

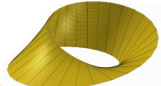
How can sculptures induce visual dynamical processes for the spectators ?

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My background :

- professionally a mathematical engineer, professor emeritus
- former president Royal Academy Belgium
- over 16 years about 20 abstract sculptures in soft natural stone with nice colors, shapes and crystals (summer free time activity)

1. Three inspiring elements support the creative process

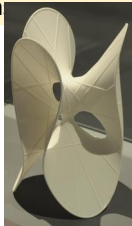
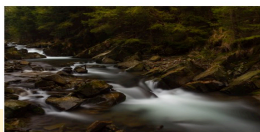


Smooth surfaces based on natural convex and concave shapes and mathematical equation



Henry Moore

Natural shapes are carved in stones by mountain rivers



2. The instruments



Nature does it with water, wind, and during a long,.. long period



Sculpting in soft stone with chisel, hammer, grater and sandpaper, and (almost) no electric tools. One to two weeks



3. The **process** of sculpting is important for the sculptor while the viewer only sees the **end product**

Sculpting = subtractive removal process (positive stress in sculptor) Sculpting gives life (=shape, form, and color) to the stone



4. Ups-and-downs of the sculpting process



Start with rough stone



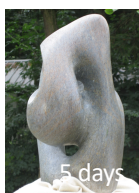
1 day



2 days



4 days



5 days



6 days



Endpoint in Summer 2005

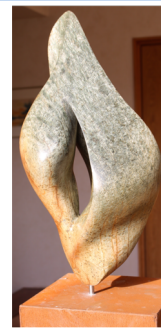
BUT

For the sculptor : process incomplete
Finished one year later

5. Spectator on a fixed viewpoint: look at shapes, forms, surfaces, lines, colours, transparency



6. Spectator moving around the sculpture: look at shapes, forms, surfaces, and lines



7. When moving around the sculpture a dynamical visual process of the varying outlines and openings is created



8. The mathematics (without equations this time)

- surfaces hyperboloids, paraboloids, surfaces with soft derivatives.
- smooth curves when two surfaces meet each other,
- openings link the front and back sides.
- All these trigger different visual perception of the spectator, depending on his relative position.

9. Visual & tactile perception
sense of unity, strength, attraction

- visual system sensitive to the smoothness of curves and surfaces.
- tactile sensing as the fingertips move smoothly over the surface
- For every position the spectator sees a different 2D outline of the sculpture and inner opening.
- seduces the spectator to move around the sculpture : curiosity
- While moving the spectator has visual perception of a varying inner and outer outline of curves, shapes, openings and colors.
- A comprehensive 3D visual impression of the sculpture is created

Open research questions :

Link spectator eye, head and body motion with the sculpture
Combine tactile, visual, depth and colour perception
Video perception of outline of sculpture and the openings as the spectator moves around the sculpture.