CHAPTER 19: Renaissance Art

Nature has some perfections to show that she is the image of God, and some defects to show that she is only His image.\(^{99}\)

Throughout most of the Medieval period, artists were really artisans. Their work was of a practical nature, with little concern for beauty. Their work was designed for everyday usefulness, and whatever was "artistic" about it appealed primarily to the common masses of people.

As Europe entered the Renaissance, artists attempted to separate from this earlier tradition. Artists began to focus on making works of aesthetic appeal. They tried to make their audience the intellectuals of the day rather than the common masses.

It is important to remember that the artists of the Renaissance were not only painters and sculptors, but also engineers and architects, scientists and mathematicians. Being engineers and architects was a continuation of the Medieval role, but with a demand for increased sophistication. Being scientists and mathematicians, however, was a new experience.

The Renaissance involved a rebirth in the importance of the study of nature. While still seeking knowledge about God, the people of the Renaissance no longer restricted themselves to the authoritative pronouncements of Scripture and the Church. God had made the world, and therefore much could be learned about Him by studying it. Science, the study of the world of nature, was really a branch of theology. We today narrowly define this knowledge about God derived from nature to be "natural theology", but to the men of the Renaissance, all knowledge derived from "The Book of Nature" was knowledge about its Creator.

Because of the importance of nature, visual art became more realistic. Painting and drawing attempted to create on a flat surface the illusion of 3-dimensional space. This attempt focused on two areas. First, more attention was paid to mathematical forms and shapes. For instance, how a cube would appear from different positions was studied. Drawing a cube so that the observer felt as if he was directly in front of the cube would be different from drawing it as if the observer were off to the side. Today, how to do this may seem commonplace. But in the early Renaissance, careful observation and reflection were just beginning to enable artists to accomplish this.

Second was the issue of perspective.

Until about 1300, artists used conceptual perspective. This style was more symbolic than realistic. For instance, the height of a person in a picture might be a reflection of the person's place in society, not the person's actual height. In addition, there was little attempt to give a three-dimensional "feel" to the picture.

From about 1300 to 1425, a transition was occurring. Artists were experimenting with vertical perspective. In an attempt to give the picture a feeling of depth (the third dimension), lines which were perpendicular to the plane of the drawing (and hence parallel to each other) were drawn to intersect on a vertical line in the middle of the picture. Different sets of such lines would meet at different places on the vertical line. For instance, in the following diagram, the lines from the top and bottom of the window, from the floor, and the edges of the table intersect the vertical line at different places.

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\(^{99}\)Pascal, Pensees, p. 193.
Finally, in the century from about 1425 to 1525, artists developed and perfected **focused perspective**. In this case, lines which were perpendicular to the plane of the drawing (and hence parallel to each other) were drawn to intersect at a single point called the **principal vanishing point**, the point in the painting directly in front of the artist. This approach was highly mathematical. The "guidelines" for artists were appropriate theorems in geometry. Here are the basic ones:

1. Lines which are horizontal and parallel to the picture are drawn horizontally.
   Example: the front and back edge of the table

2. Lines which are vertical and parallel to the picture are drawn vertically.
   Example: the legs of the table, sides of the window

3. Lines which are horizontal and perpendicular to the picture are drawn so that if extended, they would go through the principal vanishing point.
   Example: the top and the bottom of the picture

4. Equal lengths farther from the observer must be shortened proportionately.
   Example: the sides of the window

Leonardo da Vinci is probably the best-known artist of this period. Perhaps his most famous paintings are "The Last Supper" and the "Mona Lisa". He was a real "Renaissance man", being also an architect, engineer, scientist, and mathematician. Two quotes will suffice to show how important mathematics was to his other pursuits. In his *Treatise on Painting*, he begins with the statement: “Let no one who is not a mathematician read my work.” ⁹⁰⁰ Reflecting on da Vinci's other pursuits, he wrote, “No human inquiry can be called true science unless it proceeds through mathematical demonstrations”⁹¹¹.

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⁹⁰⁰ cited in Morris Kline, *Mathematics for the Non-Mathematician*, p. 225