BRIEF SPACE NOTE

Euclid conceived the space of reality as geometrical. This space is constituted of infinite equidistant points related to each other in a manner of continuous connection.

Poincaré defined this space as follows:

First, what are strictly speaking the properties of space? I mean the space that is the object of geometry and which I call geometric space. Here are some of the more essential:
1. *It is continuous;*
2. *It is infinite;*
3. *It has three dimensions;*
4. *It is homogenous, that is to say that all the points are identical to one another.*
5. *It is isotropic, that is to say that all straight lines passing through a point are identical to one another. (1)*

The examples that follow are very simple and somehow redundant. The first one (Fig. 1) indicates the equality of measurement or the equality of distance between the points.

FIG. I

$$A_1. \quad A_2. \quad A_3. \quad A_4. \quad A_5. \quad A_6. \qquad\qquad A_2.$$

The second example (Fig. 2) refers to the equality of intervals between the points.

FIG. 2

$$.A \ .B \ .C \ .D \ .E \ .F \ .G .$$

$$A\text{-}B\text{-}C\text{-}D\text{-}E\text{-}F\text{-}G$$

The third example deals with the notion of the neighborhood of the points (The inmediate adjacent of A 1 is A 2 and between A1 and A3 only A2 exists) This property is called continuity. (2)

Space is homogeneous because all its elements are of the same nature and is isotropic because it maintains the same properties in any direction. It is infinite because it doesn't have boundaries and it is three-dimensional because it is a composite of three variables: length, width and height. These are the most essential properties of Euclidean space.
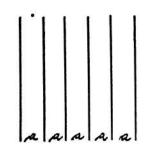
FIG. 3

$$A_1. \to A_2. \to A_3. \to A_4. \to A_5. \to A_6. \to A_7. \to A_8. \to A_9. \qquad A_n.$$

Figure 4 represents a group of elements organized in accordance with strictly Euclidean terms. This structure was familiar to artists since the XV century. Leonardo in *Il trattato della Pittura* advised the following:

If you wish to learn correct and good positions for your figures, make a frame that is divided into squares by threads and put it between your eye and the nude you are drawing, and you will trace the same squares lightly onto your paper on which you intend to draw your nude. Then place a small wax pellet on some spot on the net to serve as a marker which each time you look at the nude, you will place at the hollow of the throat (or, if he is seen from the back, over one of the vertebrae of the neck); and these threads will tell you for each position of the body, which parts of the body are precisely below the hollow of the throat . . .

It is obvious that the use of the grid for regulating the space of the rectangular canvas has been common to the artist for some time.

FIG.4