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FOLLOWING THE RIVER TO THE SEVEN SEAS OF GEOMETRY

Bartolommeo Fazio, a mid-fifteenth century humanist scholar from Genoa, was one of the first to admire and write about northern painters: Jan of Gaul has been judged the leading painter of our time. He was not unlettered, particularly in geometry and such arts as contribute to the enrichment of painting (...) His is a circular representation of the world, which he painted for Philip, Prince of the Belgians, and it is thought that no work has been done more perfectly in our time; you may distinguish in it not only places and the lie of continents but also, by measurement, the distances between places..." - Hugh Honour & John Fleming, A World History of Art.

Unfortunately, the work mentioned by Fazio is no longer to be seen. However, Jan of Gaul, known to us as Jan van Eyck, painted other pictures as well, and several of them last to this day. One such painting, maybe equally uncommon as the one described by Fazio, is displayed in the National Gallery in London. It depicts a couple holding hands, an unusual chandelier hanging above them, and a convex mirror on the wall.

The painting is commonly called „The Arnolfini Portrait”. An inscription indicates that it was created in 1434. According to the most popular interpretation, it presents a scene of wedding vows, witnessed by the painter himself. Incessant attempts, however, are being made to controvert this interpretation, because some details are disturbing to researchers.

Identity of the main characters is not completely certain, as is the symbolic meaning of the painting, since only sovereigns were being painted in this manner. The characters have been shown in full figure, in a presentable interior evidencing wealth. Yet this is not the only extraordinary feature of this painting. A superficial analysis of the composition, including symmetry and ratios, after five centuries has opened the lid to geometric mysteries going way beyond our notion of medieval painting.

Van Eyck is using perspective, symmetry, and divine ratio (fig.1) to direct the viewer's attention. The spouses are holding hands but are slightly apart, as if they were surrounding the space between them. They could be looking at each other but their gaze, as it seems, is not resting directly on the partner. Therefore, what are they looking at?



Fig. 1 Van Eyck is using perspective, symmetry, and divine ratio to direct the viewer's attention.

If we resist for a moment the realistic illusion created by the painter, and begin to analyse the composition framework, we shall notice several significant elements between the figures in the picture. Removing the colourful „skin” of the picture, we shall reveal an unusual geometric order. For example, the mirror has been designed almost like a rose window of a medieval cathedral. (fig. 2)

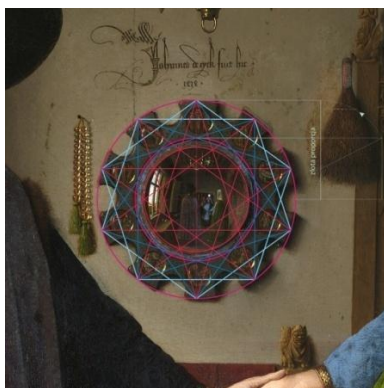


Fig. 2 The mirror has been designed almost like a rose window of a medieval cathedral.

This may give us some insight into the creator's intents.

Finally, "The Arnolfini Portrait" is abound with numbers from the Fibonacci sequence, and with relationships between geometric threads. Details such as the mirror, prayer-beads, and brush

in the central part of the picture have been painted so that they constitute a „geometric environment” (fig. 3). A nail is the point from which the two ends of the prayer-beads are extending, as the radii of two circles. Another nail, on which the brush is hanging, is the second point on which we can base a straight line, drawn between the two nails. This uncomplicated situation makes it possible to draw a heptagon – a figure which is difficult to construct – in a surprisingly precise manner. It also turns out that the heptagon is closely connected with the geometry of the ten-branched mirror and the pentagons contained in it.



Fig. 3 Details such as the mirror, prayer-beads, and brush in the central part of the picture have been painted so that they constitute a „geometric environment”.

It seems that the heptagon is the vertex of all geometric events here. Still, the method of „discovering” it is even more important than the figure itself. We cannot find in the painting a heptagon as such. What we find are the elements which, when used, lead to its construction. There is a heptagon but it is not made of sides, of contour, of the Platonic „shadow of perfect reality” – instead, its essence and its source are grasped. In order to see it forming, one would need knowledge, movement, and tools. This, according to medieval beliefs, conveys the essence of God, divine action, and His will.