A Tiling Trompe l'Oeil

Here is a periodic tiling by two quadrilaterals and a triangle. Is it the refinement of a tiling by regular polygons (hexagons, squares, or equilateral triangles)?

Judging by the high contrast area near the center, it seems impossible to decompose this figure into regular polygons. But the pastel region on the right reveals a tiling of equilateral triangles. And on the left, a tiling of squares! Apparently neither, yet in fact both.

Martin Gardner was big on both tilings and illusions, so this would have been great grist for his column.

--Bill Gosper