The Vasarely Playhouse: Look and Combine!

Slavik Jablan
The Mathematical Institute
Knez Mihailova 36
P.O.Box 367
11001 Belgrade, Serbia
E-mail: sjablan@gmail.com

Kristóf Fenyvesi
Jyväskylä University (Finland)
Ars GEometrica Community & Experience Workshop Movement (Hungary)
Csikor K. u. 11., III./12.
H-7633 Pécs, Hungary
Homepage: www.experienceworkshop.hu
E-mail: fenyvesi.kristof@gmail.com

Abstract

Many of Victor Vasarely's (1906-1997) works are based on the modularity and construction of different visual objects from prefabricated basic elements. In this workshop we would like to illustrate a few of Vasarely's main visual concepts: the use of transparent elements in sculpture, the recombination of tiles for obtaining different patterns and the use of Op-art effects. For this we propose three constructions: production of a hypercube from a transparent hypercube net, 3D transparent Op-cubes by folding and gluing printed transparent elements, and an Op-tile game. Participants can thus explore the mathematical dimensions of Victor Vasarely's world and have a memorable glimpse of Jablan and Fenyvesi's collaboration on the field of experience-centered education of mathematics and the pragmatist aesthetics of interdisciplinarity.

The oldest examples of geometrical ornamentation in Paleothic art were from Mezin (Ukraine) dated to 23 000 B.C. In Figure 1 we see the final result, the masterpieces of Paleolithic art ─ the Birds of Mezin and a bracelet decorated by meander ornamentation. The basic element of this and all similar key-pattern constructions used in the whole history of art is the square with parallel diagonal black and white strips. Since this square is abundantly used in 20th century Op-art, we named it Op-tile. The same modular basic element can be used for the construction of labyrinths (Fig. 2)

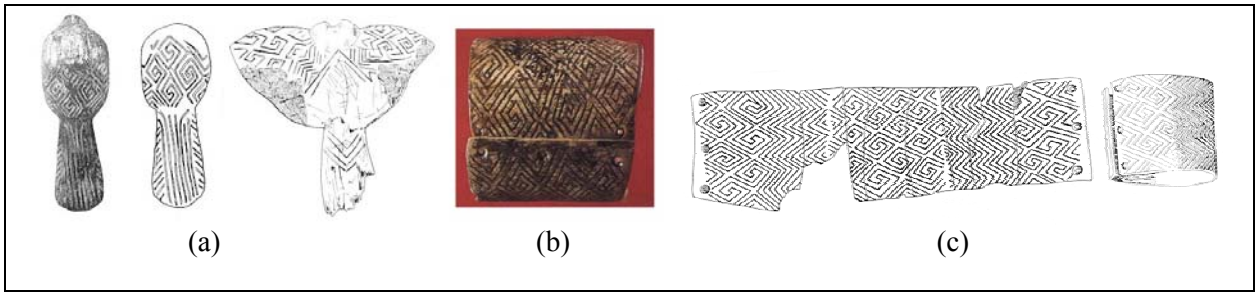

Figure 1: *(a) Bird of Mezin; (b) Mezin bracelet; (c) developed bracelet.*

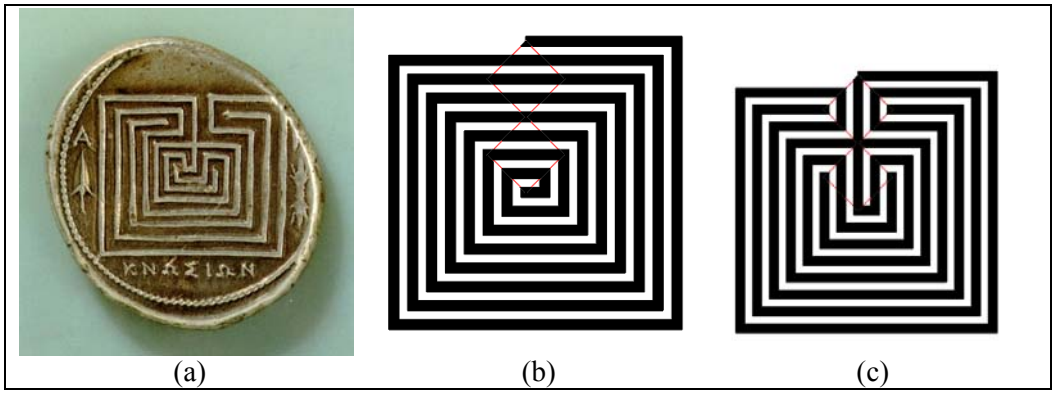

Figure 2: *(a) Silver coin from Knossos with the image of labyrinth; (b) meander which can be composed from Op-tiles; (c) its transformation to maze.*

In this workshop we propose a few possible uses of Op-tile for the construction of geometrical 3D-structures (Op-tile Hypercube, Transparent Op-cubes) and 2-dimensional patterns (Op-tile Game). Since Victor Vasarely, an originator of Op-art used similar transparent sculpture constructions (Fig. 3) and modular prefabricated elements we dedicated this workshop to the memory of Victor Vasarely, who proposed modular constructions as the best tool for developing creativity and imagination by using infinite possibilities for re-composition of the same basic elements.

Figure 3: *Gamma*(1968) by Victor Vasarely.

Op-tile Hypercube

1) Fold the edges denoted by broken lines and glue together two opposite edges.
2) Join together the 6 pieces produced by gluing together the upper edges denoted by bold lines.
3) Make the hypercube by fixing together the corresponding inside edges by using pieces of adhesive transparent tape (it is not necessary to completely glue the edges, just fix the middle parts).

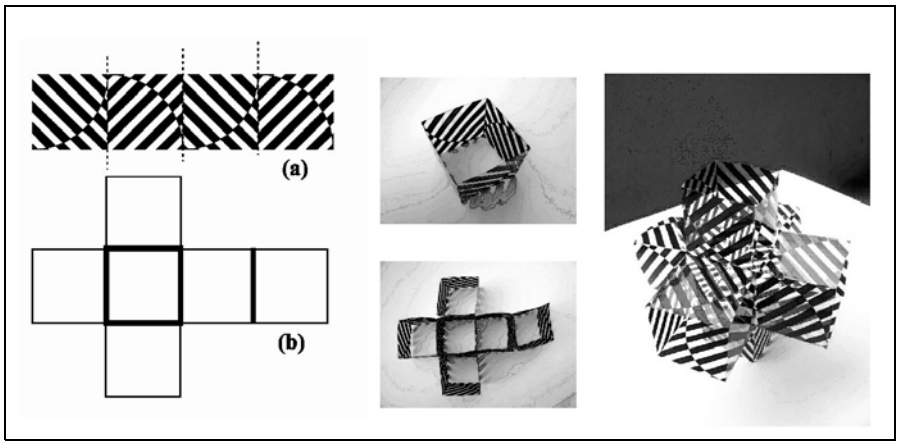

Figure 4: *Op-tile Hypercube.*

Transparent Op-cubes

1) Fold the edges denoted by broken lines and glue together the other two edges by using pieces of adhesive transparent tape.
2) From the parts obtained make the Op-cube.

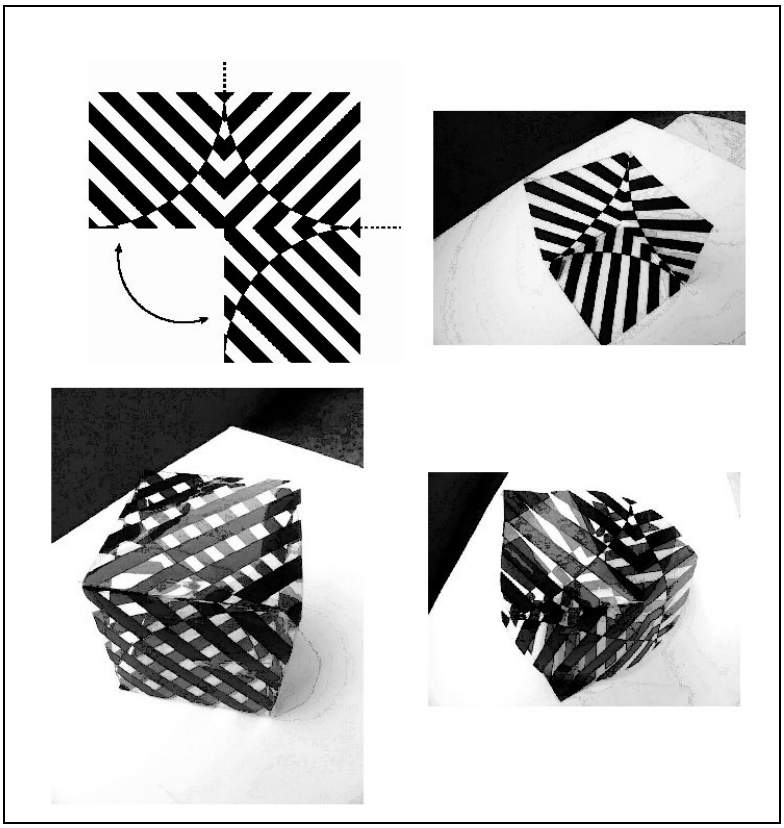

Figure 5: *Transparent Op-Cube.*

Op-tile Game

From Op-tiles you can make your own design! Certainly you can put the pieces together edge-to-edge, but more interesting effects can be obtained by shifting. Glue your final design onto paper!

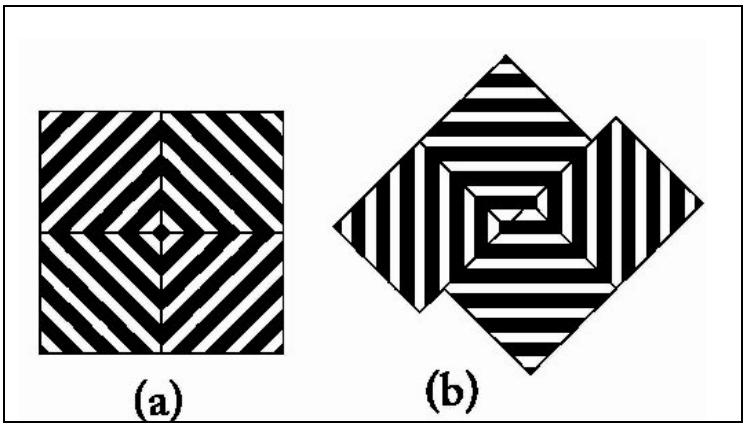

Figure 6: *Op-tile game.*

More attractive results of the Op-tile Game can be produced by using Op-tiles with different shades of gray or colored Op-tiles.

Figure 7: *Op-tile game with gray shaded tiles* .

References:

[1] Slavik Jablan: Symmetry, *Ornament and Modularity*, World Scientific, Singapore, 2002.
[2] Collection of the Vasarely Museum, Vasarely Museum, Pécs.
[3] Slavik Jablan & Ljiljana Radović: The Vasarely Playhouse. Ed. Kristóf Fenyvesi. Janus Pannonius Museum, Pécs, 2011.