# Composing Different Tessellation from the Same Elements

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Obviously, creating tessellations of Escher-like, is not an easy task. As a rule the solutions found (pattern elements) are design only can be composed although there are few examples where the elements found allow for composing two or three different patterns. In this respect, the fish elements shown below
(*pic. 1(a,b)*) are unique.
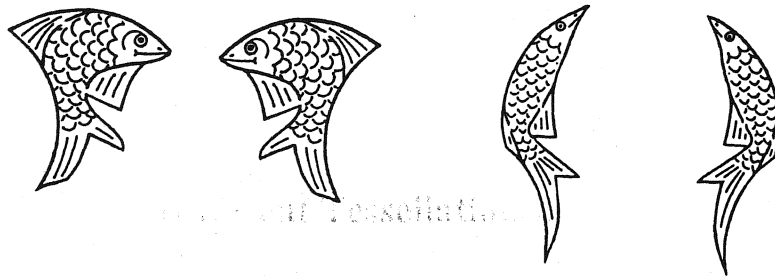
Pic.1   a   a*   b   b*

These two thin and thick fish forms together with their mirror   view *(pic. 1 a*, b*)* can compose a lot of patterns, sach as:

- *10* fold quasiperiodical   *(a, b)*   *pic. 3*
- *5* fold quasiperiodical   *(a, b, a*, b*)*   *pic.4*
- *10* fold radial symmetry   *(a, a*)*   *pic. 5*
- *5* fold radial symmetry   *(b, b*)*   *pic. 6*
- spiral *1*   *(b, b*)*   *pic. 7*
- spiral *2*   *(b, b*)*   *pic. 8*
- spiral *3*   *(b, b*)*   *pic. 9*
- many different *2D* periodical patterns   *pic. 10, 11, . . .*
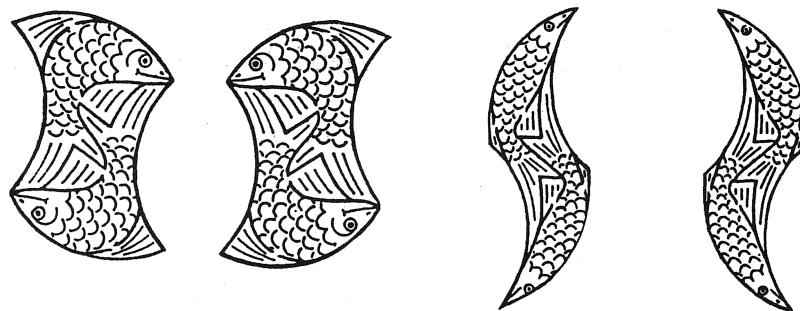
Pic.2   *aa*   *a*a*   *bb*   *b*b*

These pictures may with be used with success in explaining the geometrical basis of quasicrystals, spiral growing, phenomeneon of polymorfism, the plane groups of symmetry in teaching of crystallography and relevant subjects. Also these two fish forms can serve as a basis for preparation of a number of applied objects and educational toys.
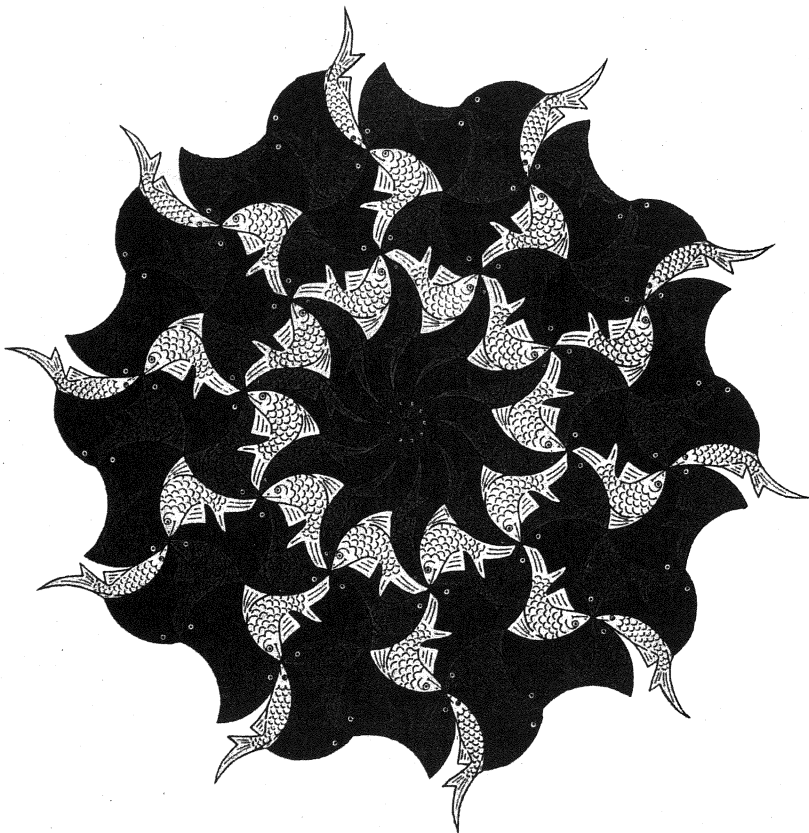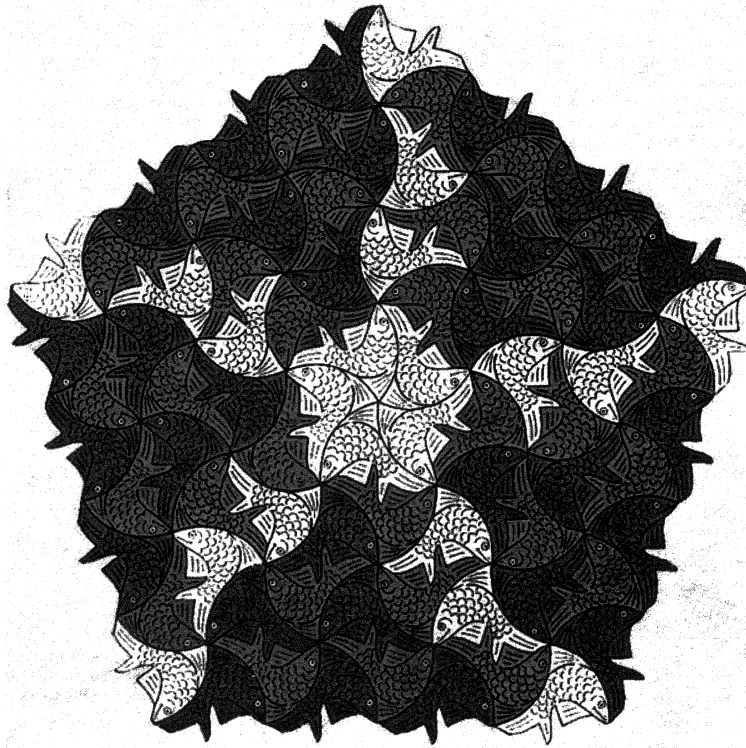
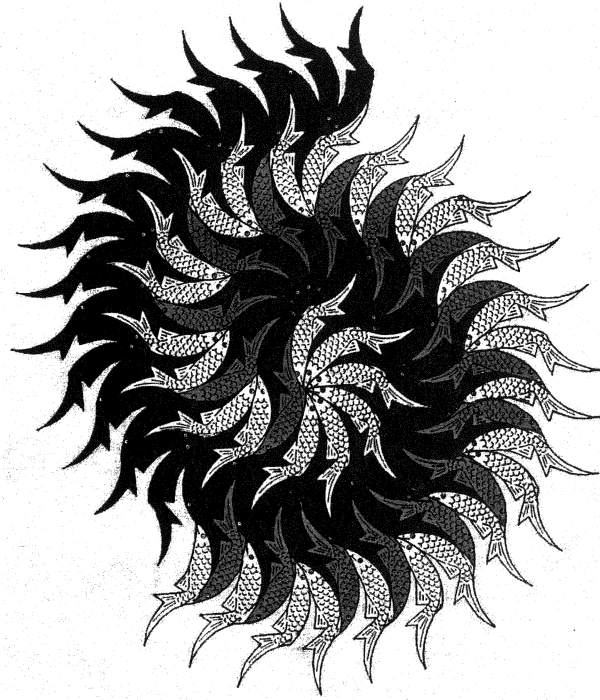Pic.3. 1—fold quasicrystal fishes
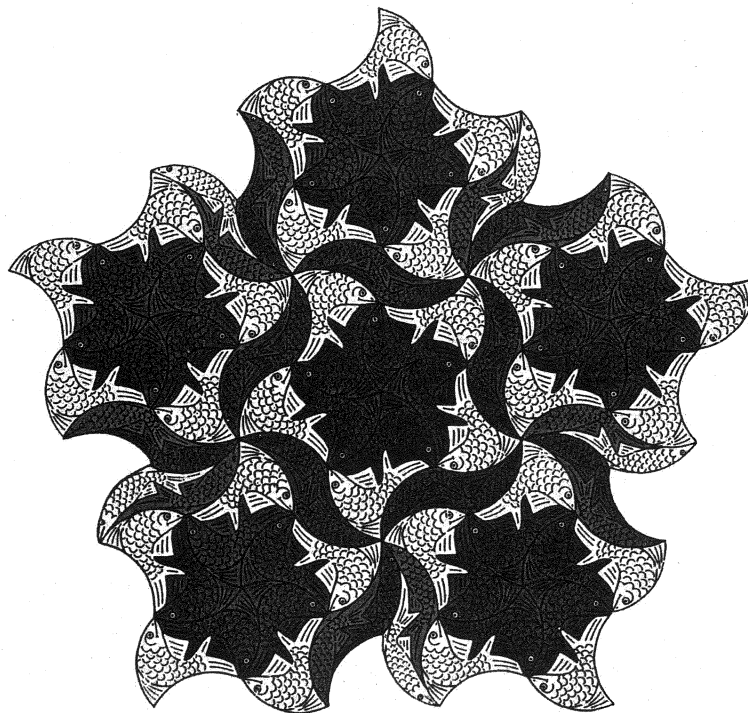
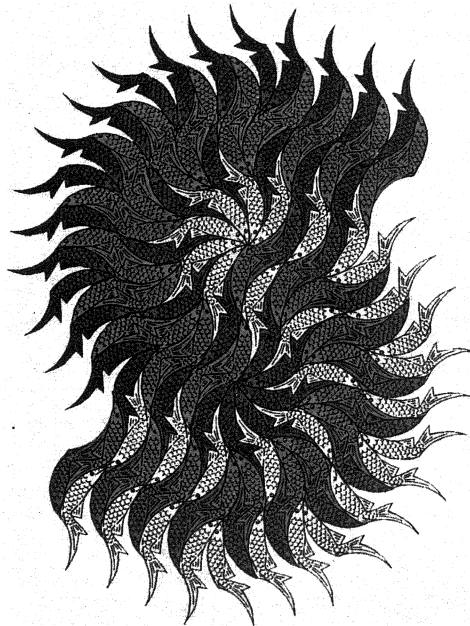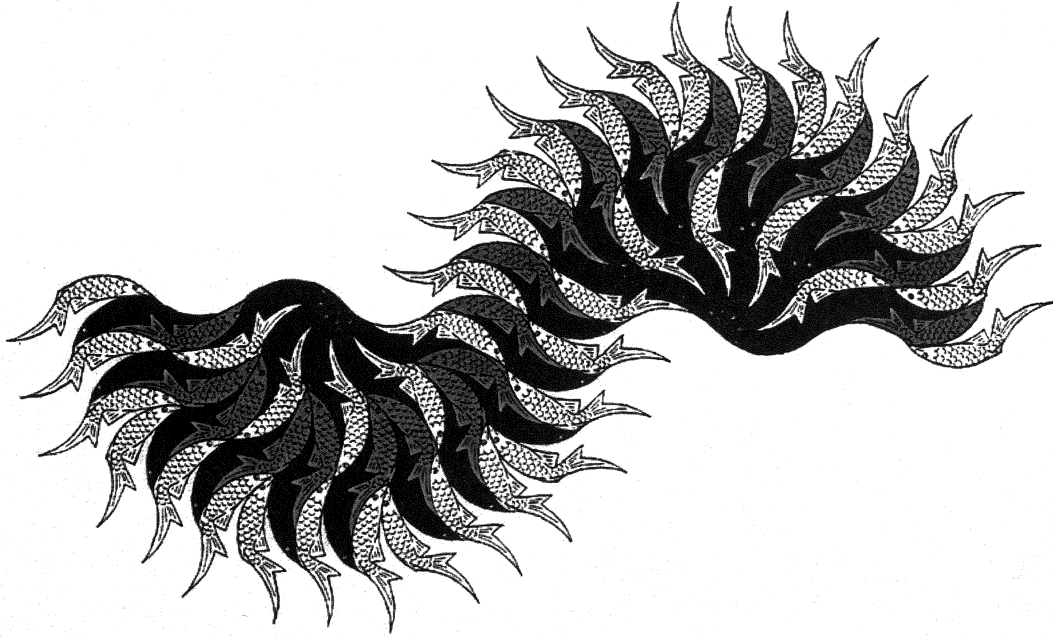
pic.4. 5-fold quasiperiodical fishes
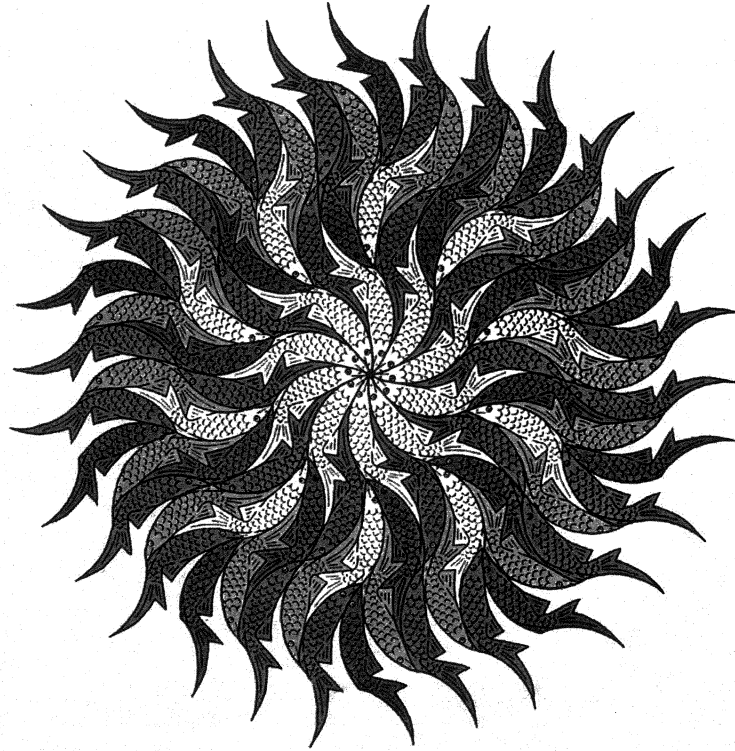
Pic.5. 10-fold radial symmetry
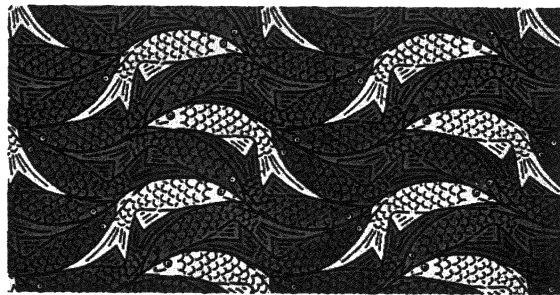

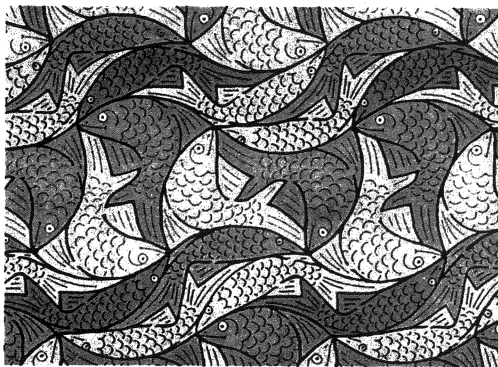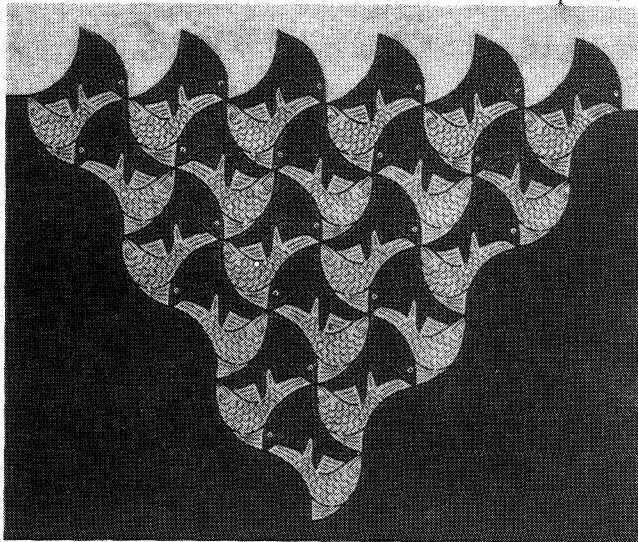Pic.6. 5-fold radial symmetry

Pic.7. Spiral 1

Pic.8. Spiral 2

Pic.9. Spiral 3

Pic.10-13. Some of 2D periodical fishes