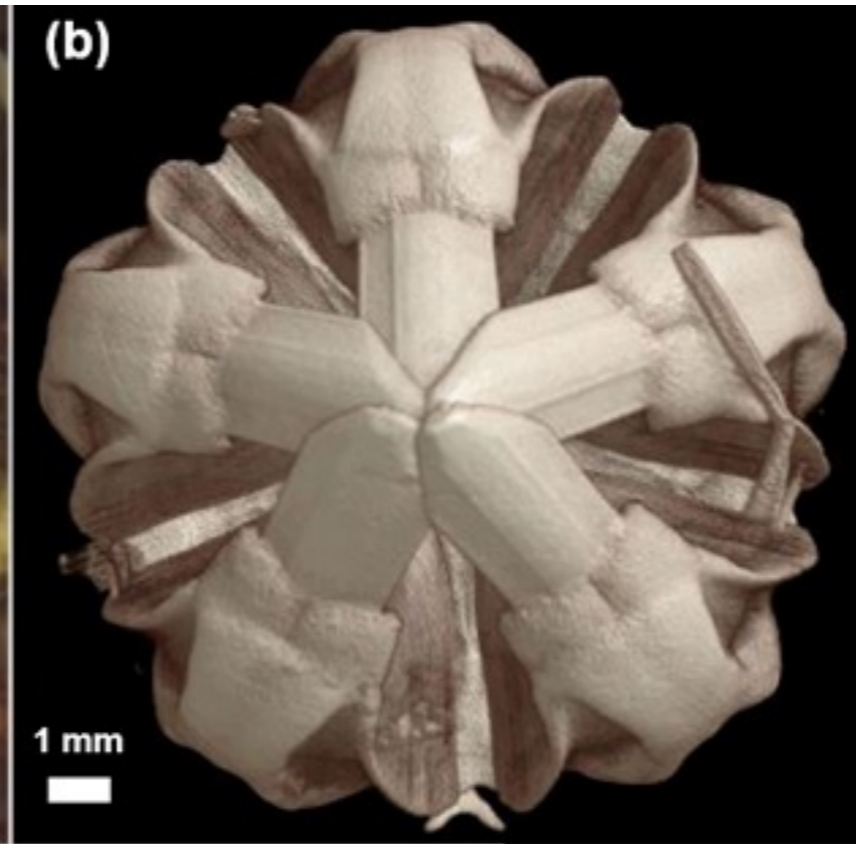
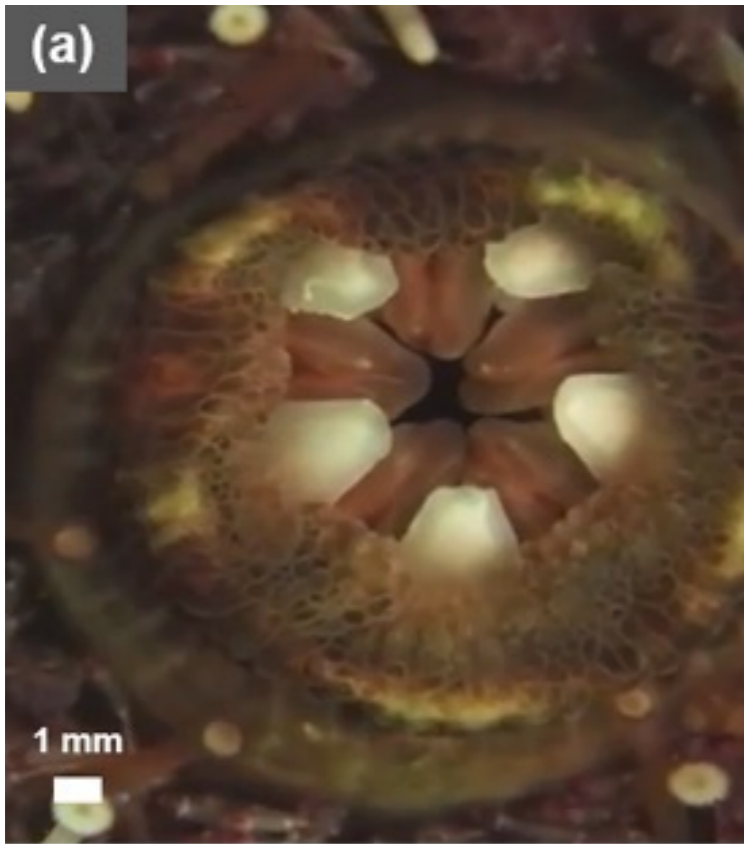






(Jelínek, Smit, Breedveld, TU Delft;  
ACMIT, Austria, 2014)

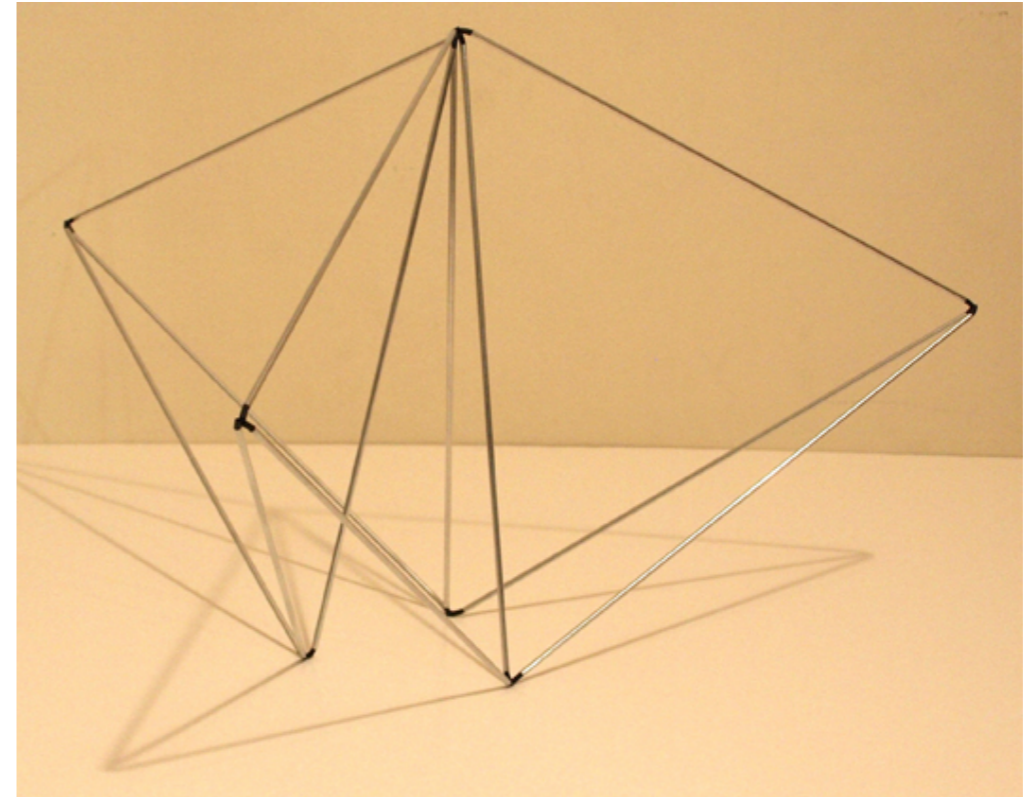
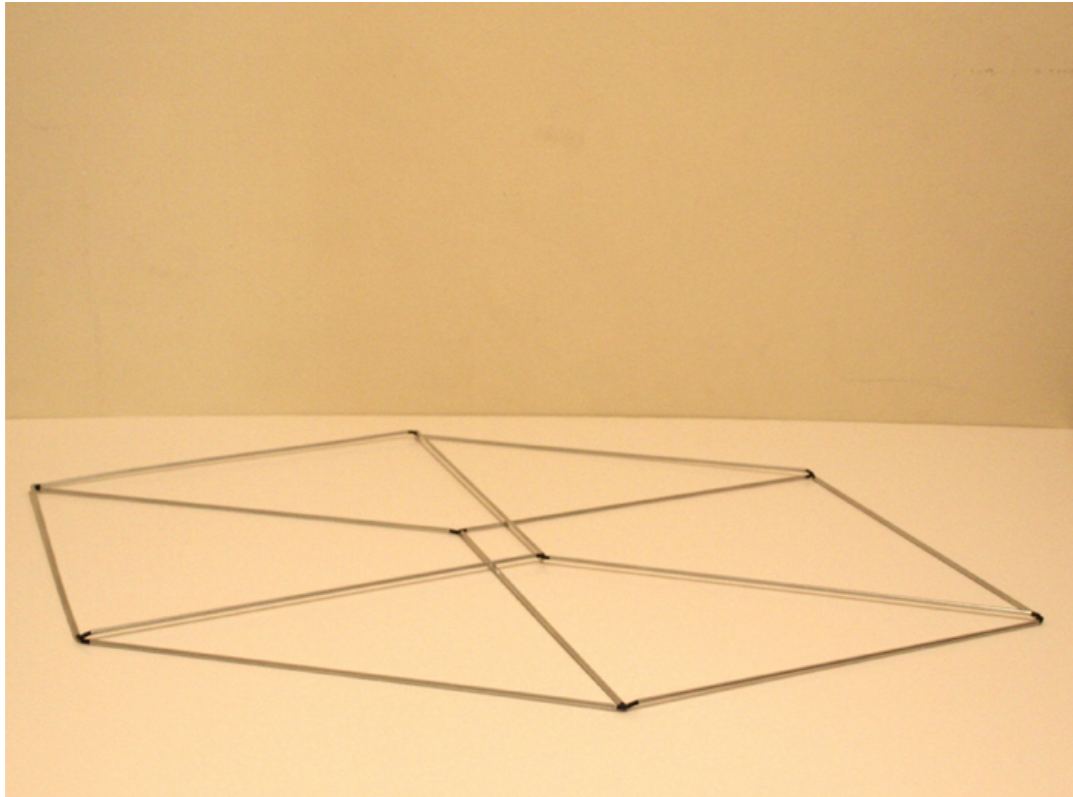
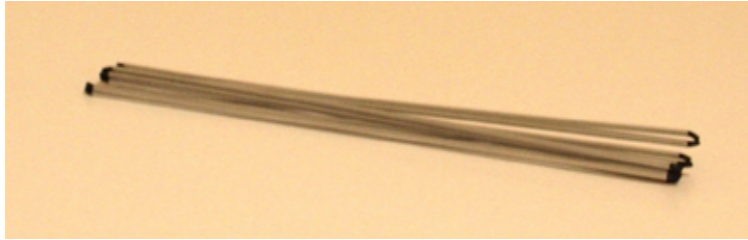




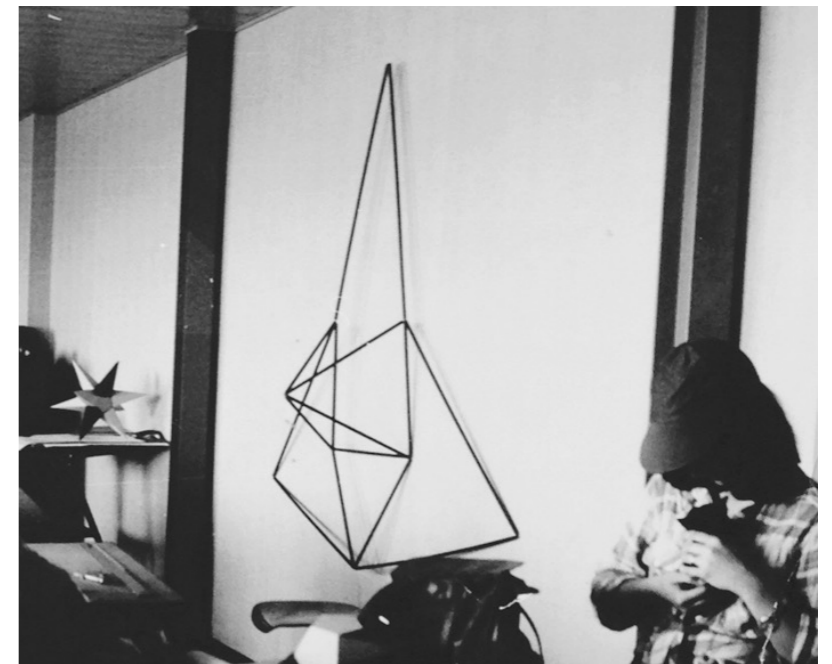
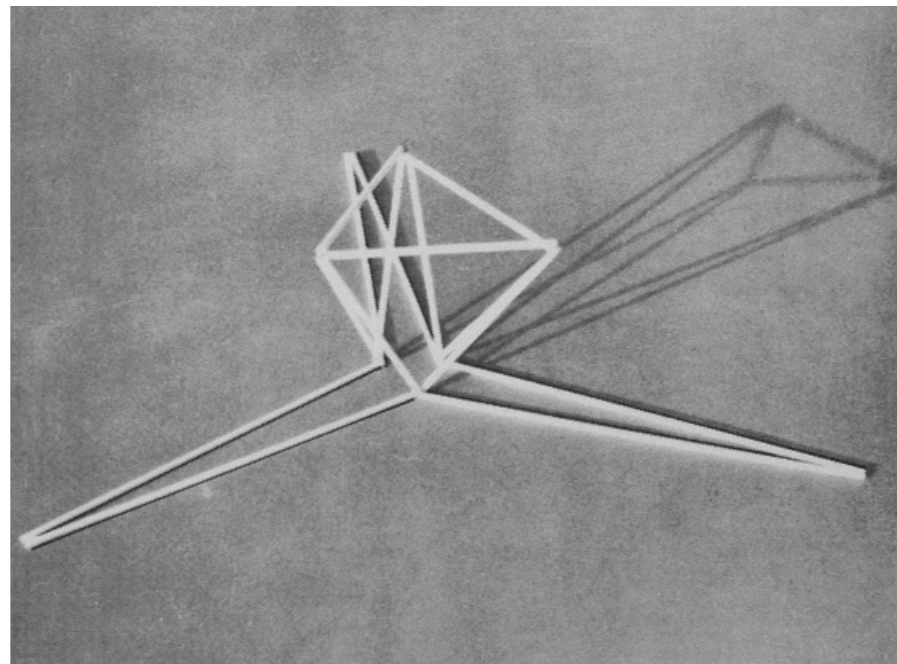
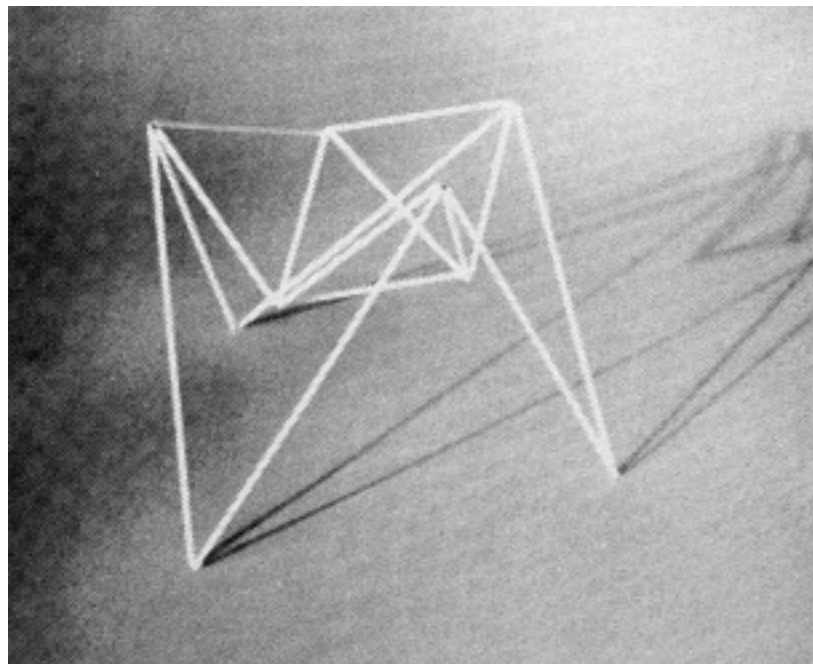
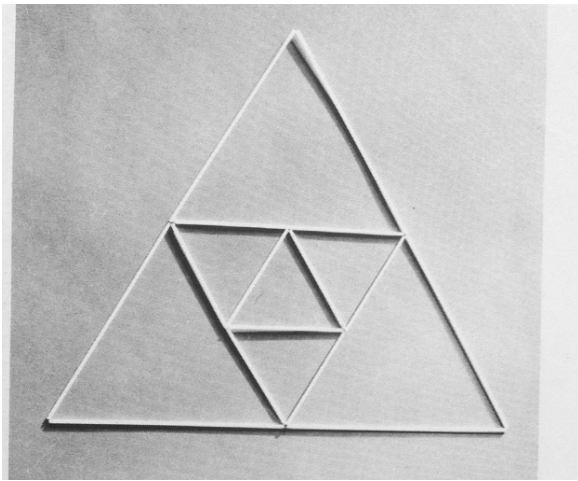
(Frank et al, UC San Diego, 2015)

# BIOINSPIRED GEOMETRIC FOLDING MODELS (ORIGAMI)



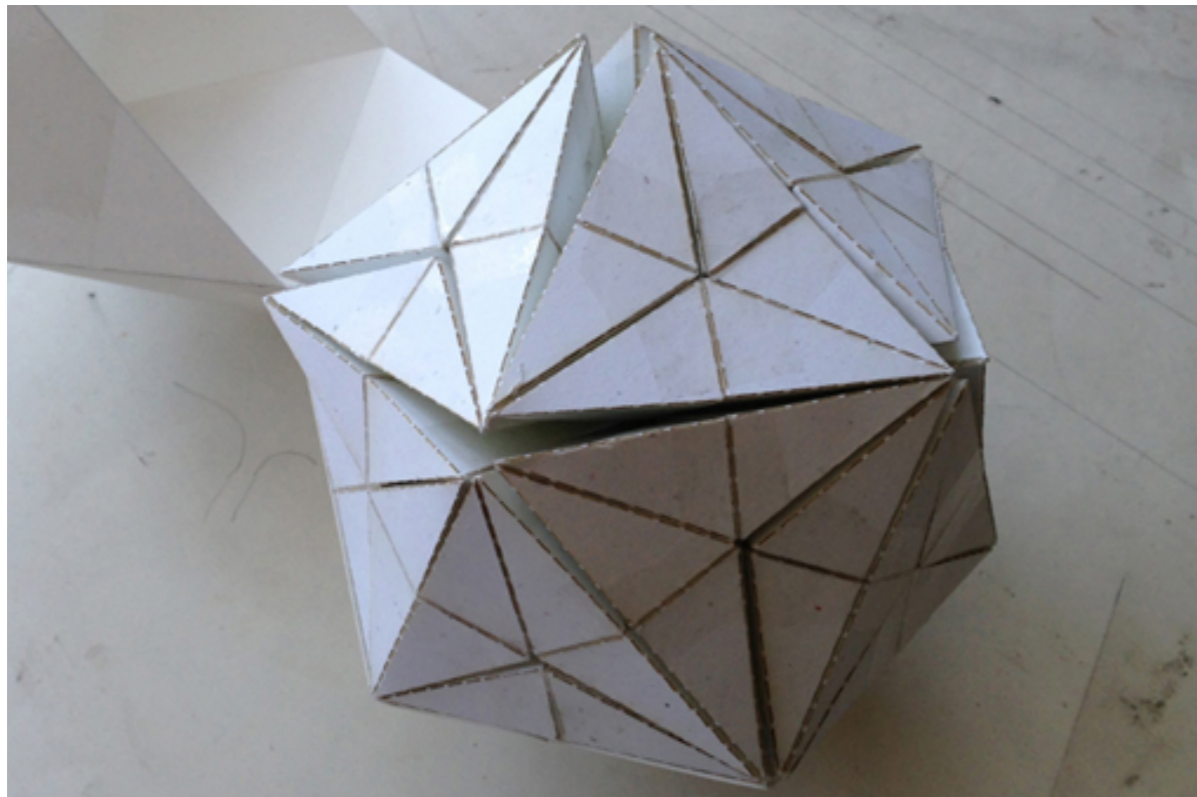


Scarpa, *Transformable cube*, 1965.



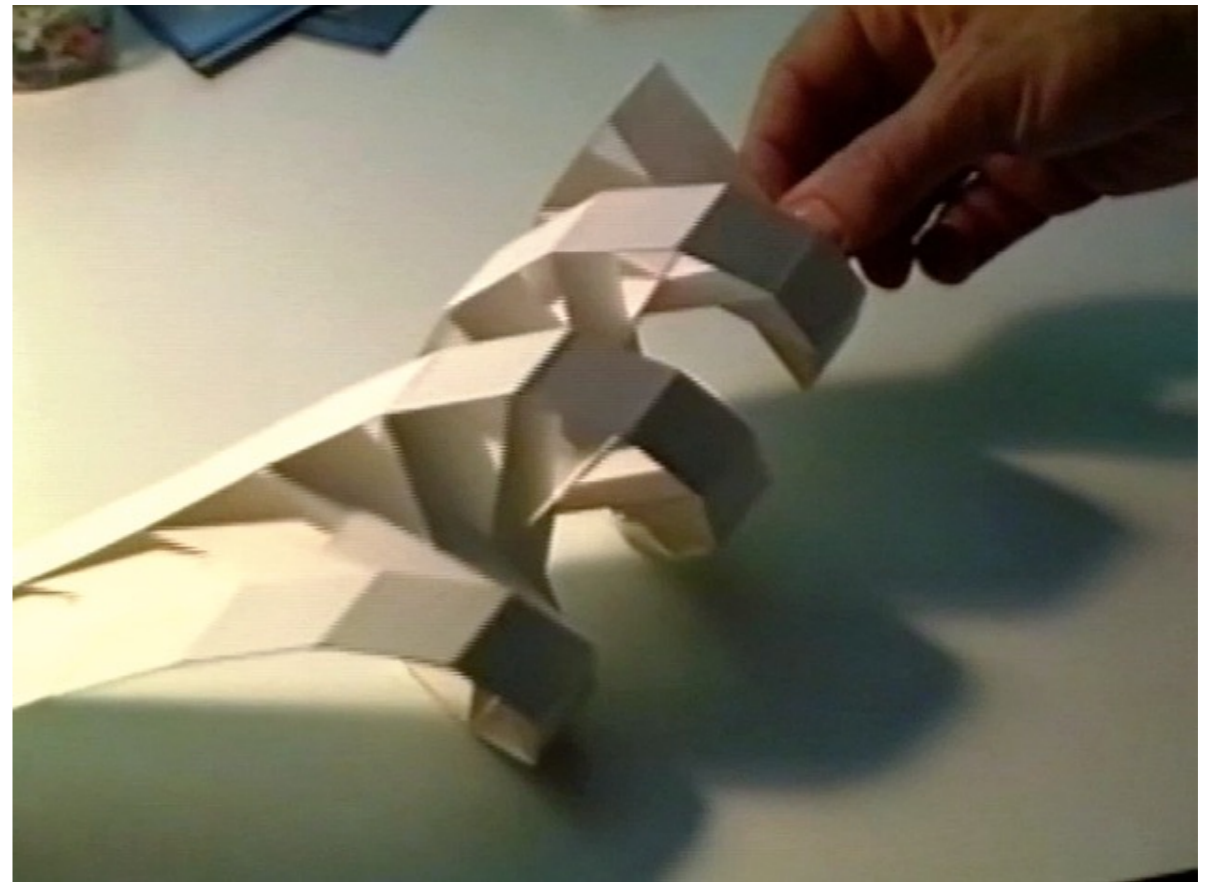
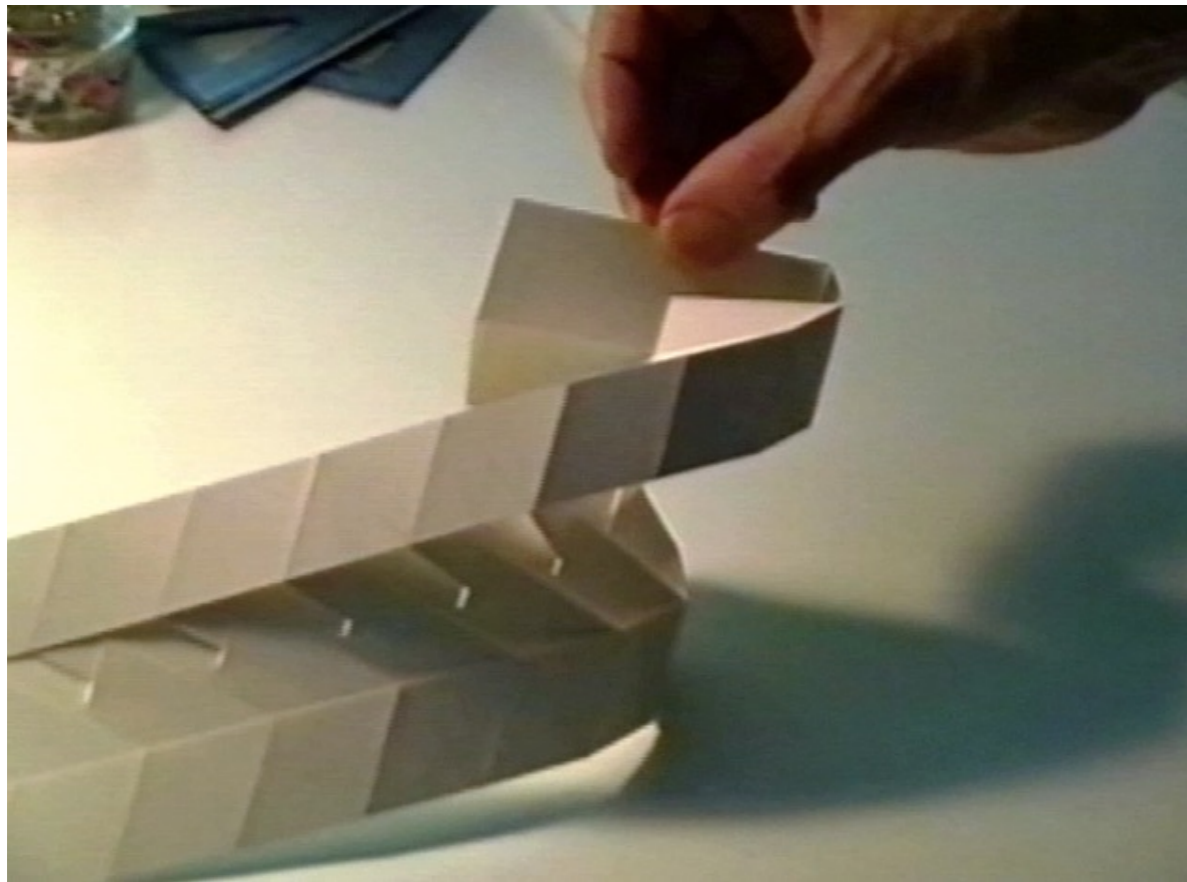
Scarpa, *Transformable triangle*, 1965.





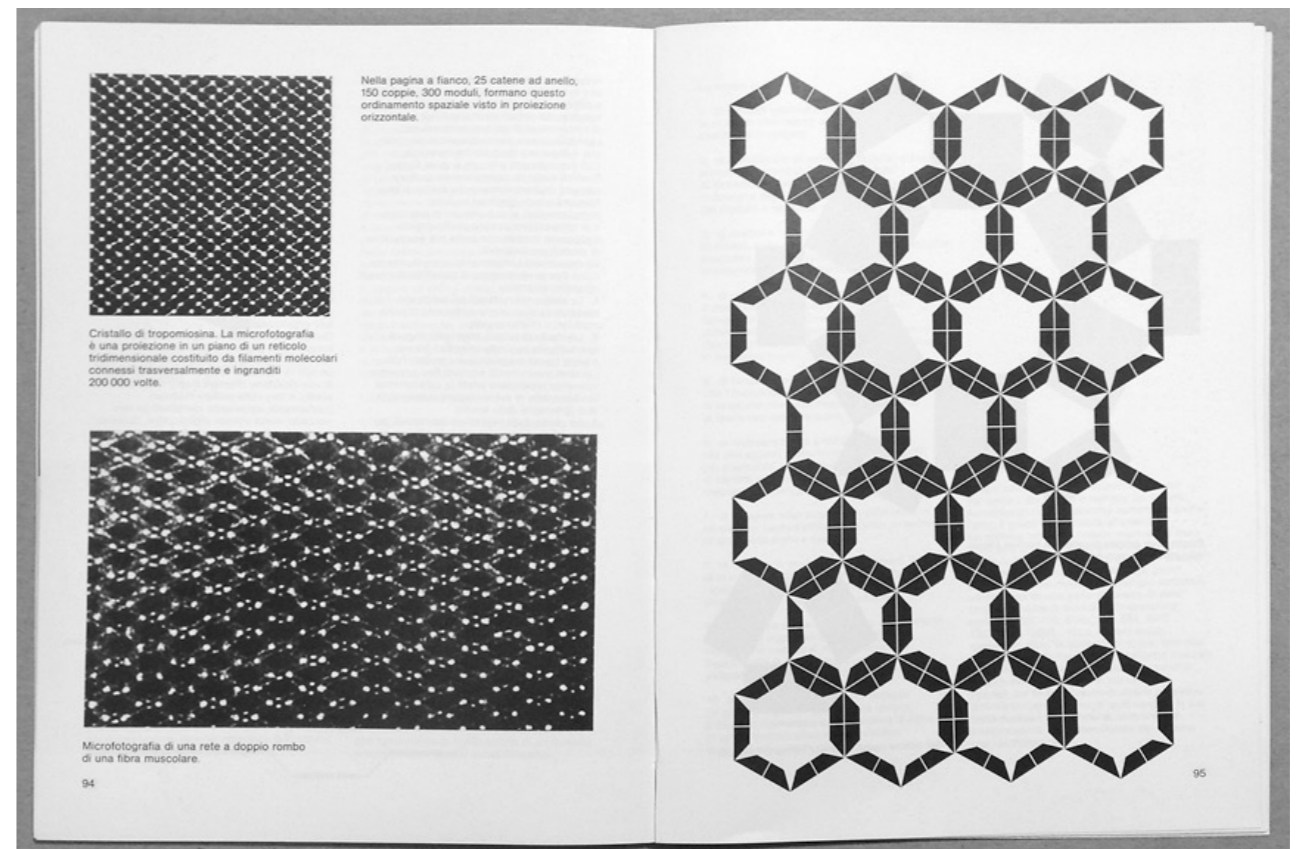
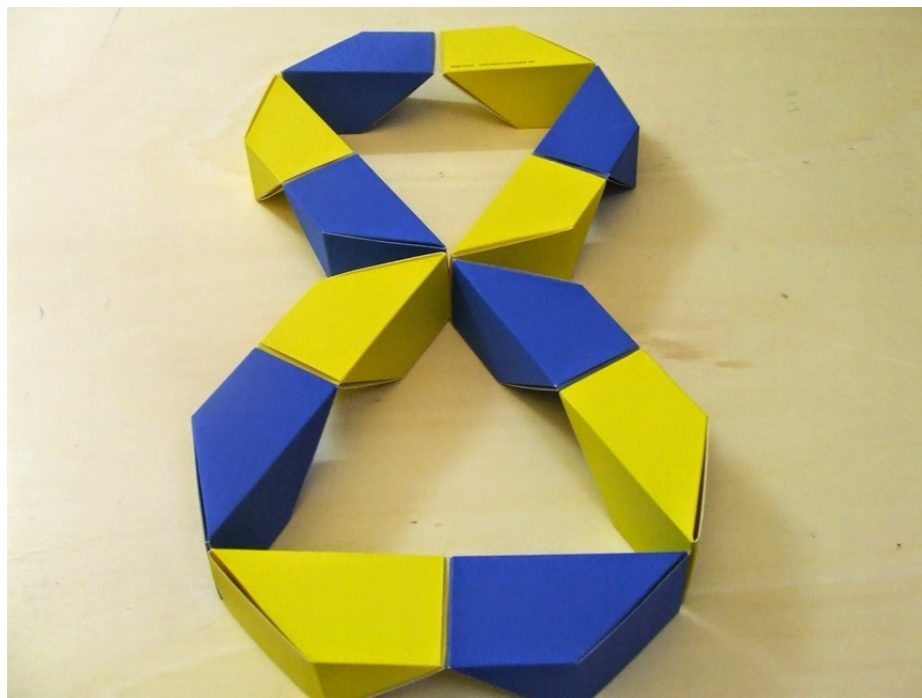
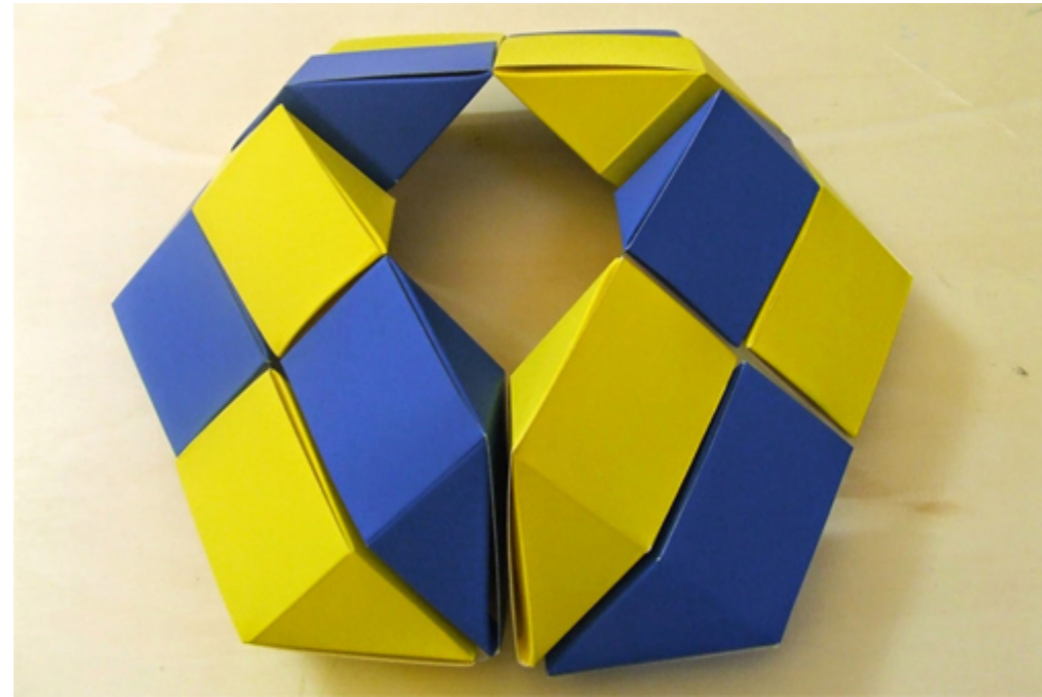
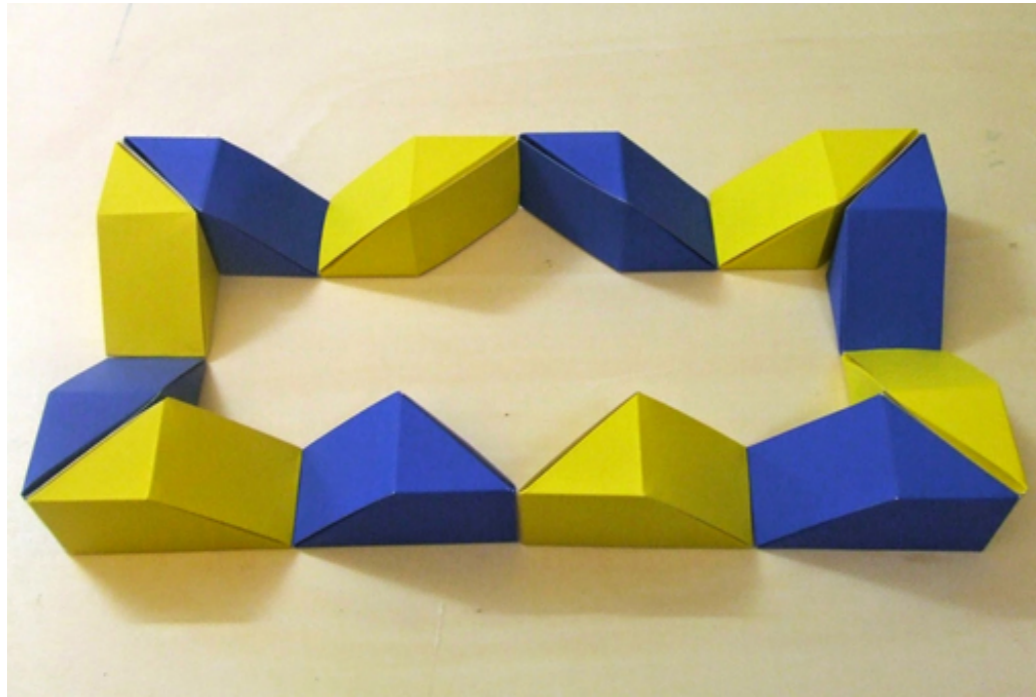
(Trogu & Nies, model based on Scarpa, 2015)

Scarpa, *Models of Rotational Geometry*, p. 112, & cover.



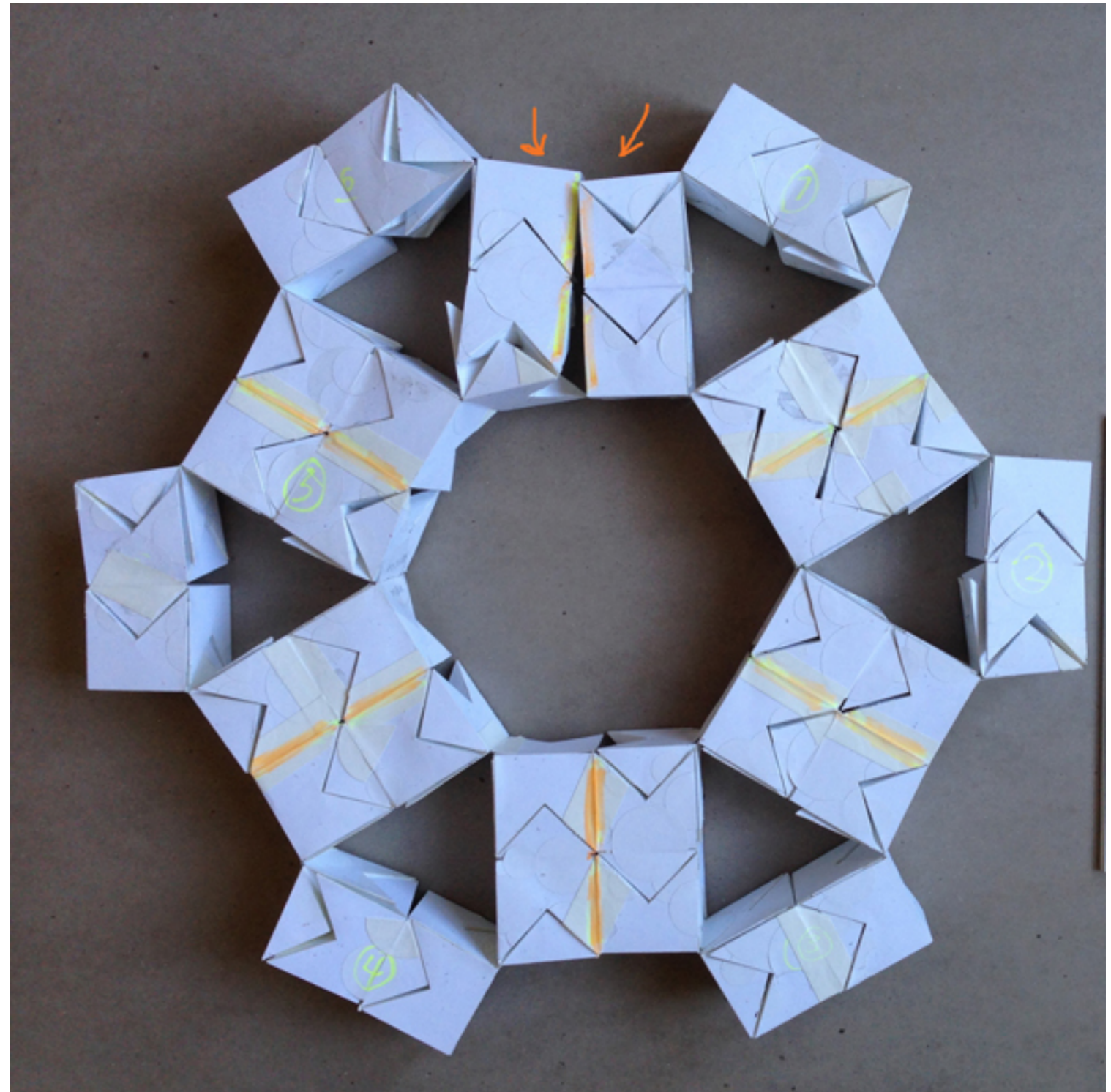
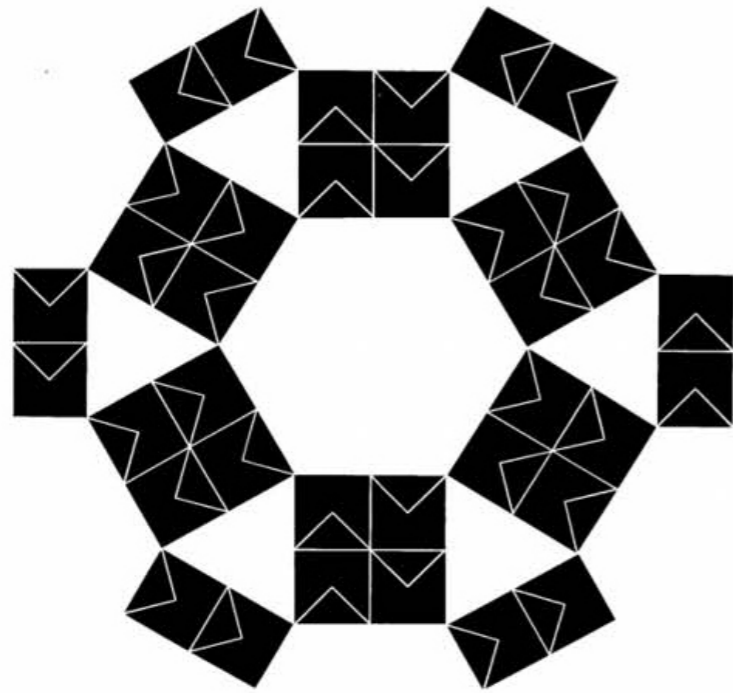
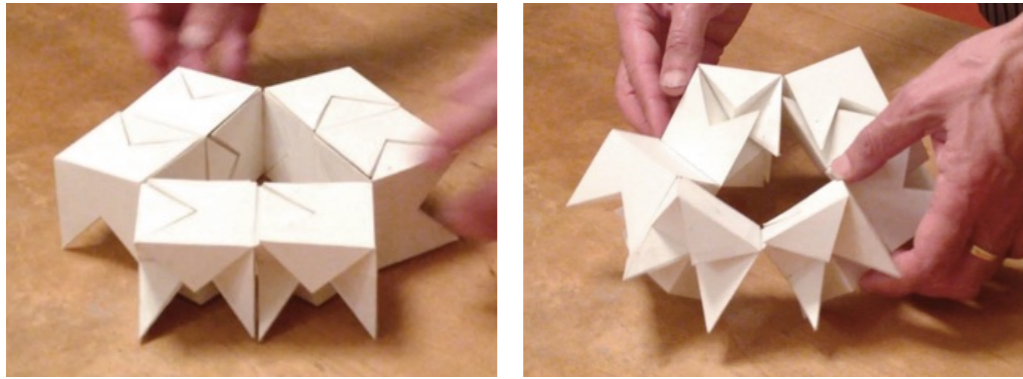
Scarpa, *DNA model*, circa 1980.





Scarpa, *Models of Rotational Geometry*, pp. 73, 95, & cover.

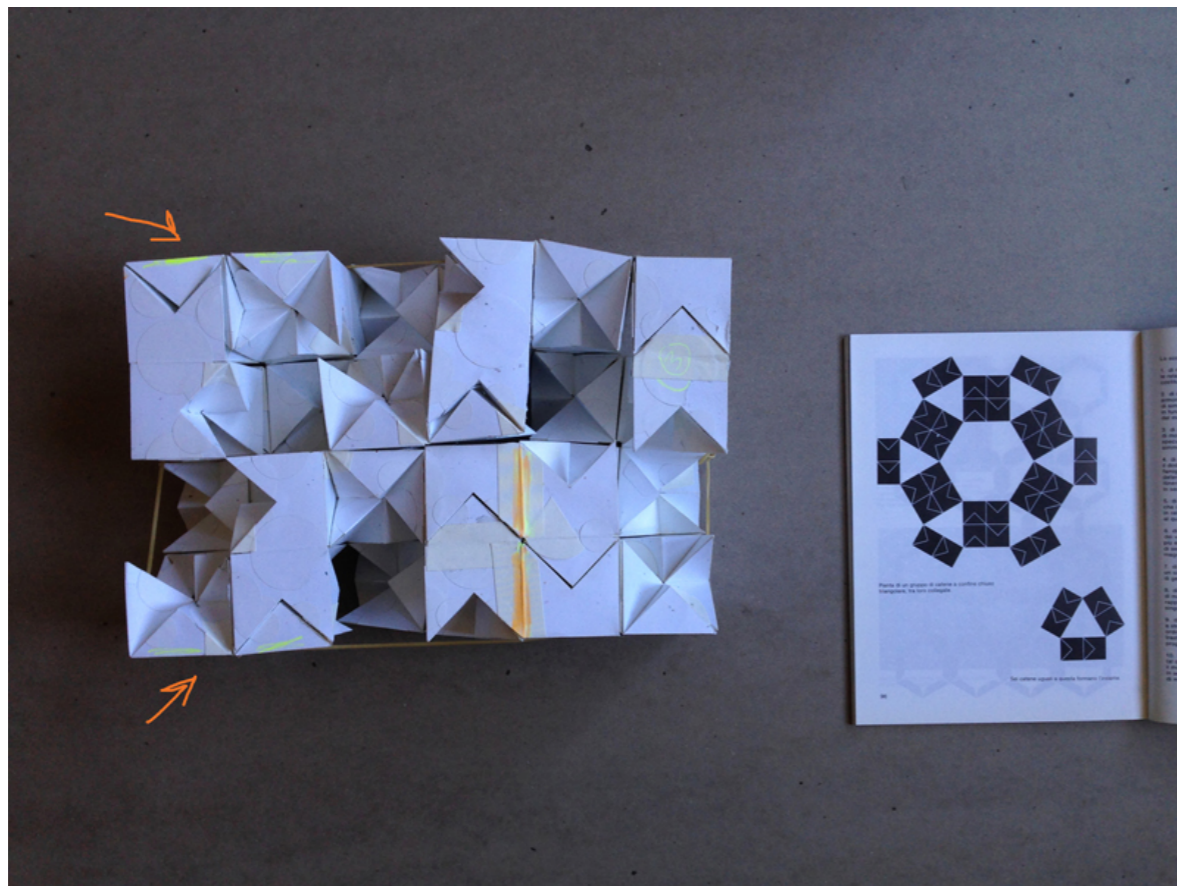
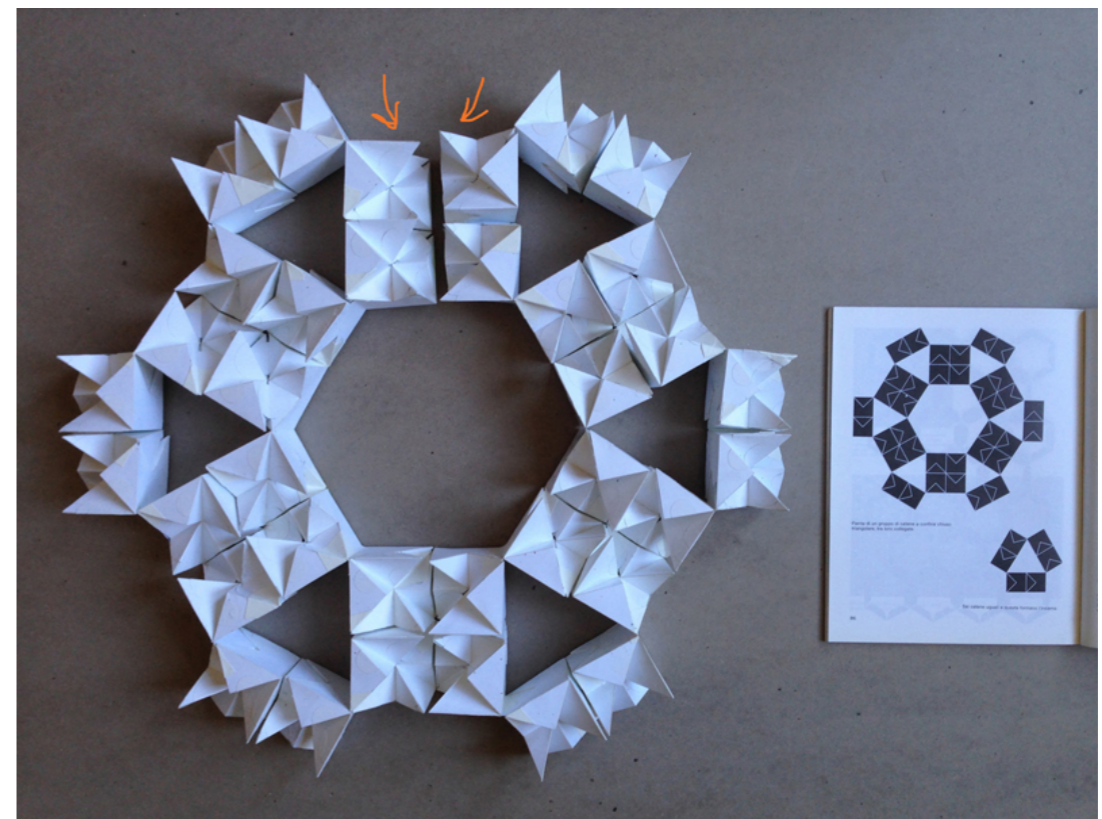
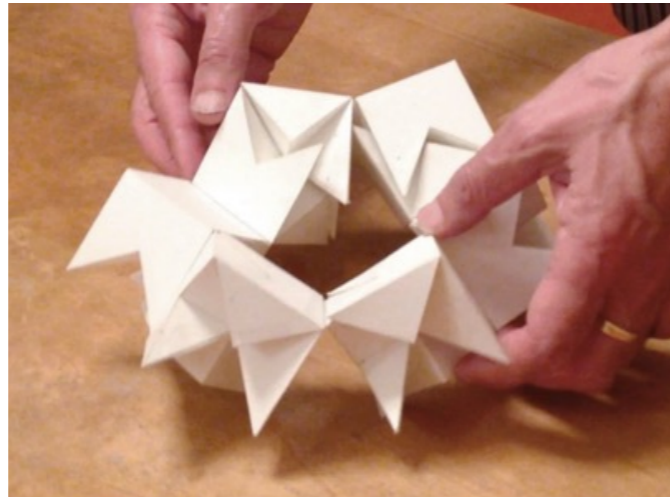
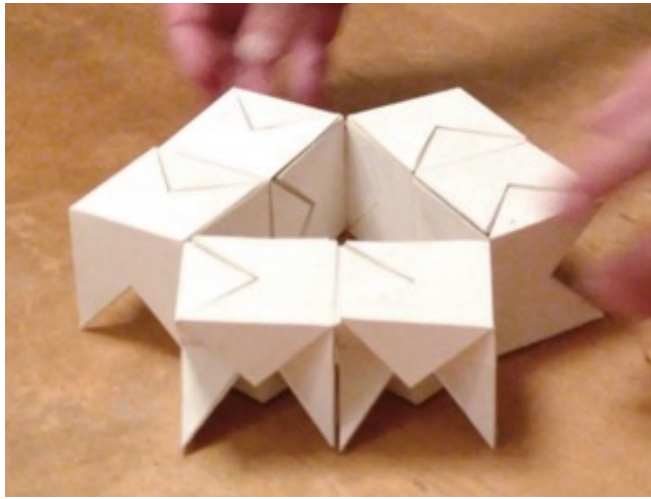




Scarpa, *Models of Rotational Geometry*, pp. 66-68, 96

(Trogu & Nies, prototype, 2015)

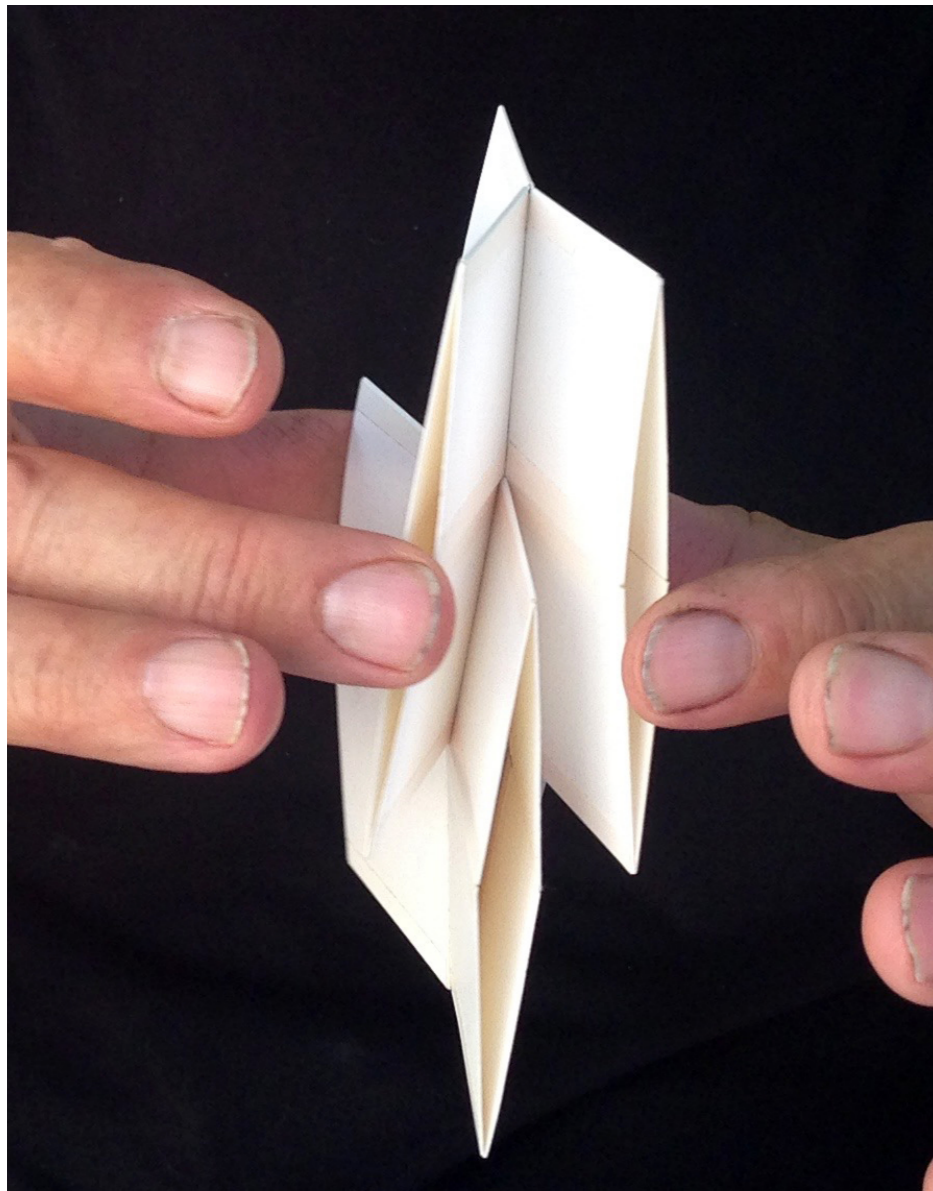




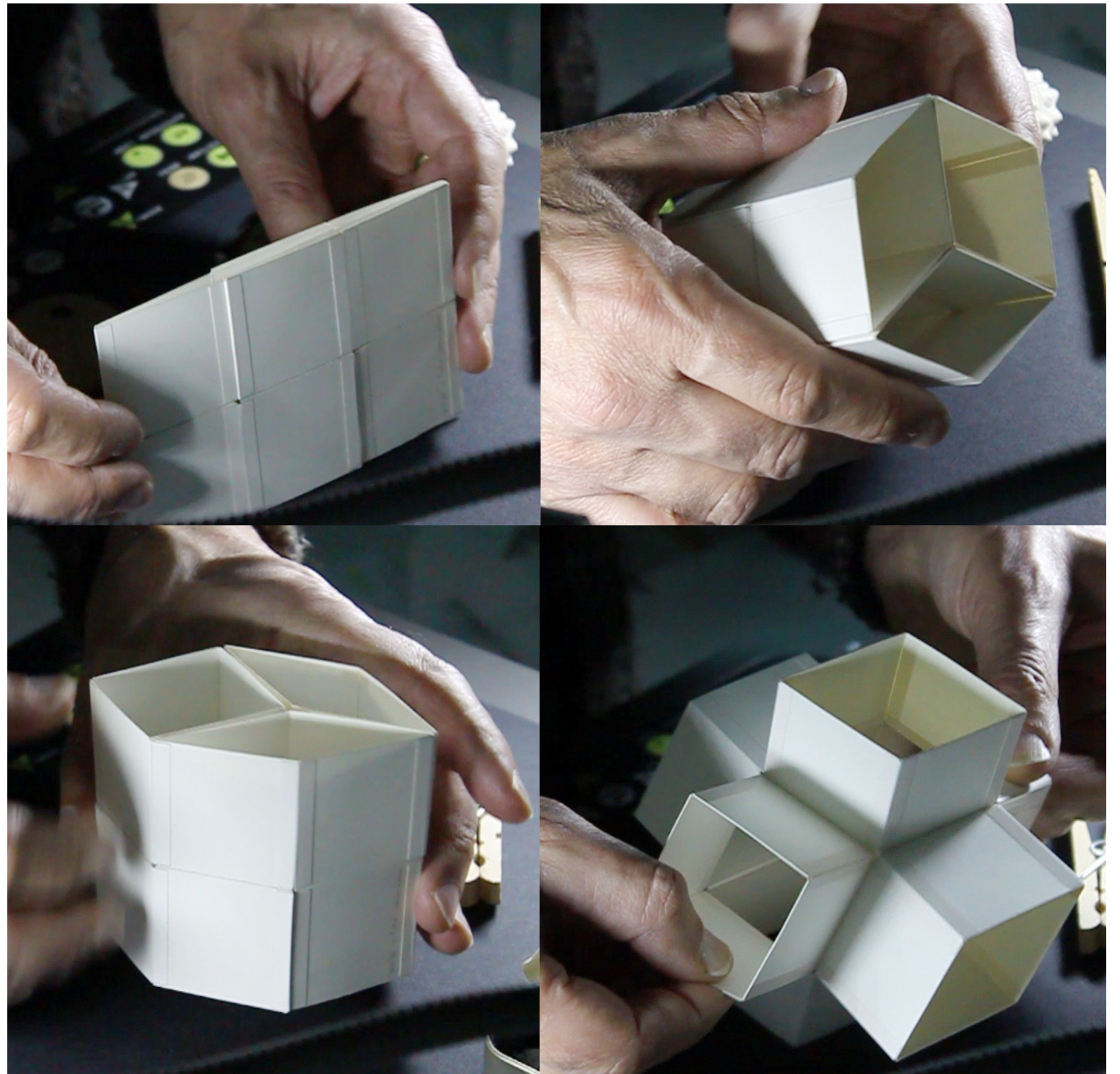
Scarpa, *Models of Rotational Geometry*, pp. 66-68, 96

(Trogu & Nies, prototype, 2015)

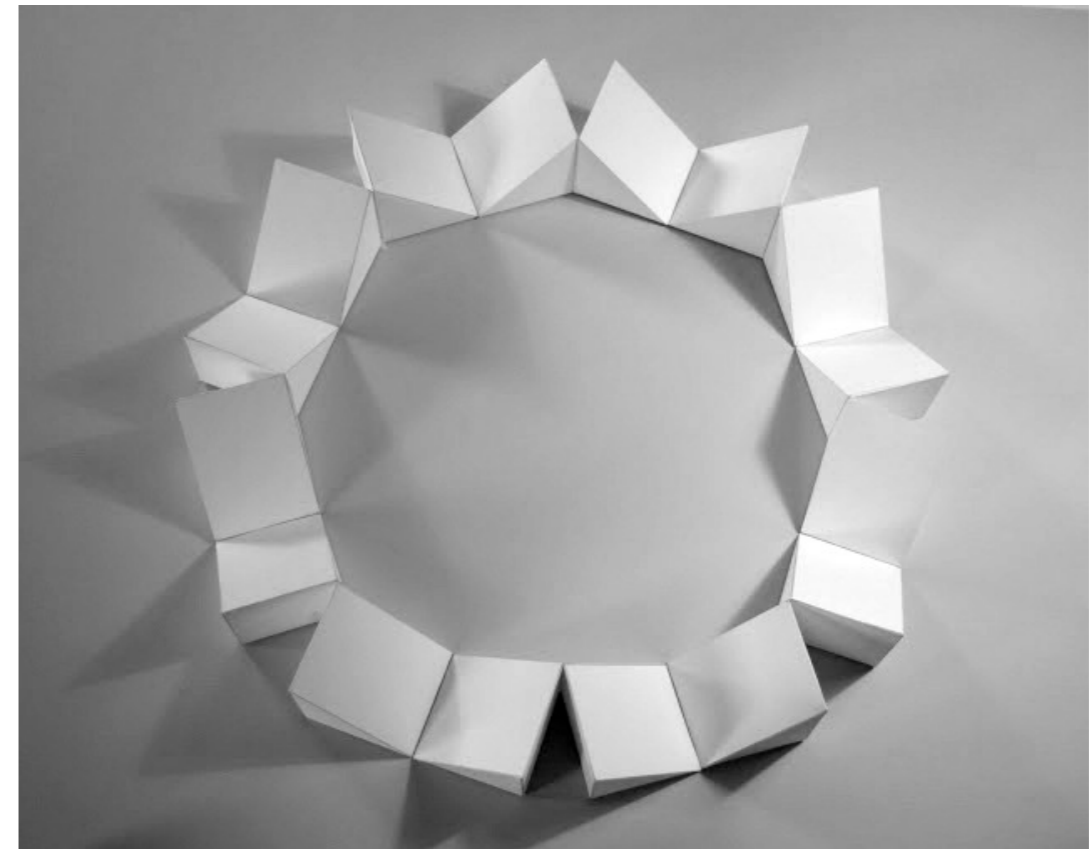
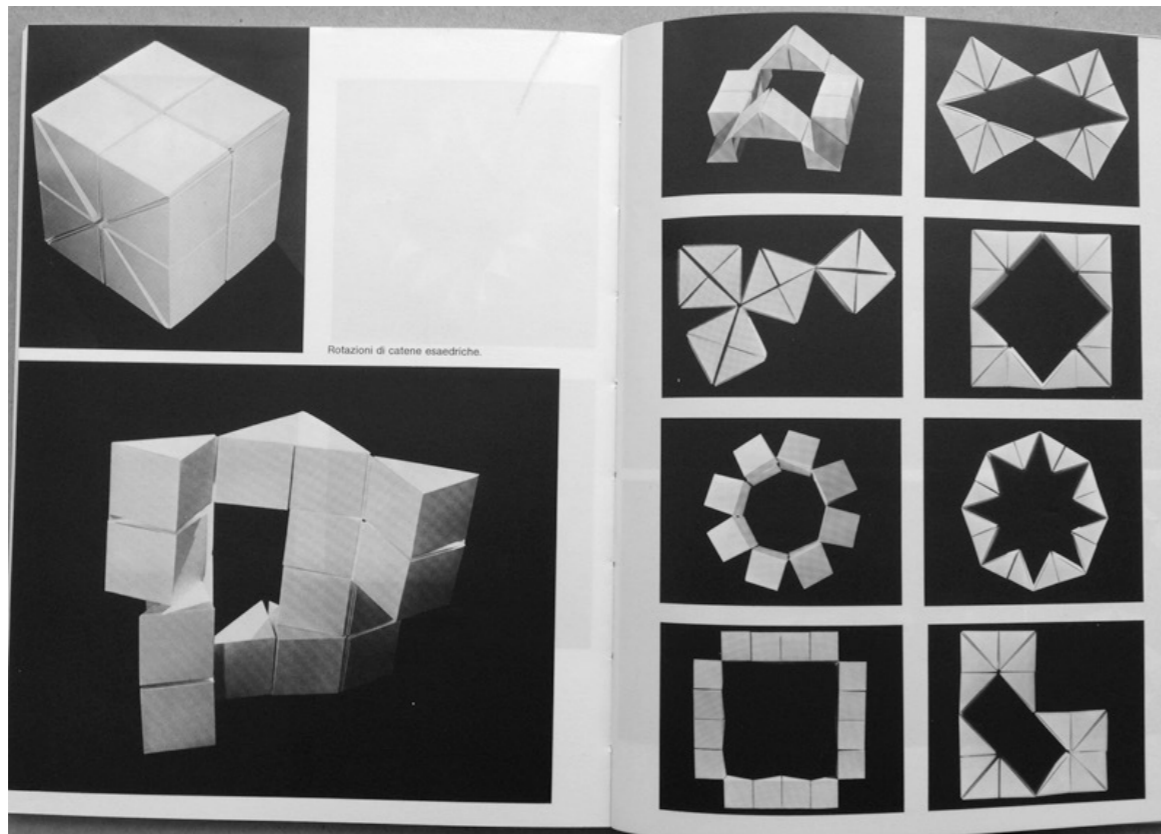




Scarpa, *Untitled*, 1996





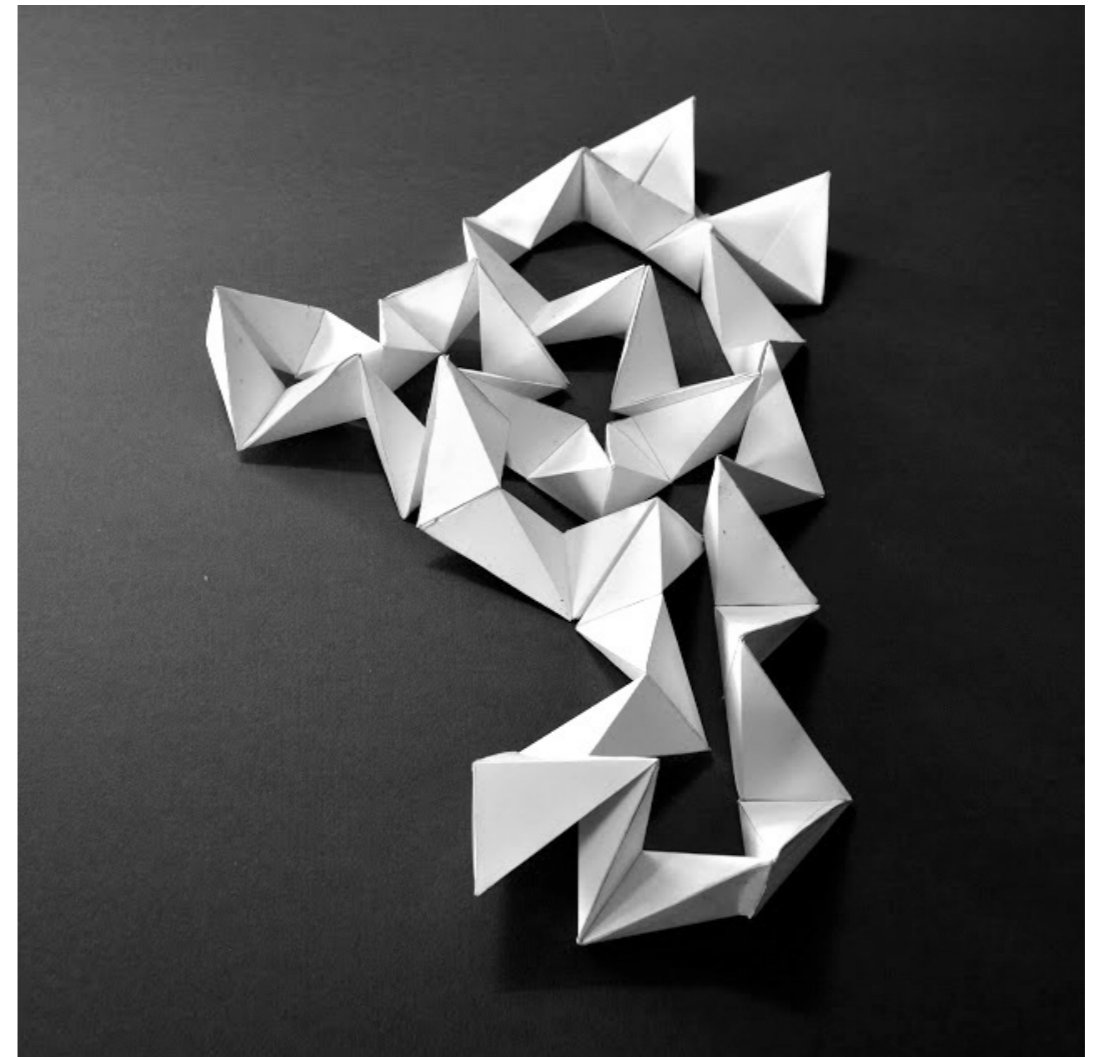
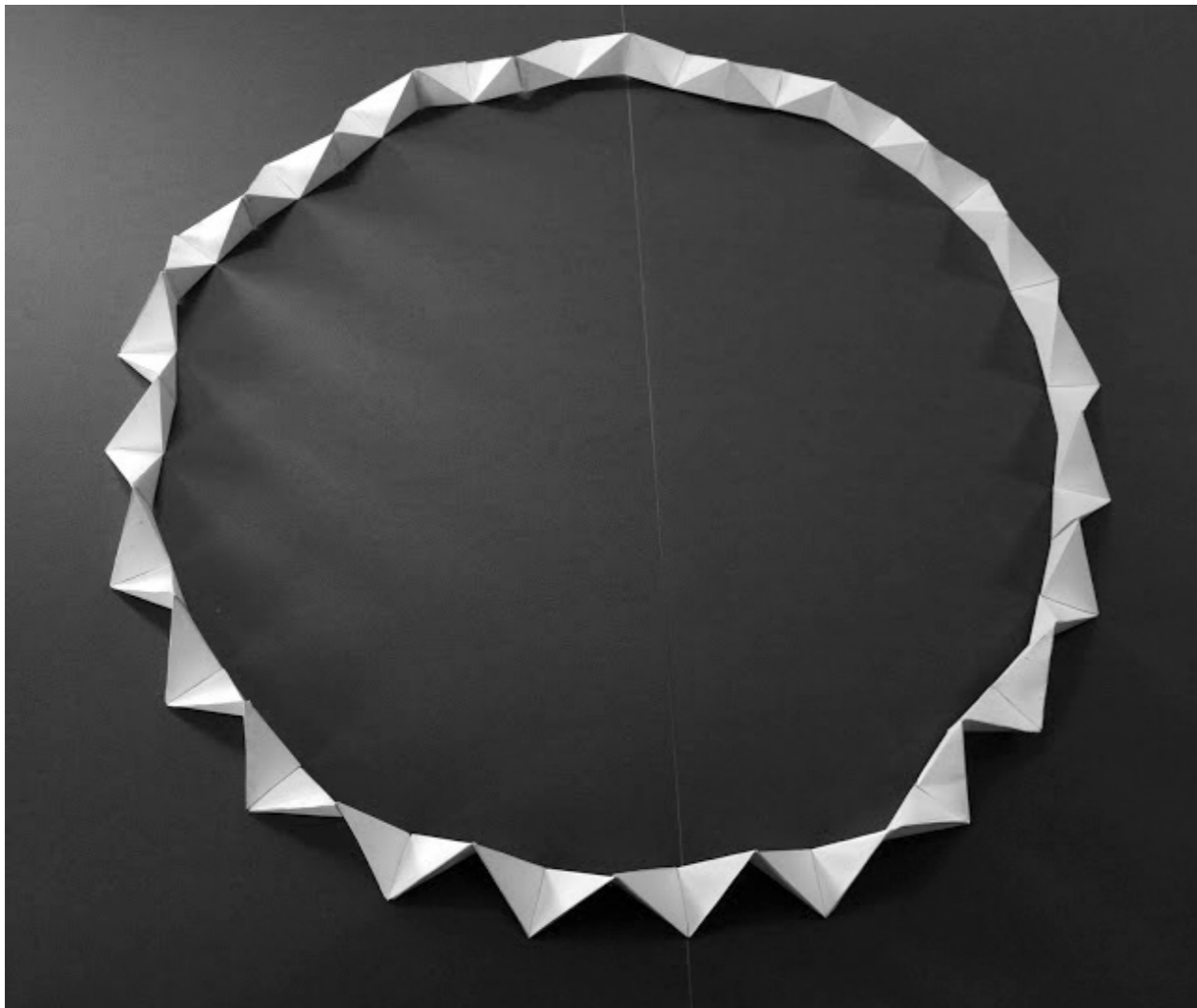
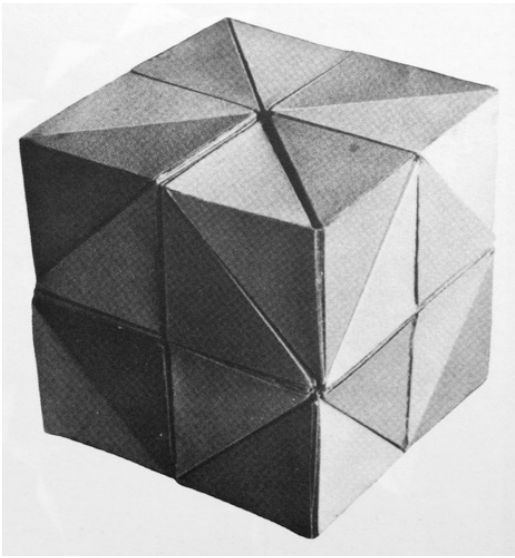


Scarpa, *Models of Rotational Geometry*  
pp. 76–77



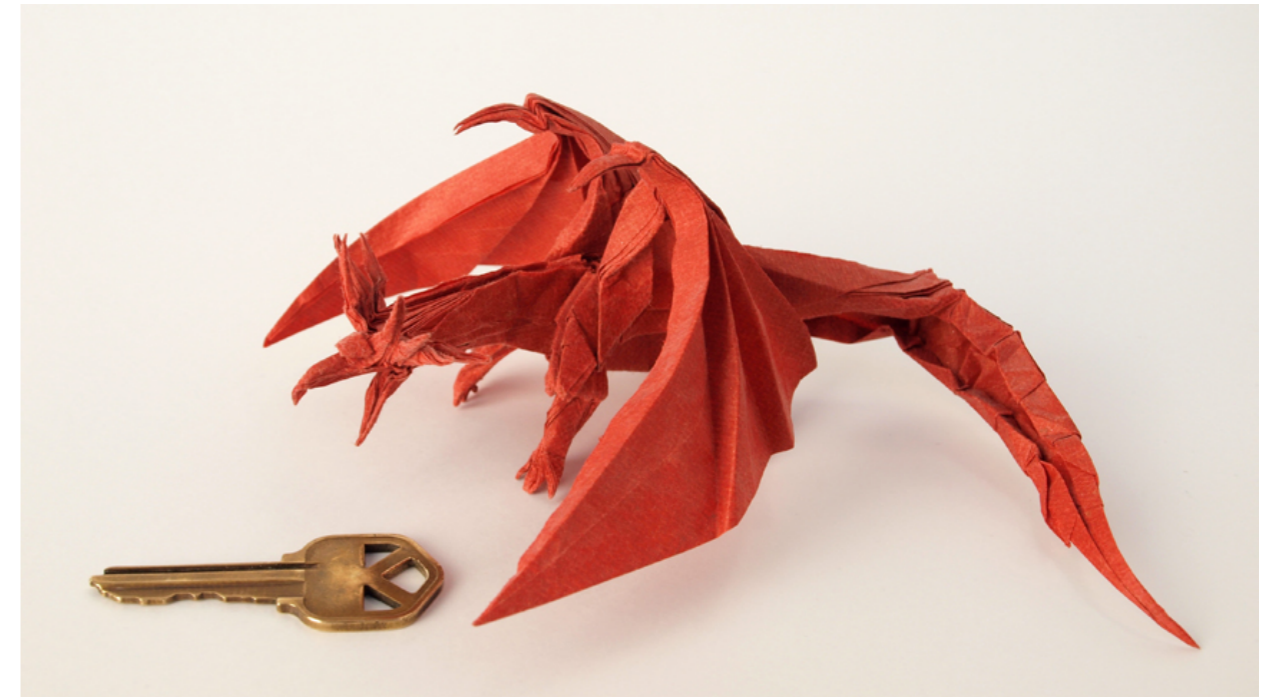
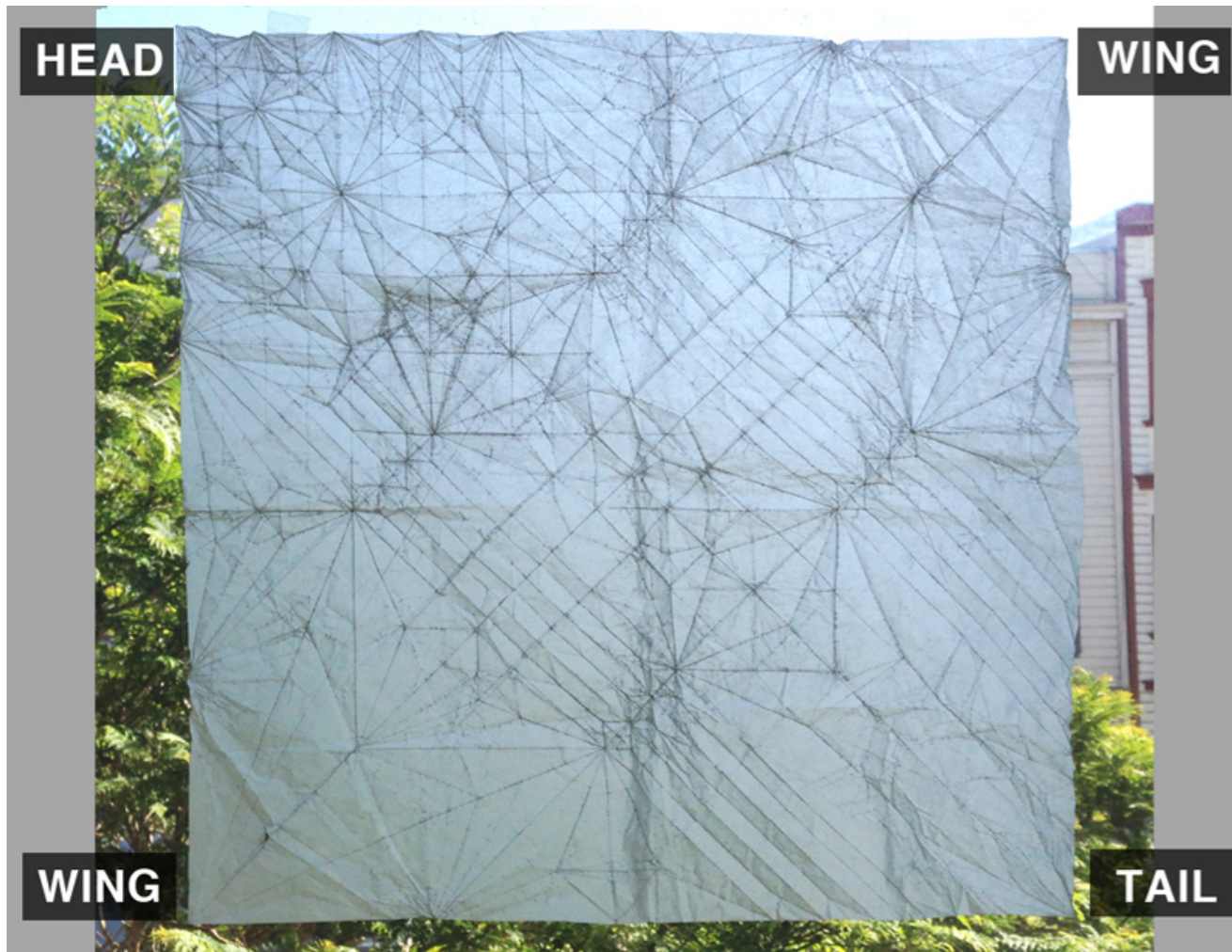
(L. Bocca, model replica, 2014)





Scarpa, *Models of Rotational Geometry*, pp. 87–92

(L. Bocca, model replica, 2014)

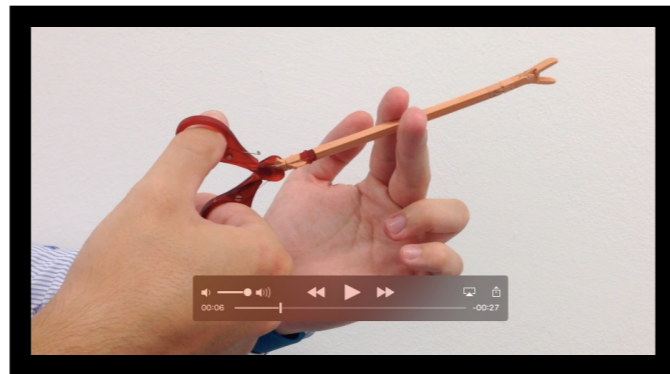


Ancient Dragon Origami, by Satoshi Kamiya  
Model construction: Francesco Trogu

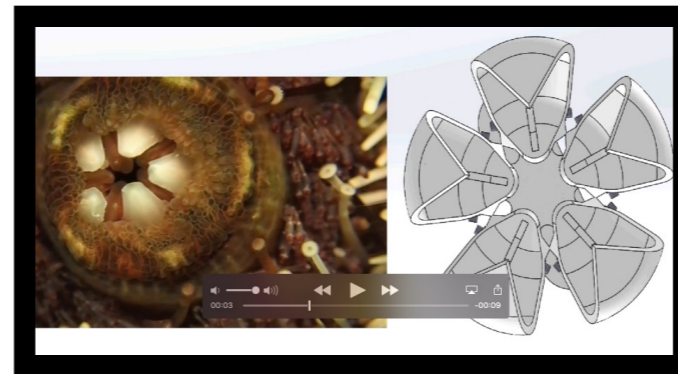




[scarpa lanterna aristotele](#)



[jelínek TU DELFT dragonflex](#)



[frank UCSD urchin side-by-side](#)



[scarpa "poi mi dimentico"](#)

# VIDEO

# THANK YOU!

PINO TROGU & FILIP JELÍNEK

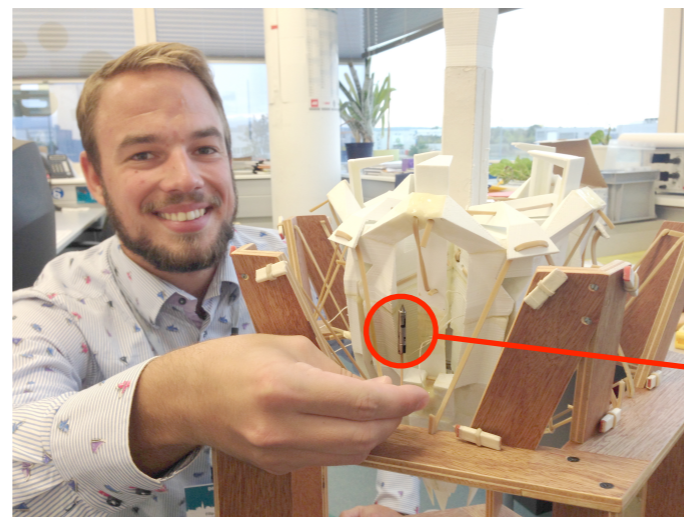
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DESIGN OF MEDICAL DEVICES EUROPE 4TH EDITION – JOINT CONFERENCE



Giorgio Scarpa, Pino Trogu, 1988



Filip Jelínek, 2015



## Contact

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[go to first slide](#)