

THE PRINCIPLES OF LINEAR AND AERIAL PERSPECTIVE

Linear perspective is based on six principles. Each of these provides space and volume-revealing clues, some of which have already been touched on in earlier chapters.

1. relative scale. When forms known to be the same or a similar size differ in their scale, they indicate differences in their position in a spatial field. Thus, the decreasing scale of a row of trees or fence posts suggests near and far forms in space.

2. overlapping or blocking. When a form's position interrupts the contours of one or more other forms, partly hiding them, we perceive the overlapping form to be nearer than the overlapped one. Thus, seeing less than the entire form of an object suggests its position is farther back in the spatial field.

3. relative distance and position. When forms, not overlapping, and known to be the same or a similar distance apart show a decreasing distance between them, we perceive them to be receding in space. Thus, the decreasing distance between fence posts or railroad ties suggests forms in space. Except when such forms are seen high above our eye-level, the higher a form is in our field of vision, the farther back in space it appears.

4. convergence. When lines (or edges) known to be parallel appear to aim toward each other, or converge, they give the impression of going back in space. Thus corridors, houses, railroad tracks, or anything possessing parallel boundaries in any direction, appear to recede in space if these boundaries are seen as inclined toward each other.

5. cross-section or cage lines. When forms naturally possess or are, in a drawing, given a linear-textured surface, as in the use of structural hatchings, the relative distance and changes of direction between such lines suggest volume in space. Thus, objects as different as sea shells, driftwood, cornfields, or barber poles, by their textured surface-state, suggest forms in space.

6. light and shade. When a form's value-variations result from the play of light upon it and

not from local-tones, volume is suggested. Thus a cylinder whose values gradually darken as they approach its boundaries is more easily seen as a volume in space. When one form casts a shadow on another, its length, location, shape, and especially its scale and value suggest the distance separating the two forms, the shape of the form casting the shadow, and the planar surface-state of the form in the area receiving the shadow.

The common denominator in these six principles is the diminution of scale and, in light and shade, of the value contrasts of forms as they recede in space. If all or most of these principles are invoked, forms—when uninterrupted by other forms—will appear to diminish in scale and finally disappear.

Aerial perspective is based on three principles. These apply mainly to forms in deeper space, such as distant houses and hills, but are sometimes employed in drawings of forms in shallow space.

1. clarity. When forms appear less distinct in edge, detail, and general focus, we assume they are farther away than more incisively focused forms. Thus, a mountain seen at a distance appears vague and formless when compared to a nearby boulder.

2. value range. When the value contrasts between forms diminish, often becoming lighter, but always more closely related, we assume these forms to be in deep space.

3. relative texture. When forms diminish in textural clarity relative to other forms known to be the same or similar in physical characteristics, we perceive the less texturally active ones to be farther away. Thus, nearby grassy areas are seen as texturally active, those in the distance, far less so.

The common denominator in these three principles is that as distance increases, definition (clarity of focus, value contrasts, textural differences) decreases. Used together with linear perspective, if uninterrupted in space by other forms, aerial perspective will help cause forms to disappear.

These nine principles provide useful assists in the locating and structuring of masses