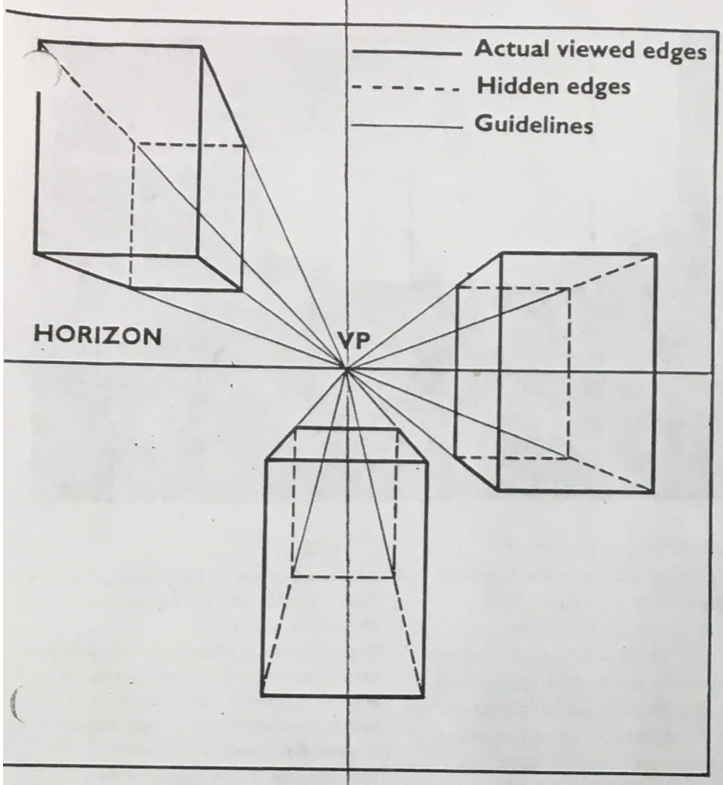


8 · 20
n one-point perspective the whole front or back plane of the subject is made to appear flat or llel to the picture plane.

jor systems of linear rspective

e are three major systems of linear pective: one-point, two-point, and -point. All are relative to the way the views the subject or scene.

pective is based on the assumption the artist maintains a fixed position n theory views the subject with one n reality, unless immobilized by a r cast and fitted with blinders, most rs will casually move either their r their head as their focus moves object to object within the image.

s may extend the viewer's ability derstand the subject, changing the point of view to some extent works against the concepts of linear perspective.

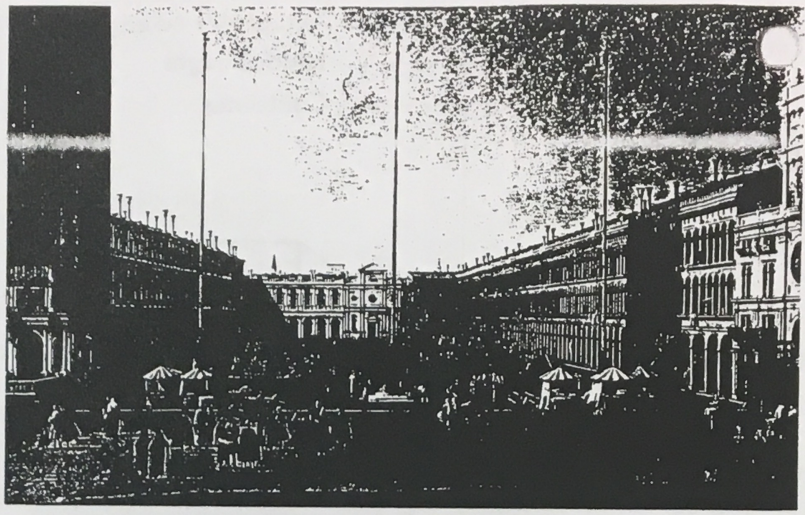
Assuming a minimum of movement, the artist can view his subjects in one of three ways: 1. By taking a position directly in front of the image, the whole front plane of the subject is made to appear flat or parallel to the picture plane (one-point); 2. By moving so that an edge – instead of the whole flat plane – is closest and centrally located, all planes will then appear to recede because the top and bottom edges converge to vanishing points on either side (two-point); 3. Assuming a position very much above or below the subject will make the sides as well as the top and bottom edges converge to distant points (three-point). In each of these examples the subject was thought of as stationary and the artist changed position. But the same concepts can be applied to still-life material, which can be altered or repositioned; a small box could be placed in each of the three locations relative to the artist's viewpoint.

One-point perspective One-point perspective is used when the artist views a flat surface or facing plane directly, or front-on. This flat plane will be drawn parallel to the picture plane and the horizon line. In this system, the artist first establishes the horizon line, which is on his or her eye level (fig. 8.20). It is placed low on the page if the artist is close to the ground, high on the page if the artist is on a ladder, or centered if the artist is standing. Next the vanishing point is located. It is usually centered on the horizon line. To make the composition less monotonous it is sometimes placed slightly to the right or left of center, so that the picture is not divided too symmetrically. In either case, the vanishing point represents a position directly in front of the viewer and at eye level.

After the vanishing point on the horizon line is established, the artist begins with the frontal plane of the geometric solid – that portion closest to the viewer. Guidelines drawn from the four corners of the front plane to the vanishing point will establish the theoretical position of the solid's side planes. They will appear to diminish in size as they recede in depth toward the horizon. In one-point perspective, all lines return to the same vanishing point except for those lines defining the original flat plane or any planes behind and parallel to it. Lines forming the front plane (horizontals or verticals) are at right angles to each other, remain constant, and are geometrically measurable. The lines forming these planes are parallel to the ground plane or perpendicular to it and

establish their spatial location. Notice that the three geometric solids are located fairly close to the vanishing point. In reality, when viewing such solids, one sees the sides as foreshortened. The further away from the (centrally located) vanishing point the solids are drawn, the more distorted their side planes seem to appear. These far right and left locations are no longer seen as frontal and would more correctly be seen as a two-point perspective view. However, artists often employ such distortions for compositional and/or conceptual advantage.

Any subject with a flat frontal view, like the end of a room, hallways, long frontal views of the interior and exterior of buildings, streets, and lines of trees, lend themselves well to one-point perspective pictures, as seen in Canaletto's *The Piazza of St. Mark, Venice* (fig. 8.21).



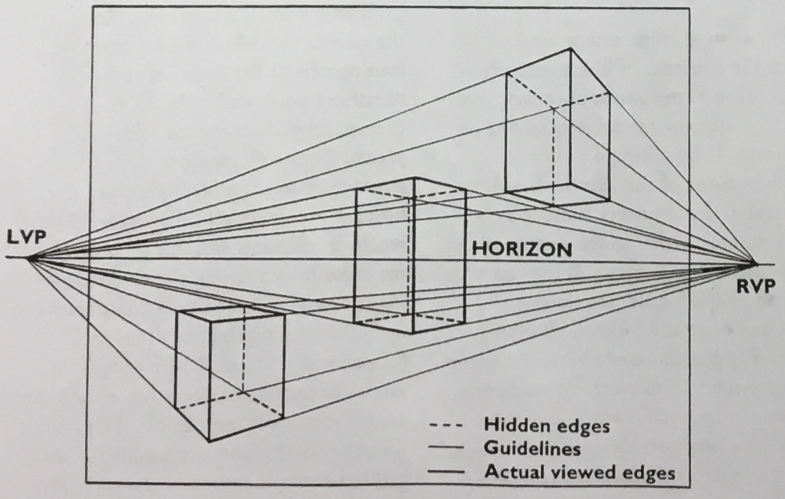
8 · 21

Antonio Canaletto, *The Piazza of St. Mar Venice*, c. 1735–45. Oil on canvas, 29⅞ × 46⅞ in (76 × 119 cm).

The appearance of planes and volumes in spac determined by the systematic procedures of linear perspective is well illustrated in th painting by an eighteenth-century Venetia art It is basically in one-point perspective.

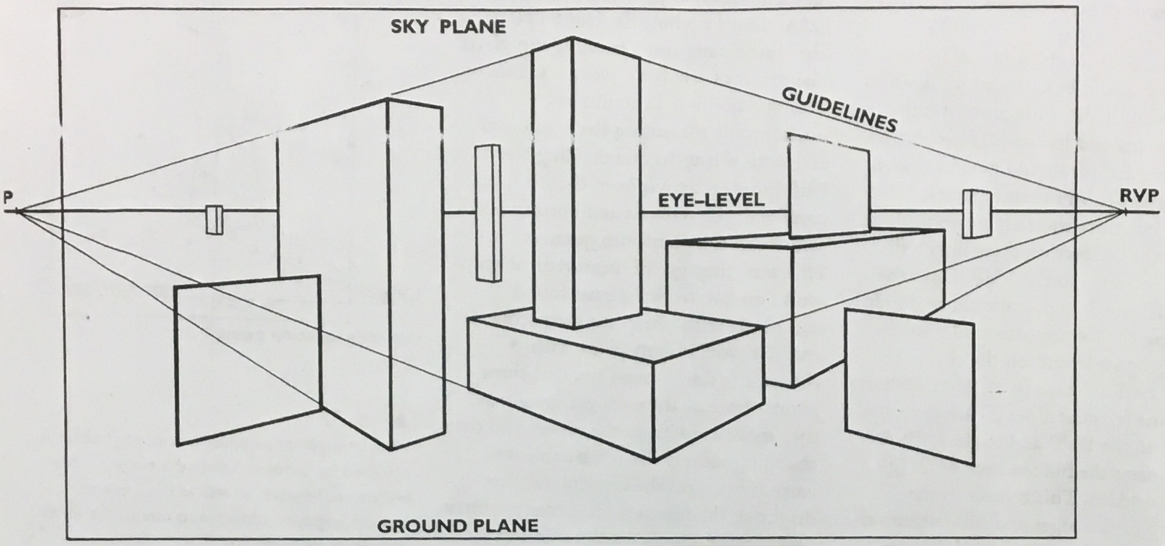
Detroit Institute of Arts, Detroit, MI. Founders' Society Purchase. General Membership Fund with a donation from Edsel B. Ford.

Two-point perspective Two-point perspective is most often employed when the artist views a leading edge instead of a flat plane (fig. 8.22). This will cause the geometric solid to appear to be at an angle to the lines of sight; or, in other words, to appear to be at angular positions in depth on the surface of the picture plane. The artist begins by establishing the horizon line, as in one-point perspective, its placement in the drawing being relative to the height of the artist's viewing position. Next, vanishing points are located on the horizon line at the extreme left and right ends. In reality the vanishing points are so distant that they cannot be located on the picture plane, but for the convenience of drawing they are often located along the edge of the drawing format. Now, the artist draws the closest portion of the box – the vertical edge – as a vertical line. From the top and bottom corners of this vertical, guidelines are extended back to



8 · 22

With two-point perspective, one vertica e closest and all top and bottom edges rec a converge at the left or right vanishing point.



8 • 23
drawing showing the essential difference tween planes and three-dimensional shapes. nes are shapes having only two dimensions eight and width), whereas three-dimensional apes, which are made up of planes, have the ect of solidity (height, width, and depth). The mponent planes (sides) of three-dimensional apes may be detached and inclined at any gle. The drawing is also an example of two- int perspective. Object edges are shown as avy lines, orthogonals (guidelines) as lighter es. Vanishing points (LVP and RVP) show here object edges converge at the eye level or rizon line, which represents infinity. The eye vel divides the picture space into planes which and for the ground and sky.

both sets of vanishing points, tentatively establishing the side, top, and/or bottom planes of the geometric solid. These planes will appear to diminish as they recede toward the vanishing points. With two-point perspective, all lines except those that are vertical will return to the vanishing points. The verticals indicate the height of the volumes, stay parallel, and are perpendicular to the ground plane. Only the verticals may be measured and never converge.

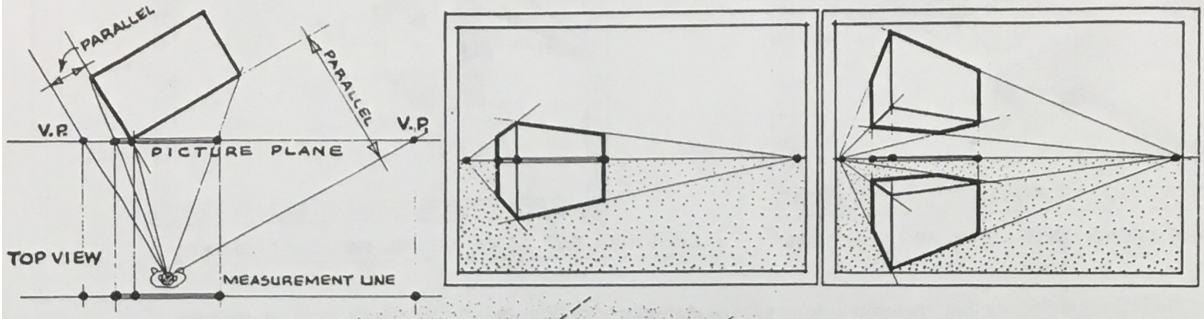
Notice in figure 8.23 that multiple solids and planes create a sense of deep space. In addition, the vanishing points are placed outside the picture plane. Placing the vanishing points as far apart as possible eliminates the distortion of image that occurs when they are too close together.

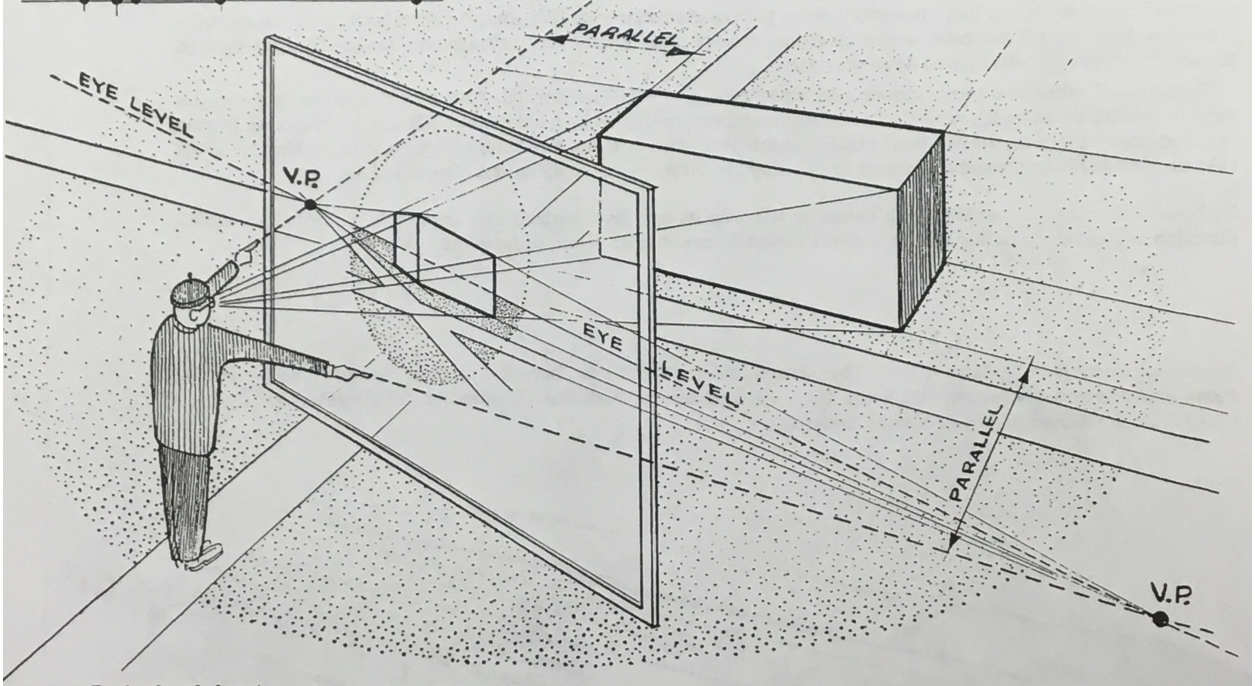
Two-point perspective is most often employed in graphic artworks when objects, usually set in architectural settings, appear to be at an angle to the lines of sight, or when the artist wishes them to appear at angular positions in depth on the picture plane, as can be seen in the Hopper painting (fig. 8.24; see fig. 8.6).

[30] Why The "Parallel Pointing" Method Of Locating Vanishing Points Is Important

In T-square and triangle perspective, this method of locating vanishing points is an essential step.

Thus, to draw the object below, we first construct a top view or plan (*left*), showing the object, the picture plane (seen as a line) and the observer's position. On this plan, "sight lines" pointing parallel to the object lines are drawn to locate the vanishing points on the picture plane. Other sight lines "project" the object itself onto the picture plane. The picture plane line, therefore, shows the relationship of the object's apparent size to the vanishing points. This "measurement line" is then transferred to the actual picture (*right*), where it is superimposed on the horizontal vanishing line (eye level). Whether the subject is now drawn above, below, or straddling this line, the relationships remain the same.





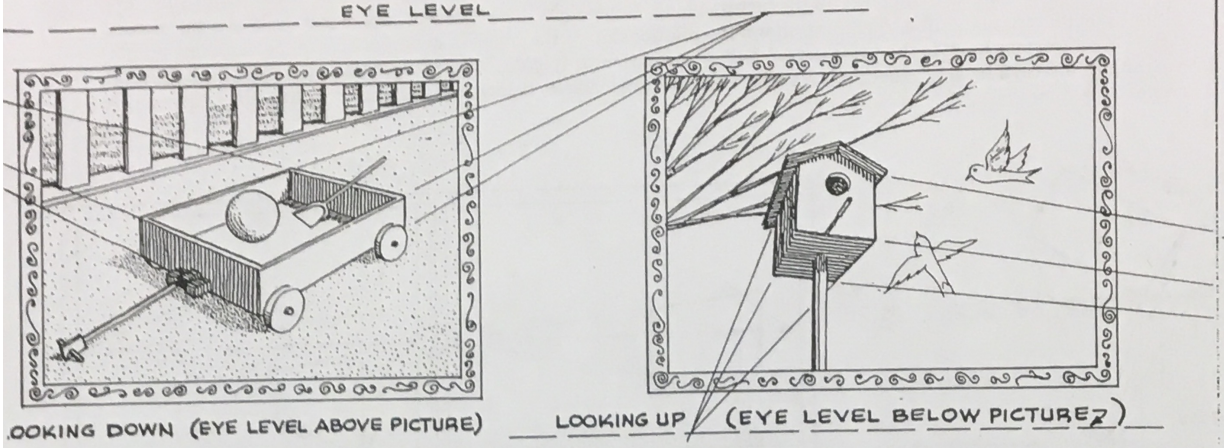
In freehand drawing, whether from life or from imagination, this procedure naturally is inapplicable. The convergence of lines, foreshortening, etc., must instead be determined by careful observation or visualization.

Yet in this book the figure of an observer pointing toward a picture plane parallel to object lines will be shown repeatedly, in order to emphasize the importance of the observer-to-subject relationship even for freehand drawing.

The observer's viewpoint and cone of vision, his distance from a subject, and the apparent direction of the subject's lines are the principal determinants of how things appear in real life and therefore in perspective drawing. As these factors change, so will the picture. This is the key to any "system" of perspective drawing. Becoming aware of it and understanding it will strengthen your powers of visualization and observation.

What Happens To Eye Level (Horizon Line) When You Look Straight Out, Down Or Up

In extreme cases the eye level (horizon line) is completely above or below the drawing. The sketches below indicate, respectively, that you are looking downwards and upwards at still steeper angles than before.



So while it may be obvious that when you look up you see more sky or ceiling, and when you look down you see more ground or floor, what is not quite so obvious is that the eye level-horizon line (always on a horizontal plane through the observer's eyes) shifts up and down *inversely*.

Therefore, if, when you start a drawing, you place the eye level (horizon line) high on the canvas or sheet, you *must* be looking down on the subject; if you place it midway, you *must* be looking out horizontally (the central visual ray is approximately on the eye level plane); and if you place it along the bottom you *must* be looking up at the subject. This holds true whether drawing or painting from life or from imagination. Try it and see.

So bear in mind: A drawing which shows or suggests its eye level-horizon line invariably indicates the artist's direction of sight and whether the subject was viewed from above or below, or head-on.

Below: An example of "looking down." The horizon line (eye level) is above the picture. *National Cowboy Hall of Fame and Memorial Museum*, Oklahoma City. (Second award, National Competition for Architectural Commission.) Joseph D'Amelio, Architect and Renderer