The *3D* Illusion of *2D* Regular Tessellations

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For the last several decades the Escher-like symmetry patterns have accupied wide area in the creative art. Strong geometrical basis, absence backgraund, modulity, regularity, using more and more new mathematical ideas, etc., have opened new aestetic and applied avenues for this style.

I would like to emphasize one more peculiarity them, namely the *3D* illusions of *2D* regular tessellations. This illusion is based on viewing with two eyes. At focusing the eyes as shown in *pic.1* we will see:

a) normal;
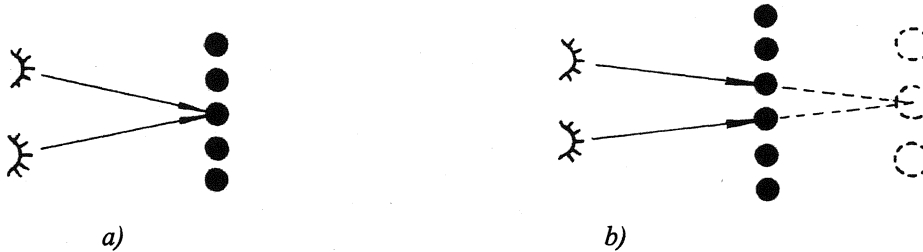
In b) and *c)* the object seem to be further awey. *(Note that the filled circles represent the real object, that the while the hollow circles are the respective false imiges)*


c)
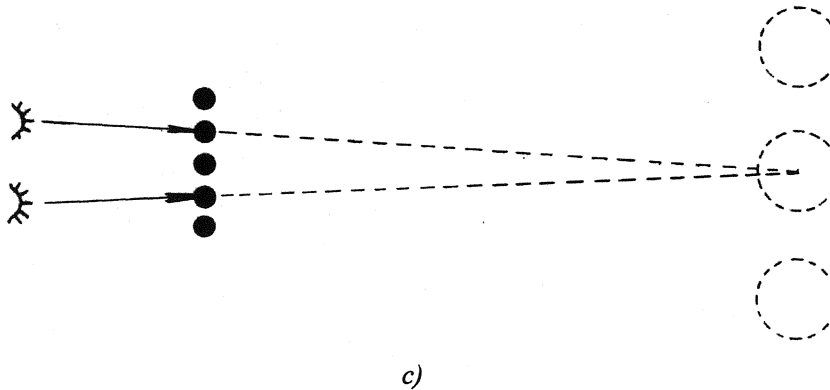
d) and *e)* the imiges look closer.

For instance in *pic.2a** we can easily prove that. *Pic.2b* and *pic.2c* show the method of making additional periods, where we can see analogical illusions simultaneusly at several different planes from the looker. In the case of color pictures *(pic.3)***, as a result from the summation of existing colors we will observe new colors, which are absent in the original picture. May be this effect is one of the reasons of the high attractivity of medival architectural buldings, carpets, etc. decorated with geometrical ornaments.
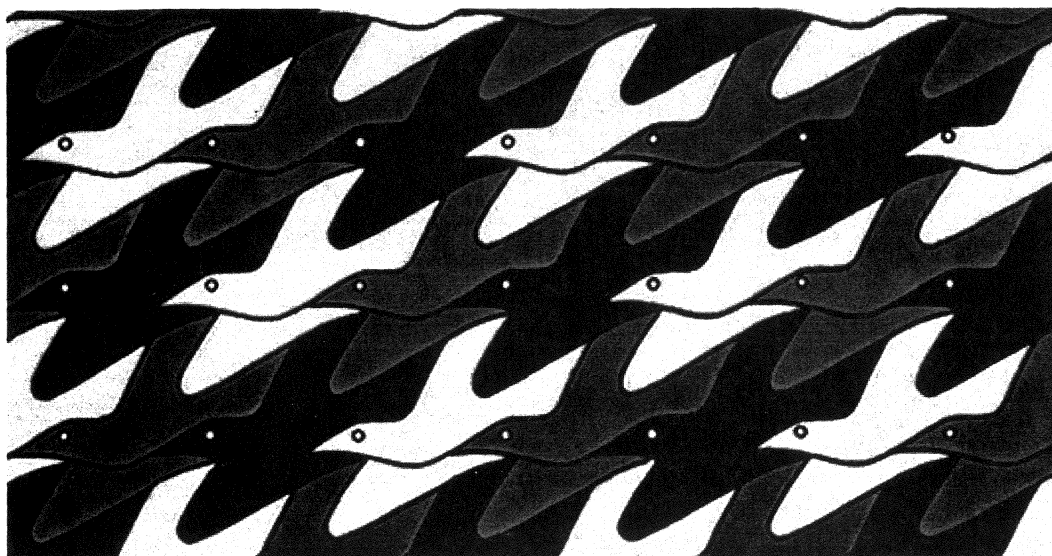
a)

b)
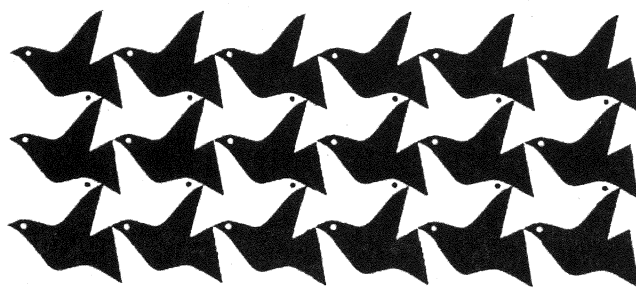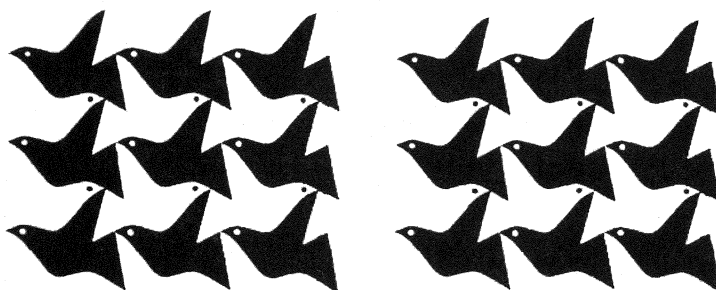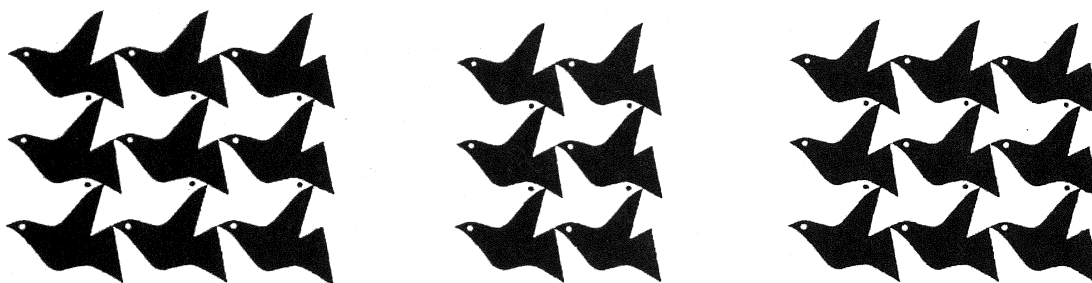
Pic.2   *c)*

Pic.3

*   *Pic.2 created by Imameddin Amiraslanov, Baku, Azerbaijan*
**   *Pic.3 created by Jamal Jamalov, Baku, Azerbaijan*