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Learning To Make Pencil Drawings And Sketches Using Linear And Aerial Perspective

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Abstract: In this article, the authors explain the use of aerial and linear perspective in pencil drawing, its definitions, and the development of drawings. The five basic rules of perspective in drawing are highlighted.

Keywords: Perspective, fine art, pencil drawing, geometric shapes, constructive, parallel, central projection, horizon line, shadow, light, penumbra, reflection, ray.

Introduction: Pencil drawing is the foundation of all forms of fine art. Since the 18th century, the term "pencil drawing" has been considered a definition of image creation using lines, which introduces important characteristics that determine the form, size, structure, and character of an object into all forms of art.

Just as when depicting simple geometric objects, vases, column capitals, etc., an artist must first and foremost understand the structural basis of the form and accurately reflect it in a linear drawing, so too, when depicting a human head, a student must analyze the structural basis of the head and be able to express it in a linear-constructive drawing. Even if the position of the light source is changed during a linear-constructive drawing, the structural basis of the form will not change (although the appearance of the subject will change significantly).

The fact that objects around us appear different from their actual appearance, and the study of the causes of this phenomenon, led to the development of the science of perspective. For example, the circular cross-sections of various jars and vessels generally appear as ellipses or straight lines, and parallel railroad tracks, as they recede from us, appear to converge at a single point. Trees of the same height, when located in the distance, appear smaller than their original size. The science of perspective fully explains the basis for such phenomena. The reasons why objects in nature appear somewhat different to us compared to their original appearance, and the reasons why spatial depth is revealed in realistic works by artists, have been studied for several centuries, and the foundations of perspective have been laid.

METHODS

Perspective is a French word meaning "la perspectivi" (looking into the distance) and the Greek "perspiktor" (seeing correctly and clearly through a mirror). If central projection is adapted to the requirements of human vision, the resulting image will be clear and faithful. These differences are due to the relative positions of the projected objects and the distances between them. Therefore, an image created using central projection, taking human vision into account, is called perspective. Perspective is the grammar of visual art, since any realistic work of art is, or should be, created based on the laws of perspective. Only in this way can its correctness and realism be guaranteed. If a work of art is created without observing these rules, scientists will say, "This painting lacks perspective," while ordinary observers will say, "The objects in this painting don't look like themselves." The science of perspective serves as a scientific resource for creating realistic paintings and helps us depict things as we see them with our own eyes.

Linear perspective. The image of an object is created on vertical, and sometimes inclined, planes relative to the horizontal.

Aerial perspective. The image of an object is drawn in colors dependent on the intensity of its illumination. The depth and width of space are conveyed through color.

Pencil drawing utilizes linear and chromatic techniques. Linear drawing is typically light, simple, and generalized. Artistic images are created with lines, including tables, conventional drawings, and images on a blackboard. Colored images provide a full characterization of the volume, light, texture, and spatial relationships of an object in its surroundings. Such images are called chiaroscuro and chromatic. Some objects are characterized by their shadows and

appearance. Therefore, when depicting such images, a simple form of chromatic image is sometimes chosen—a silhouette, that is, an image covered in a single flat color and drawn with a contour line.

To understand perspective, it's important to grasp its basic concepts: the horizon line, intersection points, picture plane, and viewpoint. The horizon line is an imaginary plane located at the artist's eye level. The picture plane is the plane between the artist and the object being depicted. The viewpoint is the location from which horizontal objects are observed. The field of view is the portion of the horizontal line extending to the viewer's field of view. Viewpoints: Perspective images are constructed using lines that converge at the horizon line. The points where they intersect are called viewpoints.

RESULTS AND DISCUSSION

When painting a picture, you need to know the following five basic rules of perspective:

1. Objects appear smaller as they move away from the viewer.
2. Horizontal lines parallel to the picture plane are always drawn horizontally.
3. Vertical lines parallel to the picture plane are always drawn vertically.
4. Straight lines that are not parallel to the picture plane, but parallel to each other, intersect at a point on the horizon line.
5. If we gradually raise a circle above the horizon line, it will appear as an ellipse. When its upper circumference reaches eye level, the ellipse will appear as a straight line. The size and width of a circle do not change in perspective.

Drawing stages:

Stage 1. Depending on the structure of the drawing, determine whether the sheet of paper is vertical or horizontal.

Stage 2. Study the external forms of the object, and use additional lines to analyze its geometric shape and practical uses. Determine the ratio of the object's height to its width.

Stage 3. Consider the object's overall shape, proportions, and dimensions to determine its placement on the paper (composition).

Stage 4. Depict the object's basic proportions, dimensions, structural structure, and perspective foreshortening, observing the rules.

Stage 5. Determine the relative positions of the object's major and minor details. Erase the auxiliary lines used in the drawing, and compare the depicted work with the

object.

Stage 6. Shade the large highlights and shadows of the object in the image, and determine whether they are light or dark.

Stage 7. The shadow, highlight, penumbra, reflective, and ray aspects of the subject are defined. The character of the forms is outlined, and the work is completed, merging into a unified whole.

CONCLUSIONS

The conclusion is that the role of perspective must be fully mastered, since the human activity of creating a work of art, using the methods of each creative medium, contributes to the formation of the shape and size of objects essential to life, as well as their exquisite design. A realistic depiction of existence not only provides students with practical knowledge but also plays a significant role in shaping their overall worldview.

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