

7

SPACE

"Space, the final frontier." Every diehard *Trekkie* is familiar with the opening mantra of the hit TV and film series, *Star Trek*. But it just as well describes the "mission impossible" of millennia of artists seeking to recreate three-dimensional space on a two-dimensional surface. The space explored by the starship *Enterprise* was that beyond Earth's atmosphere—the space between celestial spheres and galaxies. Artists are less ambitious. They seek to explore ways to visually and psychologically extend the space of a finite rectangle—a canvas, let's say—into nothing less than a vast universe.

If pulling three dimensions out of a two-dimensional hat seems a trick, it is. Artists have had to develop a variety of tricks over the centuries in order to create the much-sought illusion of space on a two-dimensional surface. The history of the pursuit of this illusion is long and it has taken winding turns, but we hear about it in the art of ancient Greece, we see it in ancient Rome, and we follow its path to perfection in the Renaissance. The value placed on

achieving this goal is illustrated in an anecdote about the famed Greek painter, Apelles. In bringing before a panel of judges an example of his painting, Apelles was admonished by the judges for setting nothing on the easel for review. Of course he had. Apelles's work was so realistic, was so remarkable in its illusionism, that it went unseen in its surroundings. The painted image blended imperceptibly with that which surrounded it in actual space. As with any anecdote, the line between fact and fiction is often blurred. The account of Apelles duping his audience in order to flaunt his masterful skills may never have happened, but some eight centuries later, visual tricks reached a level of perfection that he probably never would have imagined.

From simple methods such as relative size and overlapping to complex systems of linear perspective, the goal of entire eras of artists was to transcend the space at their fingertips, to defy its limitations—to make the leap from reality to illusion.



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Key Terms

Artists on Art

Digital Resources

◀ **Andrea Pozzo. *Glorification of Saint Ignatius*** (1691–1694) Ceiling fresco in the nave of the Church of Saint Ignatius of Loyola, Rome, Italy.

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A 7.2 Sarah Quill. *View Towards the Rialto Bridge* Grand Canal, Venice, Italy. Photograph.



A 7.3 Giovanni Antonio Canaletto. *The Rialto Bridge* (c. 1735) Oil on canvas (46 7/8" x 60 3/4").

CREATING THE ILLUSION OF SPACE

Actual space refers to the three dimensions in which we live and move—height, width, and depth (Fig. 7.2). The illusion of space is the suggestion of three dimensions on a two-dimensional surface (Fig. 7.3).

Another way of saying this is that the illusion of depth is the suggestion of distance in a picture. The illusionistic space of a two-dimensional composition is sometimes called its implied space or pictorial space; it is created by the artist using any number of devices or techniques to approximate the way things would be seen by the human eye in actual space.

Filippo Brunelleschi, an architect and sculptor working in Italy in the 1400s, was the first artist to systematize rules for creating such illusions by developing what is known as scientific perspective or linear perspective. Imagine the absolute amazement that gripped Renaissance viewers (and, indeed, tourists to the Vatican to this day) in the presence of such pictorial illusions that seemed to transport them into a physical world within a painting (Fig. 7.4). It was not just a painted surface; it was more than it appeared to

be. The picture frame became a “window” through which the viewer could peer into infinite space. The Renaissance set the bar for generations of painters and sculptors working with two dimensions for mastering the techniques to create these grand illusions, or surpassing them.

actual space / The three dimensions (height, width, and depth) in which we live.

illusion of space / The suggestion of three dimensions on a two-dimensional surface.

implied space / The space or depth suggested by an artist in a two-dimensional work.



A 7.4 View of Raphael's *The School of Athens* (2006) Stanza della Segnatura, Vatican, Rome. Photograph.

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A 7.5 Paul Gauguin. *The Large Tree* (1891) Oil on fabric (29" x 36 1/2").

As important a goal as this was for a good chunk of the history of art, the beginnings of modern art altered that trajectory. What was new about the illusion of depth we see in Renaissance art is that it represented a departure from a certain flatness that prevailed in works of art from the medieval period before it. Beginning in the late eighteenth century, though, aesthetic priorities changed. The focus shifted from the deep illusionistic space and three-dimensionality of figures and objects—prized for almost five centuries—toward a diminished pictorial space and, later, the flattening of figures, as in the Post-impressionist Paul Gauguin painting (Fig. 7.5). It was the pursuit of flatness and denial of illusion that marked the beginning of Modern Art. By the time

the mid-twentieth century came around, the famed art critic Clement Greenberg would not be alone in his view that “a canvas is just a canvas.”

Artists have devised numerous devices and pictorial strategies to create the illusion of depth, including *relative size* (based on the observation that nearby objects appear larger to the eye than do objects in the distance), *overlapping*, *transparency*, *vertical positioning*, *atmospheric perspective*, *linear perspective*, and other more complicated versions of perspective.

Relative Size

Imagine a driver on the freeway looking through the rearview mirror. If the grill and headlights of a semitrailer truck—an eighteen-wheeler—fill the space of

the mirror completely, the driver may be unnerved to say the least. If the truck occupies but a small portion of the mirror reflection, the driver probably wouldn’t even react. Same truck, of course, but the closer it gets, the larger it looks. When significant space separates the two vehicles, that big rig looks a lot smaller and a lot less menacing. One of the ways, then, that artists suggest space is to vary the size of the objects within it. Things that are supposed to be closer to the viewer are portrayed larger than things that are to be perceived as farther away.

pictorial space / The illusionary space that by seeming to recede from the picture plane into the distance provides a sense of depth in a two-dimensional composition.

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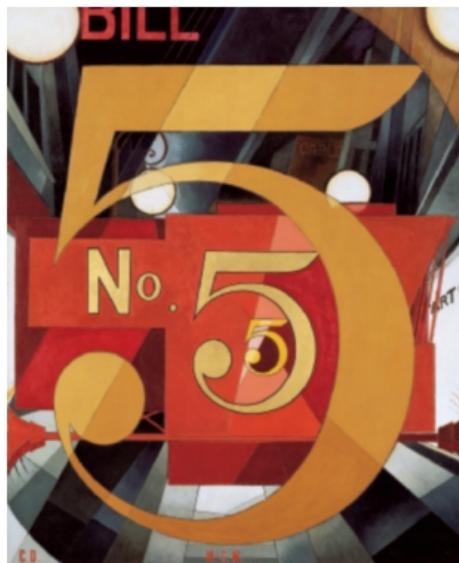


A 7.6 Martina López. *Heirs Come to Pass, 3* (1991) Silver dye bleach print made from digitally assisted montage (30" x 50").
© 1998 Martina López.

Relative size accounts for spatial complexity in Martina López's *Heirs Come to Pass, 3* (Fig. 7.6). A broad, muddy-looking landscape fills most of the space of the digitally manipulated photographic print, leaving just a narrow strip at the top for a cloud-soaked sky. Figures cut out from old, black-and-white and sepia-toned photographs are digitally "patched into" the landscape. They range in size from large and looming to tiny and barely visible; it is precisely their placement and size in relation to one another that creates an illusion of depth. For López, this is a "visual terrain" that is open to receiving not only her own memories (here represented by photographs of her own family members), but one that has ample space to accommodate those of the viewer as well.

Size variation in Charles Demuth's painting *I Saw the Figure 5 in Gold* (Fig. 7.7) accounts for the feeling that the number five—repeated three times—recedes from the viewer and into space. Demuth's imagery was

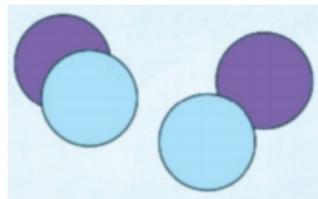
> 7.7 Charles Demuth.
I Saw the Figure 5 in Gold (1928) Oil on
cardboard (35 1/2" x 30").



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TRY THIS

Take a piece of watercolor paper and apply a uniform wash of any hue. Next, find a picture of a figure or object and print it in different sizes. Using López and Demuth as references, arrange the duplicated images in a way that creates an illusion of depth on your two-dimensional paper surface. Challenge yourself, first, to create a sensation of depth using just two images. Then add another and another; considering the spaces between images as well as their relative scale. Now, in honor of Georges Braque who said, "Perspective is a ghastly mistake that has taken four centuries to redress," repeat the entire exercise trying to affix the same images to the surface in a way that does not create an illusion of depth.



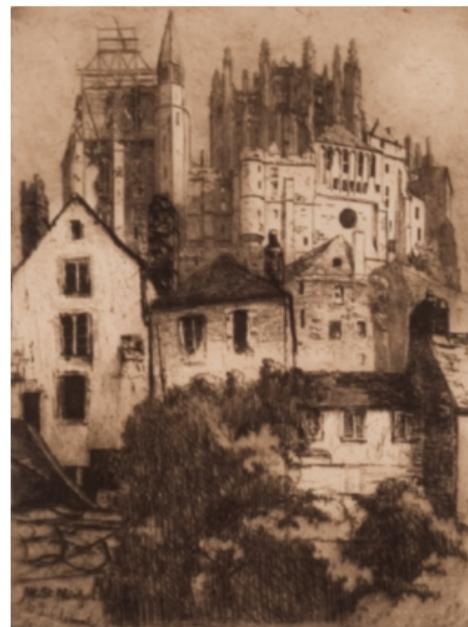
A 7.8. Overlapping. Also called interposition, overlapping helps create the illusion of three dimensions in two-dimensional media. Objects that overlap others are perceived as being closer to the picture plane and the viewer.

inspired by a poem with the same title written by his friend William Carlos Williams. Size variation in this composition evokes the path of a red fire truck emblazoned with the figure "5" in gold as it moved away from the poet and into the distant, dark night of the city.

Overlapping

Size variation is not the only device in Demuth's painting that creates an illusion of depth. The overlapping of shapes also plays a role (Fig. 7.8). Relative size and overlapping often work hand-in-hand to suggest space. If you look out the window of a high-rise building onto the rooftops of a cityscape, you will see that the buildings closer to you obscure parts of the buildings that are farther away from you. To suggest space, artists incorporate such real-world observations. Overlapping is an especially useful device if there is not much actual

➤ **7.9** Gabrielle de Vaux Clements, *Church and Castle, Mont Saint Michel* (1885) Etching on paper (8 1/2" × 6 3/8"). Courtesy of the National Museum of Women in the Arts, Washington, DC. Gift of Wallace and Wilhelmina Holladay.



space between the objects or figures being portrayed. In her nineteenth-century etching of *Mont Saint Michel* (Fig. 7.9), Gabrielle de Vaux Clements used overlapping to convey the feeling of cramped space in an old medieval

town. Similarly (although in a work that could not be more different), the overlapping of cars and people in a weed-infested parking lot in Tom Birkner's *Tailgating* (Fig. 7.10) emphasizes the congestion of the crowd.



➤ **7.10** Tom Birkner. *Tailgating* (2005) Oil on canvas (32" × 64"). © Tom Birkner. Courtesy of the artist.

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A 7.11 Jean-Baptiste Simeon Chardin. *Still Life with Bottle of Olives* (1760) Oil on canvas (28" x 38 1/2").



A 7.12 Pablo Picasso. *Still Life* (1918) Oil on canvas (38 1/4" x 51 1/4").
© 2014 Estate of Pablo Picasso/Artists Rights Society (ARS), New York.

Overlapping is used frequently in still life compositions in which depth is usually limited and when the artist

wants to emphasize the relationships between and among the objects and spaces—as in a typical arrangement

by Jean-Baptiste Simeon Chardin, one of the most well-known historical figures working in this genre (Fig. 7.11). But overlapping does not, by definition, create a sense of space. In fact, it can have quite the opposite effect—that of flatness or spatial compression. In Pablo Picasso's *Still Life* (Fig. 7.12), the overlapping shapes reinforce the two-dimensionality of the canvas. The effect is not so much of one object in front or behind another on the table but of everything pasted on a flat surface.

Transparency

With overlapping, objects closer to the viewer typically obscure parts of those behind them. But if the objects or shapes farther in the background can be seen *through* those positioned in front of them, the effect is called transparency. Let's go back to the flatness of Picasso's still life and compare the opacity of the overlapping shapes with the transparent shapes in *Still Life: The Table* (Fig. 7.13) by fellow Cubist artist Georges Braque. The Braque painting is less flat in appearance, less overtly two-dimensional than the Picasso painting largely because of the transparency of some of the shapes. We see through objects and, in so doing, infer some degree of depth—or at least some spatial differentiation that was not apparent in Picasso's painting.

Transparency can create a kind of visual game, confusing or undermining the spatial relationships among objects or the relationship between the viewer and the imagery. What you "know" to be the densest of the materials turn out to be, in reality, the easiest to see through. Cubist artists reveled in these visual games, often juxtaposing the "actual" with the illusion to challenge the viewer's grasp of reality.

transparency / An effect created by depicting nearby objects as see-through (transparent) and therefore not blocking the viewer's perception of more distant objects.

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A 7.13 Georges Braque. *Still Life: The Table* (1928) Oil on canvas (32" x 51 1/2").
© 2014 Artists Rights Society (ARS), New York/ADAGP, Paris.

V 7.14 Tang Yin. *Scenes of Hermits' Long Days in the Quiet Mountains* (1500–1523)
Ink and color on silk (42 7/8" x 24 5/8").

Location

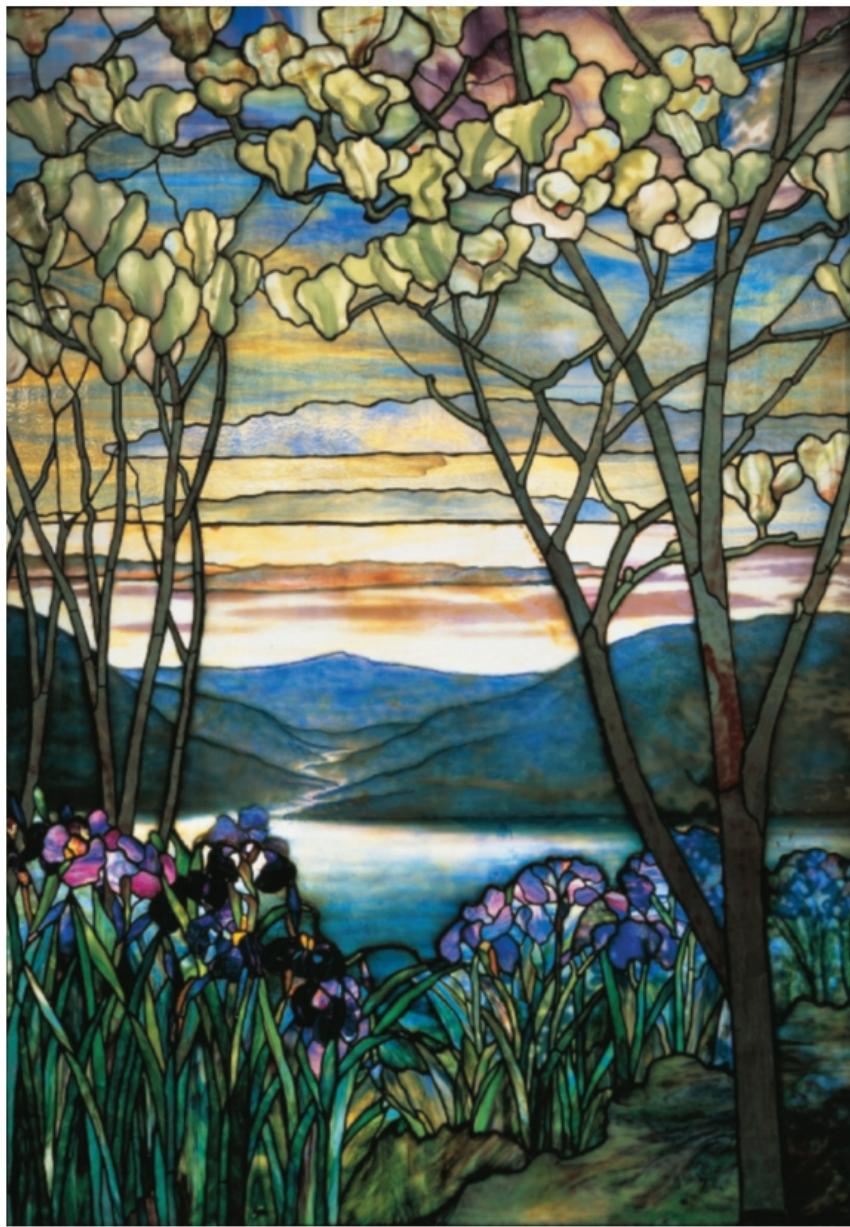
Artists use location—also known as **vertical positioning**—in their compositions as a strategy to signify depth. The use of the word *signify* is purposeful because location does not really create an illusion of space in the same way that other devices do. The artist relies on the viewer's tendency to read things at the top of the composition as farther away than things at the bottom, based on the way that reality is perceived.

Location, then, is a workable way to illustrate compositional space while deemphasizing other devices such as relative size, overlapping, and so forth. In a fifteenth-century Chinese hanging scroll by Tang Yin (Fig. 7.14), delicate ink drawings of natural elements throughout the work do not diminish in size toward an imagined horizon line and at first glance seem to be equally distant from the viewer. Space is inferred, however, from vertical placement. The mountains at the top of the scroll are assumed to be more distant than the trees in the middle.

vertical positioning / A method of creating the illusion of space by placing objects designated as being farther from the viewer toward the upper edge of the composition.



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A 7.15 Tiffany Studios. *Magnolia and Irises* (c. 1908) Leaded favrile glass (60 1/4" x 42").

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A 7.16 Pilar de Aristegui. *Moors and Christians, Alcoy* (1984) Oil on canvas (38 1/2" x 42 1/2").
© Pilar de Aristegui. Courtesy National Museum of Women in the Arts, Washington, DC, Gift of the artist.

In the Tiffany Studios' *Magnolia and Irises* (Fig. 7.15), relative size, overlapping, and location all play roles in signifying depth. The magnolia tree on the right appears to be closest to the viewer because it overlaps the irises, mountains, and, of course, the sky. Its large size reinforces its apparent closeness to the viewer. However, the irises on the left overlap the tree on the left, suggesting that they are closer to the viewer. Considering location, the irises, mountains, and sky occupy three distinct strata: The irises in the lower part of the composition appear closest to the viewer; as the viewer's gaze rises, the indigo mountains and brilliant yellow-orange sky in the upper part of the composition seems to be farthest away. The cool hues of the hills also recede from the eye, contributing to an impression of distance. Everything seems to bask in the glow of sundown. Devices for creating the illusion of depth are often used in concert with one another.

Vertical stacking—the overlap of images stacked one above the other in a

vertical configuration—also implies depth, as in Pilar de Aristegui's painting *Moors and Christians, Alcoy* (Fig. 7.16). The diagonal configurations of the groups stretch from the bottom of the composition toward the top, disappearing into the trees. The illusion of depth may not be convincing, but the suggestion of a parade of hundreds—if not thousands—certainly is.

TRY THIS

Pick a location outside in nature. Look through the viewfinder or at the LCD screen of a camera and pan the landscape until you isolate a portion of the scene that you want to shoot. Take the picture and look at it; the things that are closest to you will be at the bottom of the frame and the things that are most distant from you will be at the top. If you were to copy that photograph in a drawing or painting, the way you would signify space in the landscape is through location.

Atmospheric Perspective

Atmospheric perspective, also known as *aerial perspective*, is a technique for illustrating depth that incorporates such devices as texture gradient, brightness gradient, color saturation, and the interplay of warm and cool colors. It refers to the indistinct quality of distant objects, the character of which is affected by the atmosphere that stands between them and the viewer. On a hot summer's day, a heavy haze will seem to bleach the outlines of distant buildings. And during a winter storm, the crystalline snowflakes that dust objects nearest to us will seem to merge into a white vapor that all but obscures the far-off shapes.

To the human eye, atmospheric effects alter the lines and substance of objects in gradations as distance increases. Closer objects are perceived as having more detail or texture. They are also brighter and their colors purer. To create the illusion of depth, artists will vary the texture of objects (show less detail as the objects recede from the picture plane), and lessen their brightness and color saturation. The changes will be gradual, mimicking the gradation of change in objects viewed in actual depth. The terms **texture gradient** and **brightness gradient** refer to these gradations.

atmospheric perspective / The creation of the illusion of depth through techniques such as texture gradient, brightness gradient, color saturation, and the use of warm and cool colors; an indistinct or hazy effect produced by distance and the illusion of distance in visual art. Its name derives from recognition that the atmosphere between the viewer and the distant objects would cause the effect.

texture gradient / The visual perception of nearby objects as more textured than distant objects; a method in two-dimensional works whereby the artist creates the illusion of depth by making objects designated as nearby more detailed in texture.

brightness gradient / The visual perception of nearby objects as brighter than distant objects; a method in two-dimensional works whereby the artist creates the illusion of depth by making brighter the objects designated as nearby.

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A 7.17 View of the Incan Citadel at Machu Picchu, Urubamba Valley, Peru (1490–1530).

The photograph of the mountain fortress of Machu Picchu (Fig. 7.17) illustrates the role of actual atmospheric effects in the perception of depth. The imposing ruin was built in the Peruvian Andes by the Incas some 500 years ago. There is great detail in the terraced hill and fortress walls in the foreground but as the viewer gazes upward, distant mountains become blurs of color. The greens of the vegetation in the foreground are more intense than those of the slopes of the mountains in the middle ground. In the distant mountains, atmospheric effects transform the blanket of green to a palette of cobalt blues.

Scenes such as these have inspired artists such as Frederic Edwin Church to replicate such effects. In his painting *The Heart of the Andes* (Fig. 7.18), Church applies the same elements of atmospheric perspective to create the illusion of space. Also set in the Andes, it provides the viewer with a window on an infinitely receding vista. The foreground of the picture contains great botanical detail, as if the painting were meant as a scientific record of the species of the



A 7.18 Frederic Edwin Church. *The Heart of the Andes* (1859). Oil on canvas (66 1/8" x 119 1/4").