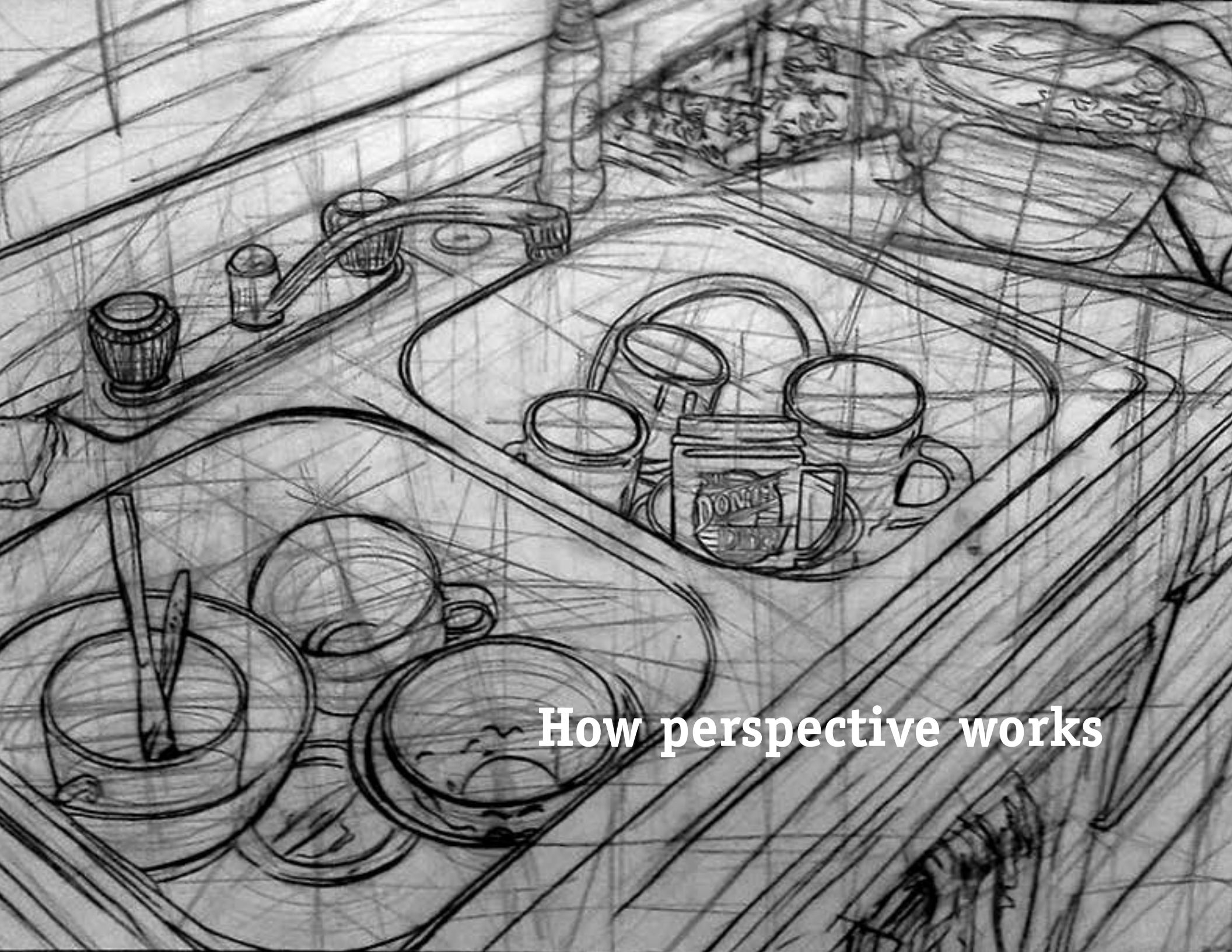


# How perspective works

# Perspective was unknown to medieval artists

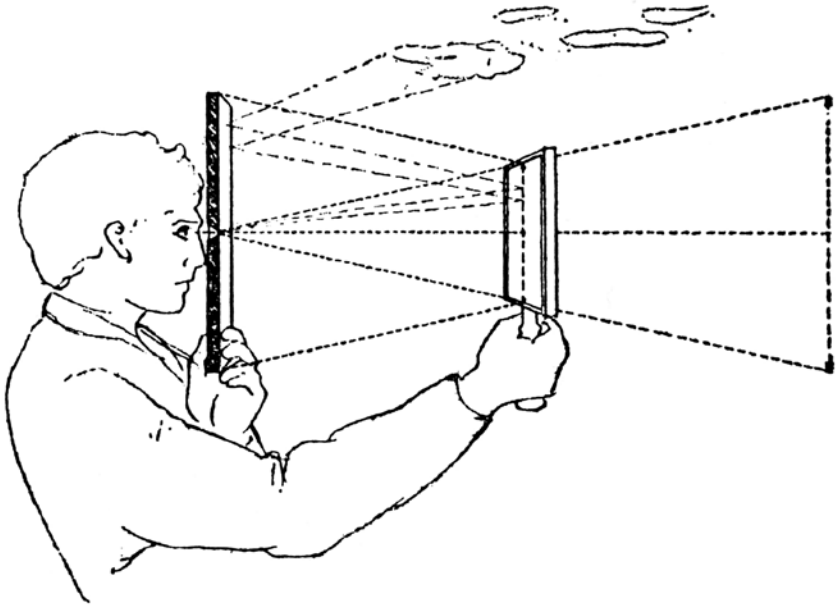

Perspective was unknown to medieval artists

# Brunelleschi ‘rediscovers’ perspective

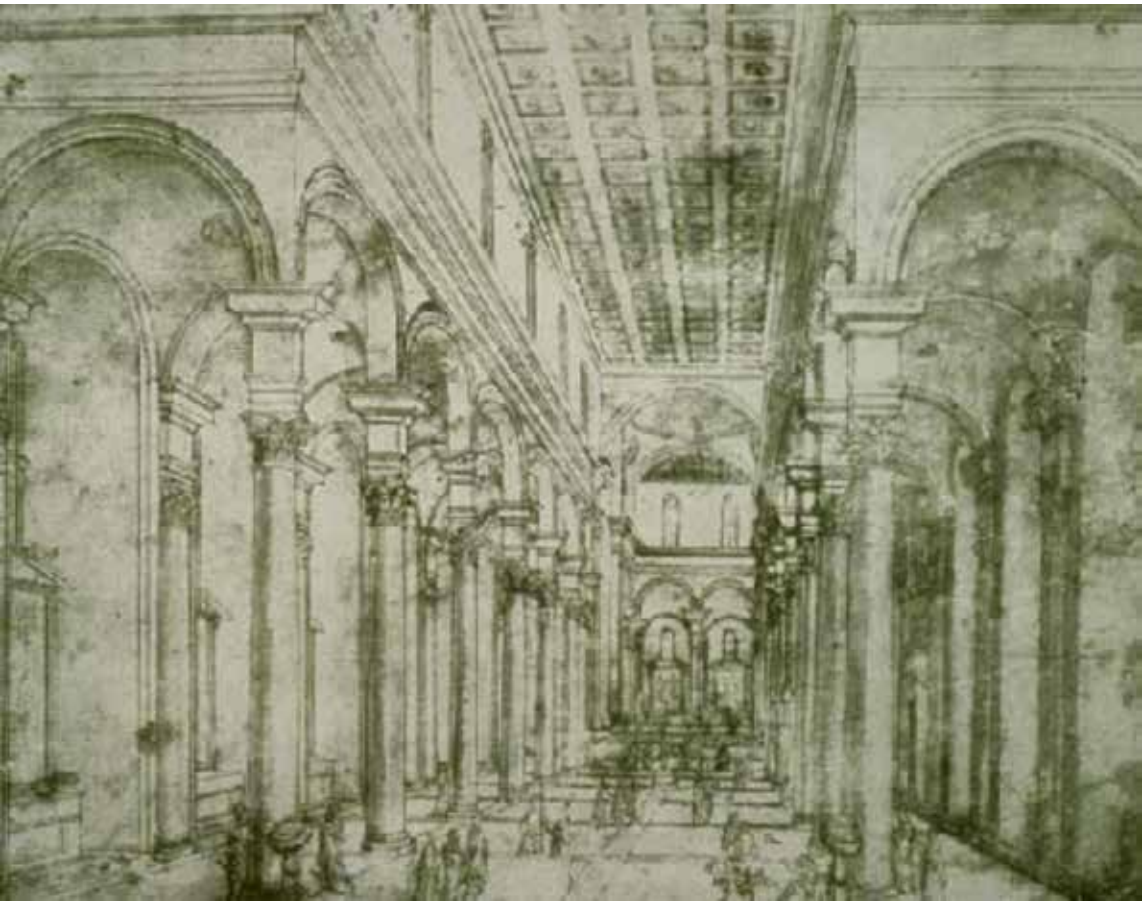
In the early 15th Century, Filippo Brunelleschi tested his method of drawing realistic perspective using a mirror and his painting of the baptistry of Florence.

The painting’s vanishing point was drilled out. The visitor looked through the vanishing point from behind the painting. A mirror held in front of the real Baptistry allowed the viewer to see the painting and parts of the baptistry behind it. Moving the mirror demonstrated the perspective’s fidelity through the sameness of the painting and the real building.

Because perspective might have been known by the Greeks and Romans, some say Brunelleschi “**rediscovered perspective**.”

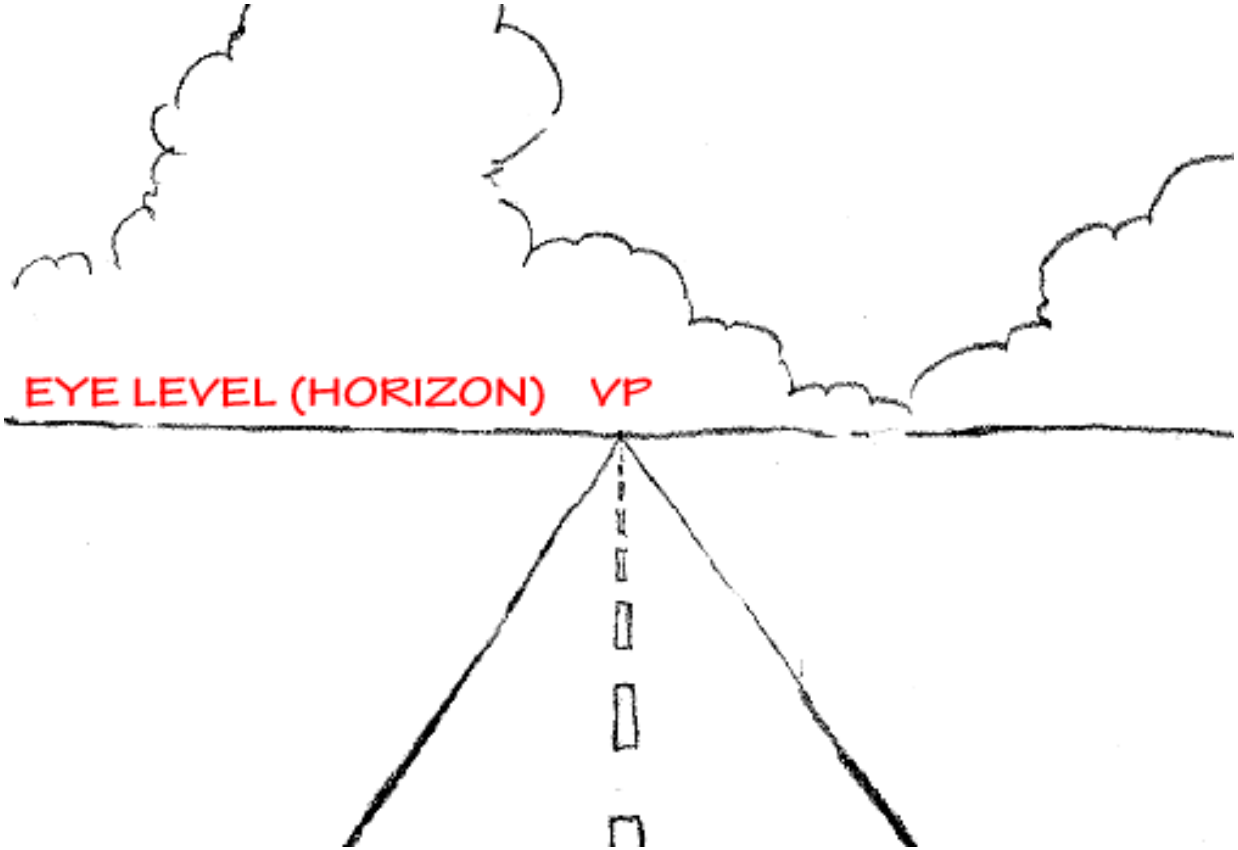


# Perspective in Brunelleschi's architecture



By creating accurate perspective drawings, Brunelleschi was able to show what a finished building would look like, such as the Basilica of Santa Maria del Santo Spirito in Florence.

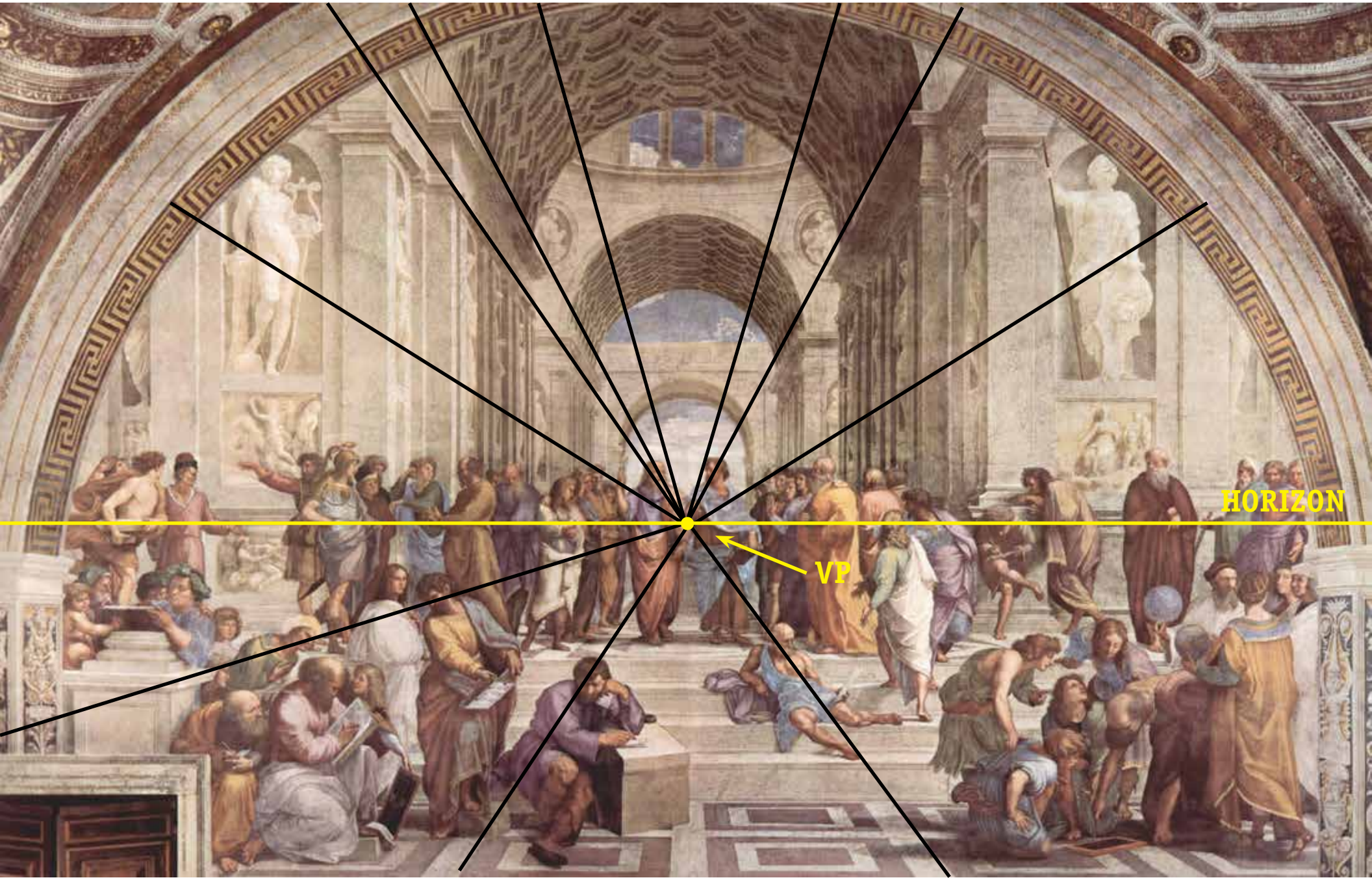
# Vanishing Point and Horizon




## The horizon is always at eye level.

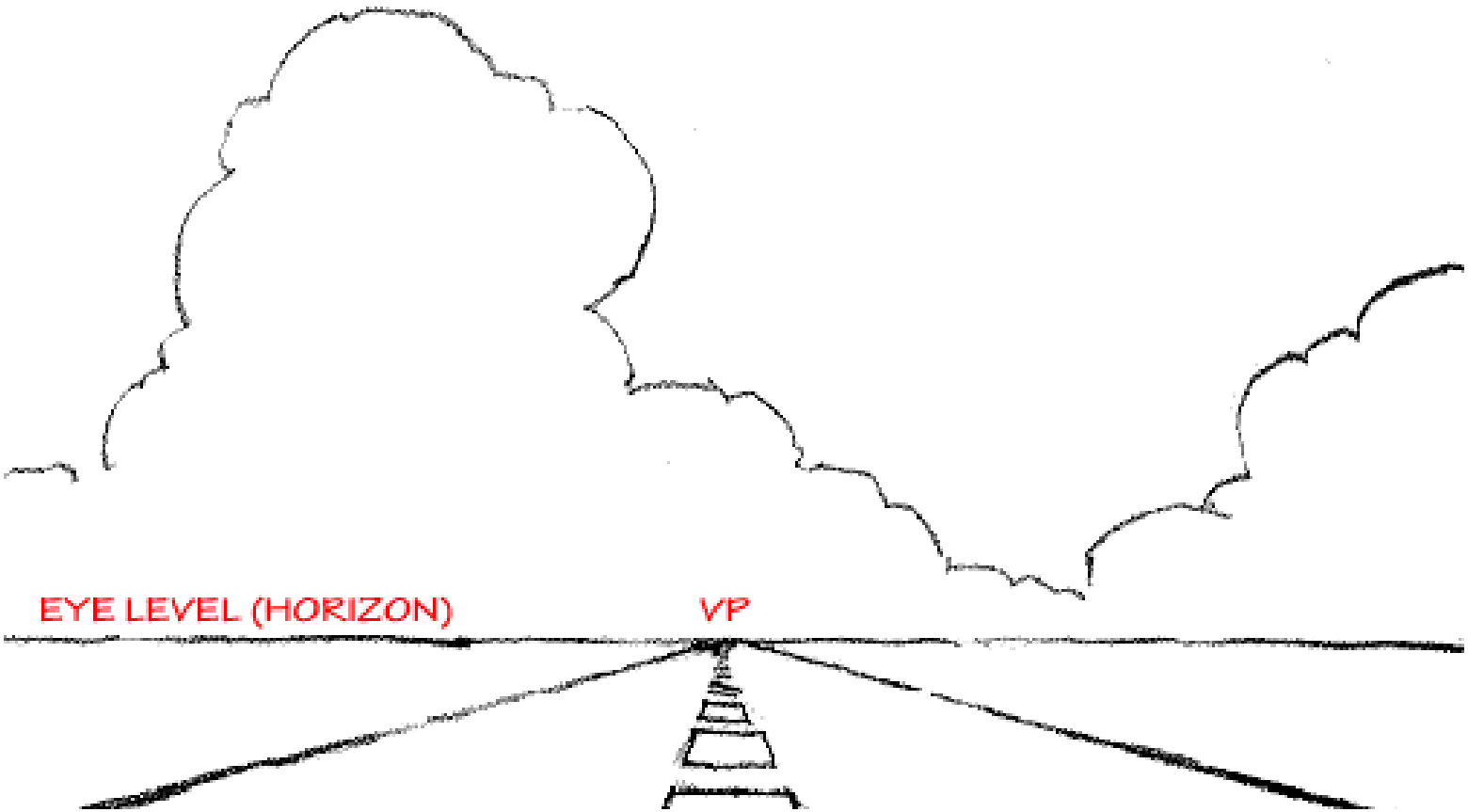
To create a perspective drawing, the artist first establishes a point of view, then a horizon. All lines of perspective end at the horizon.

Raffael, School of Athens, 1509–1510




Raffael, School of Athens, 1509–1510

# Vanishing Point and Horizon



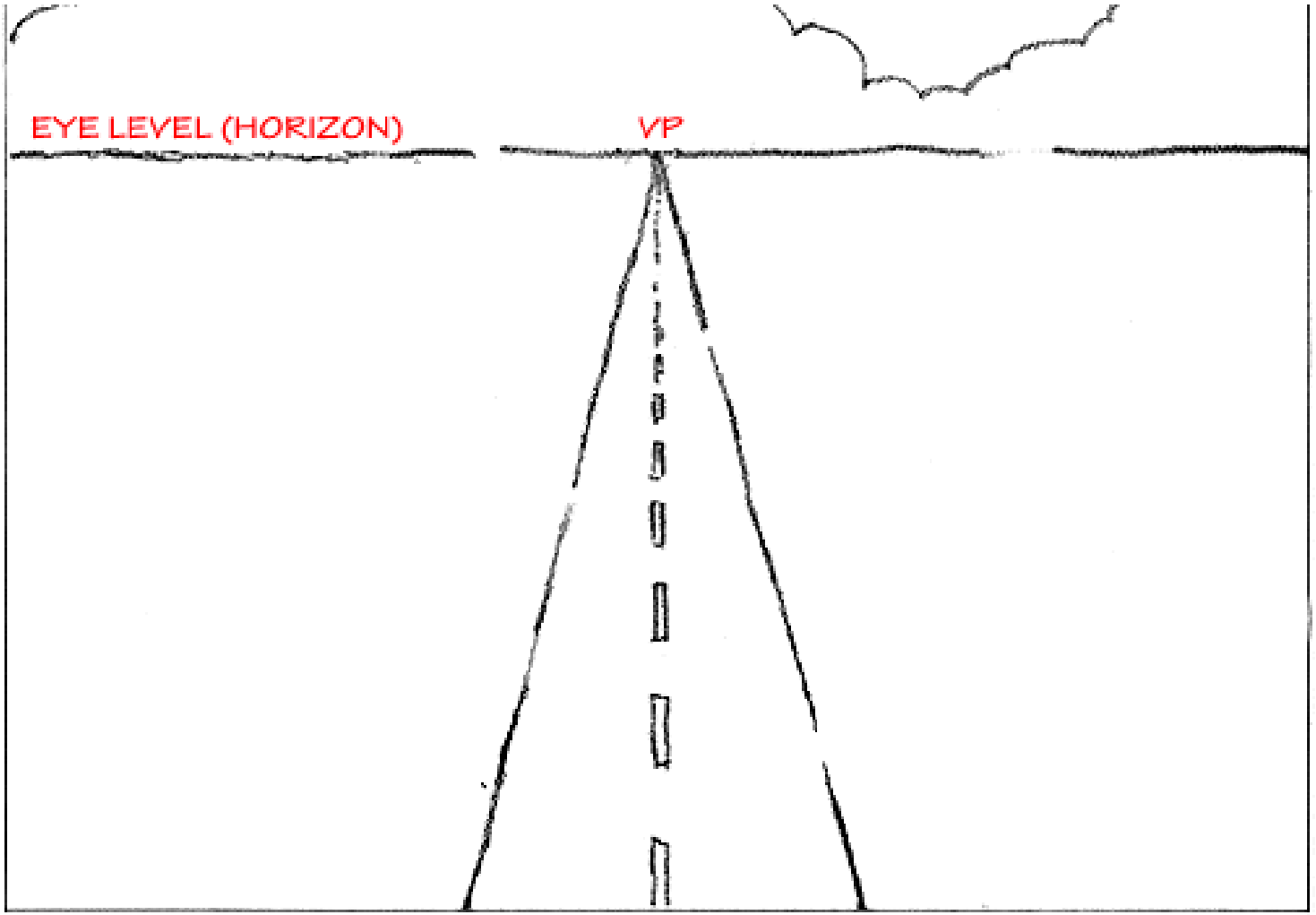

## Low angle means low horizon.

A person lying on the ground, taking the worm's-eye view, would have a low horizon.

John Caleb Bingham, The Jolly Flatboatmen, 1846

John Caleb Bingham, The Jolly Flatboatmen, 1846

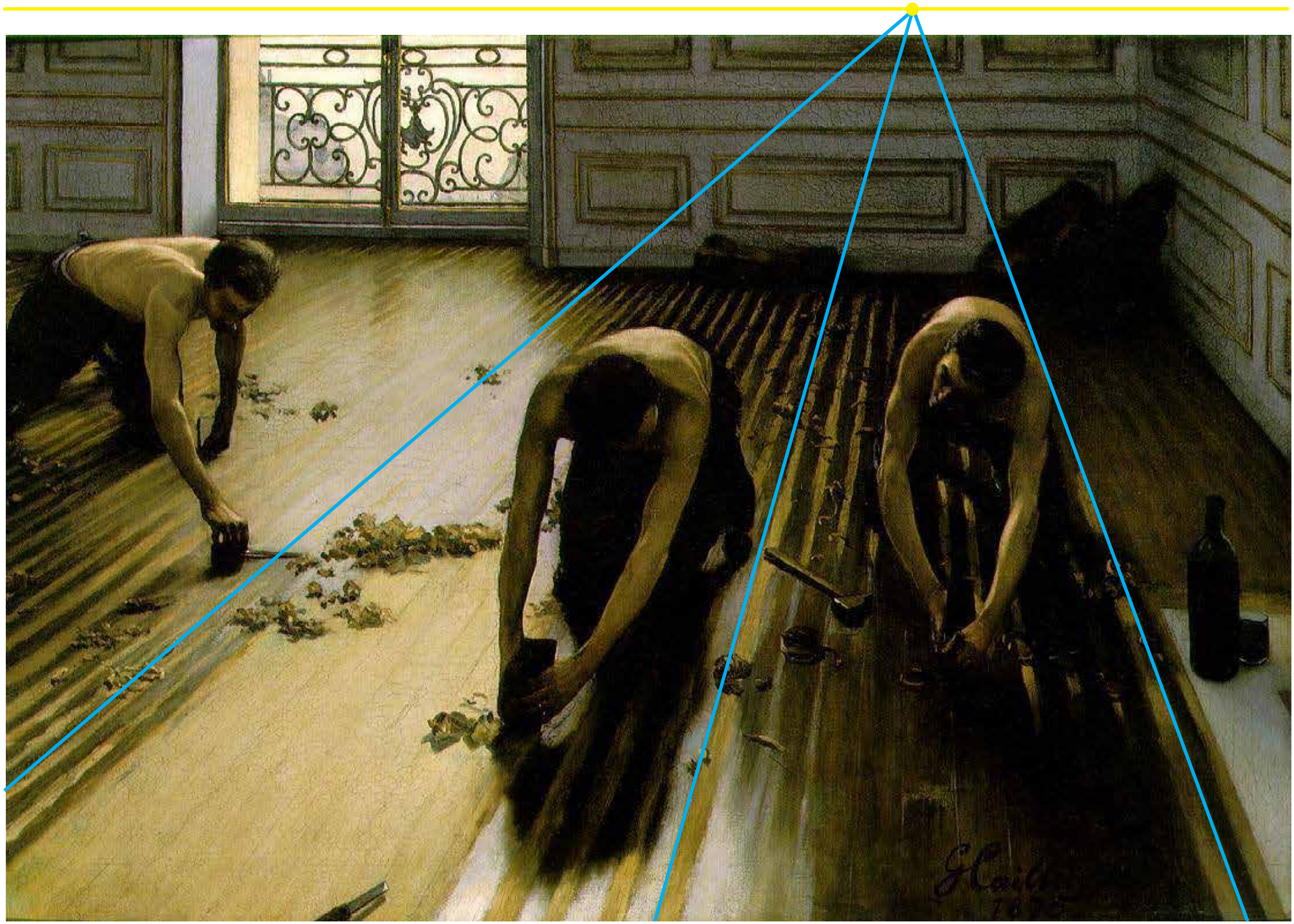
# Vanishing Point and Horizon




## High angle means high horizon.

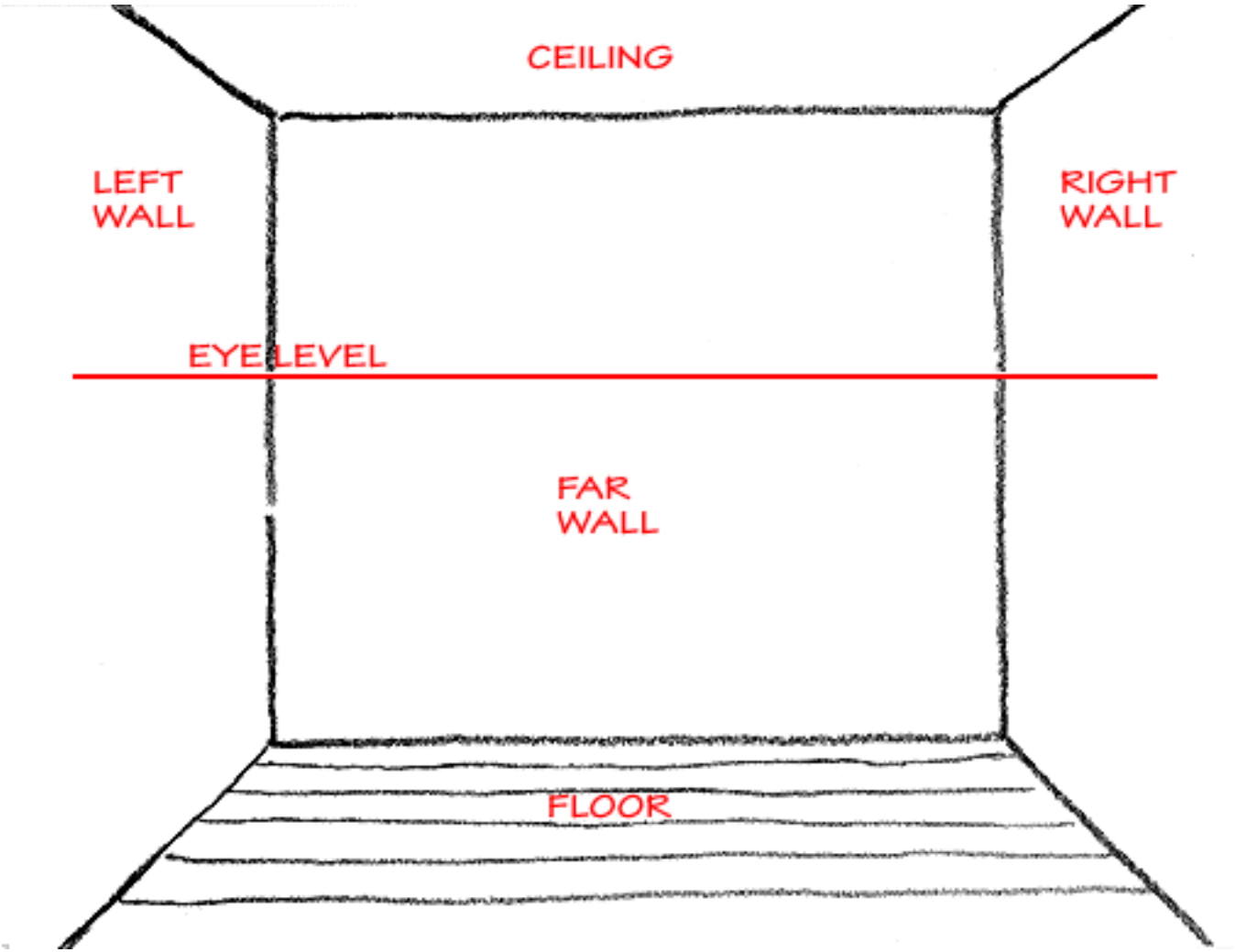
The bird's-eye view raises the horizon. The next time you are on an airplane on a clear day, look out the window and try to establish a horizon.

Gustave Caillebotte, The Floor Planers, 1875



Gustave Caillebotte, The Floor Planers, 1875

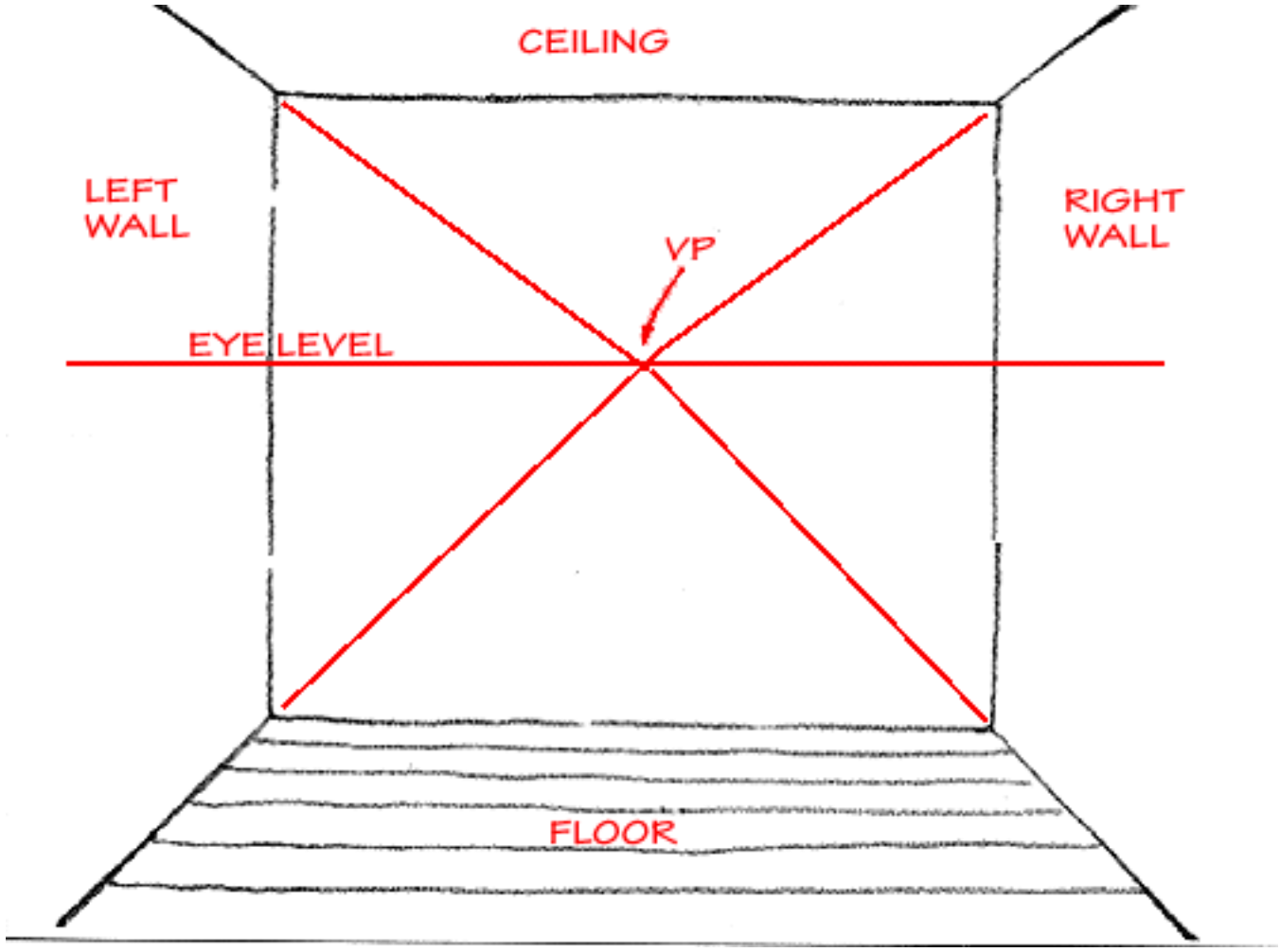
# Vanishing Point and Horizon




**For interiors, the horizon is imagined.**

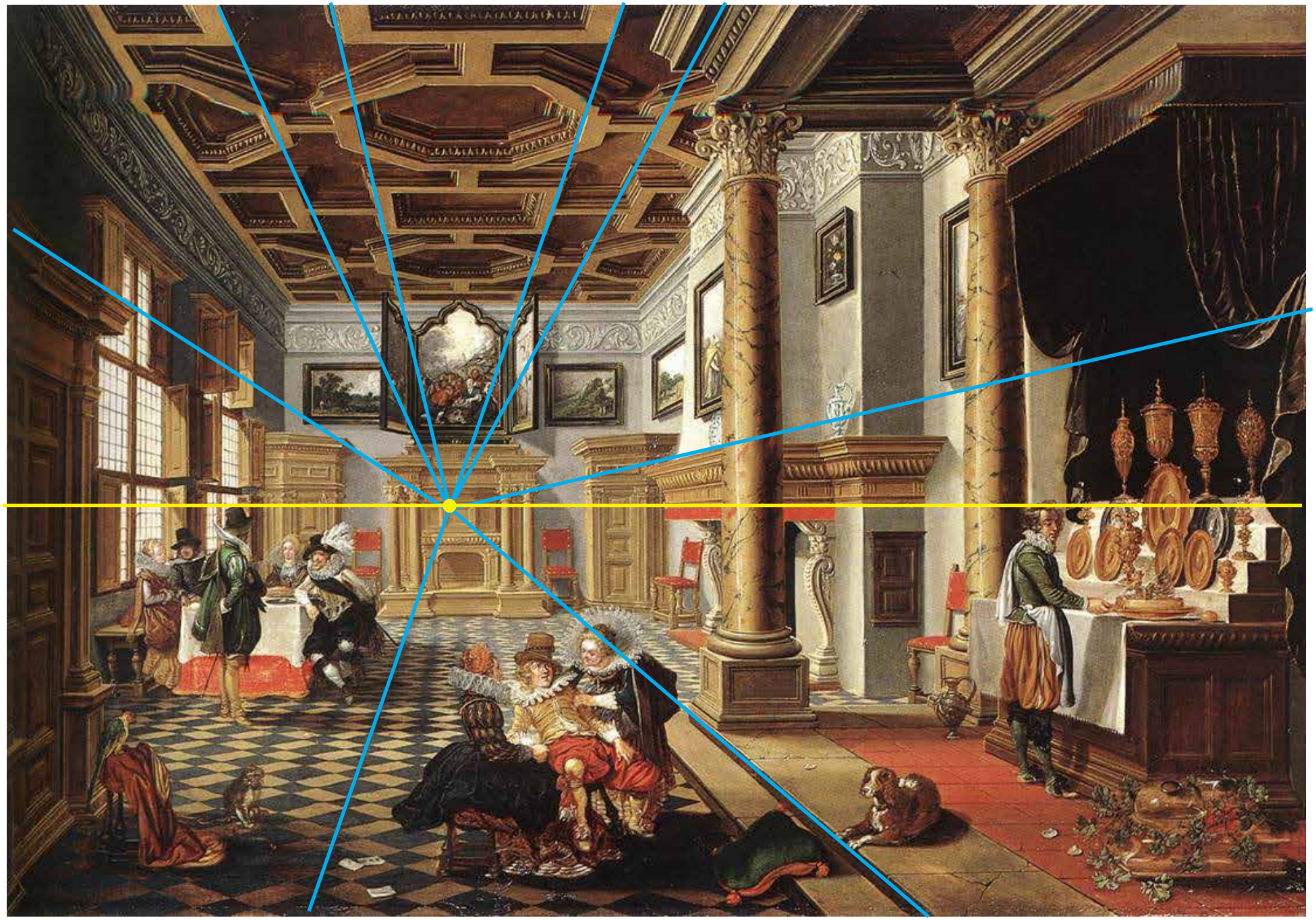
An artist might pencil in a horizon, then erase it later.

# Vanishing Point and Horizon



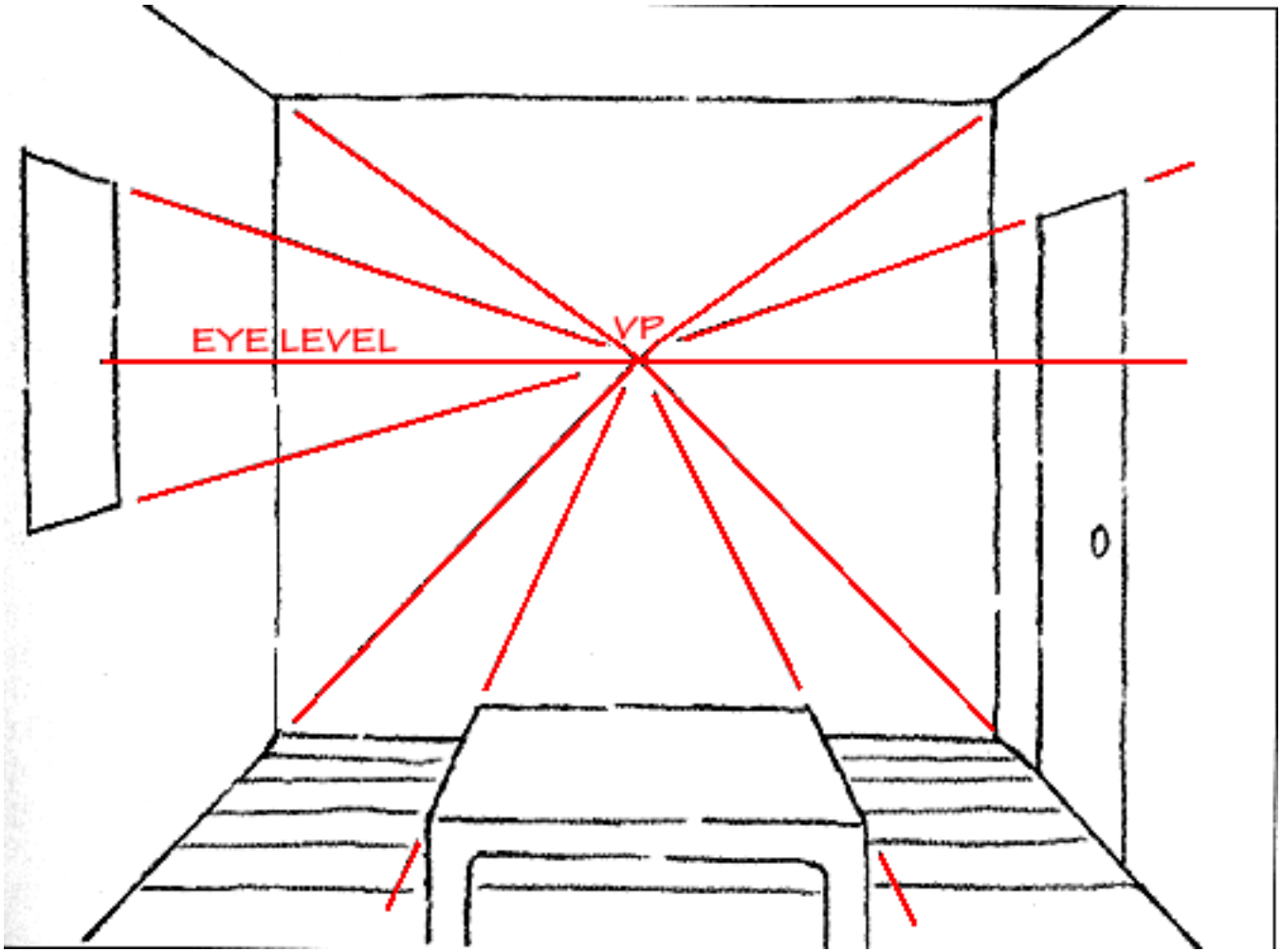

**In one-point perspective, we imagine one vanishing point, where lines converge.**

Bartholomeus van Bassen, Renaissance Interior with Banqueters, 1618-20

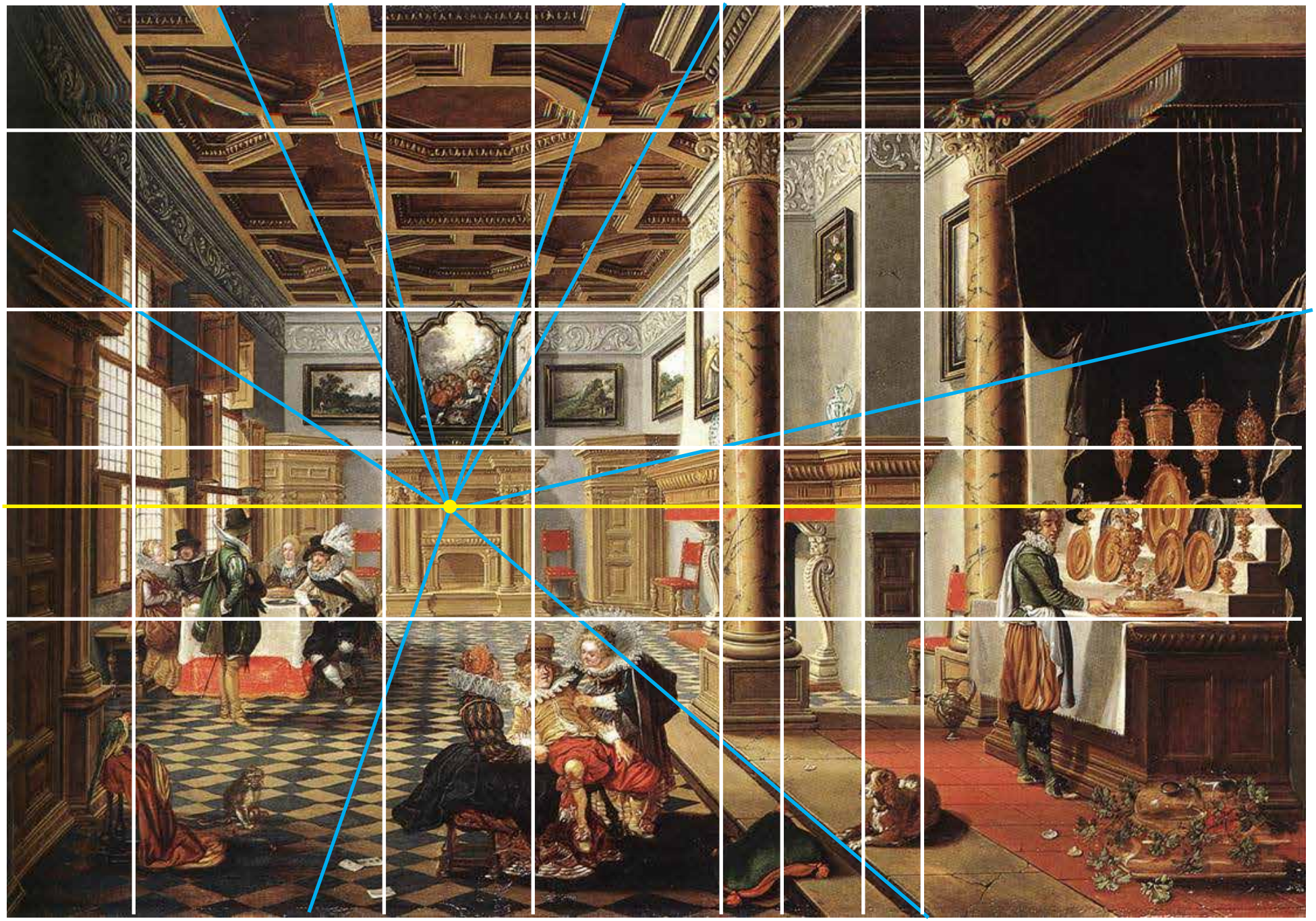


Bartholomeus van Bassen, Renaissance Interior with Banqueters, 1618-20

# Vanishing Point and Horizon




**Note that the vertical lines remain perpendicular to the horizon, and horizontal lines are parallel to the horizon.**

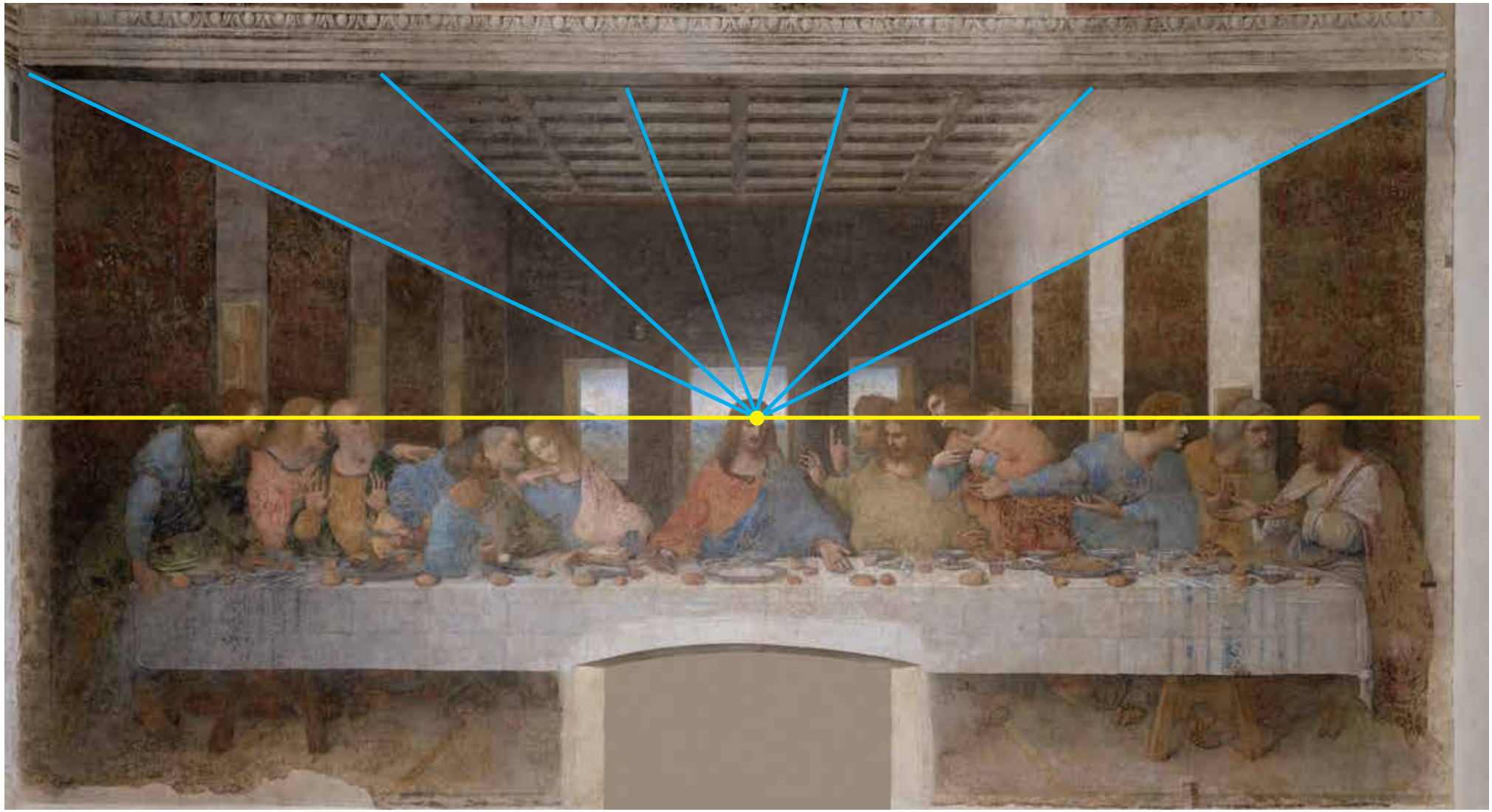


Bartholomeus van Bassen, Renaissance Interior with Banqueters, 1618-20

# Vanishing Point and Horizon

**As with any visual technique or practice, perspective can signify.**

# Vanishing Point and Horizon



**As with any visual technique or practice, perspective can signify.**

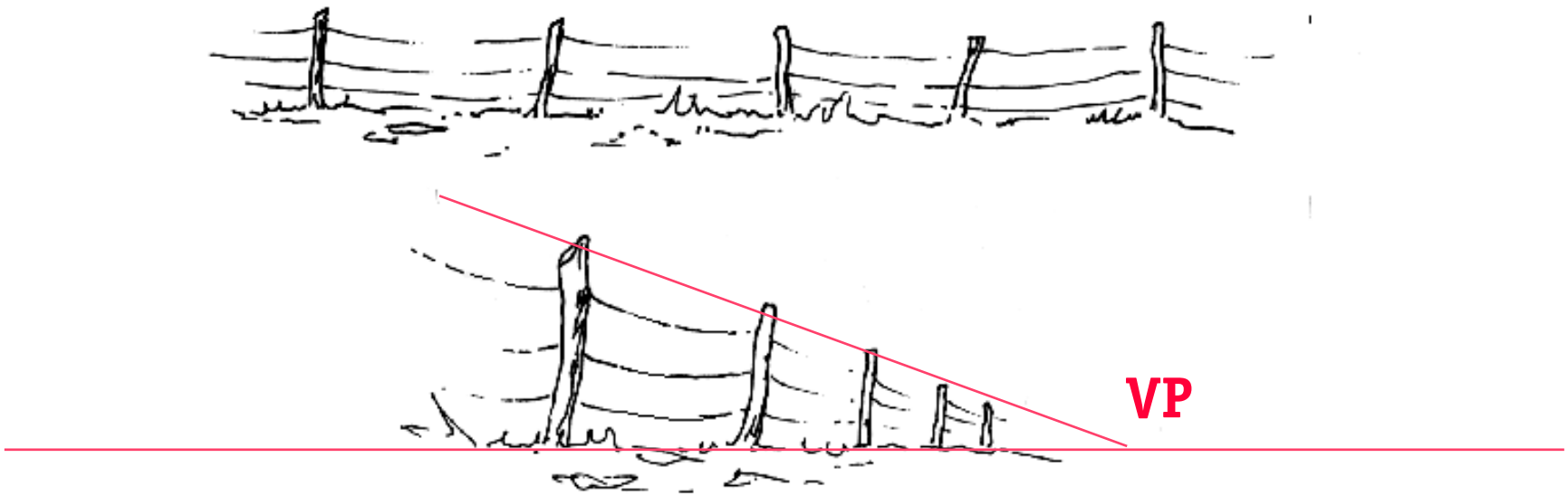
# Vanishing Point and Horizon


**As with any visual technique or practice, perspective can signify.**

# Vanishing Point and Horizon

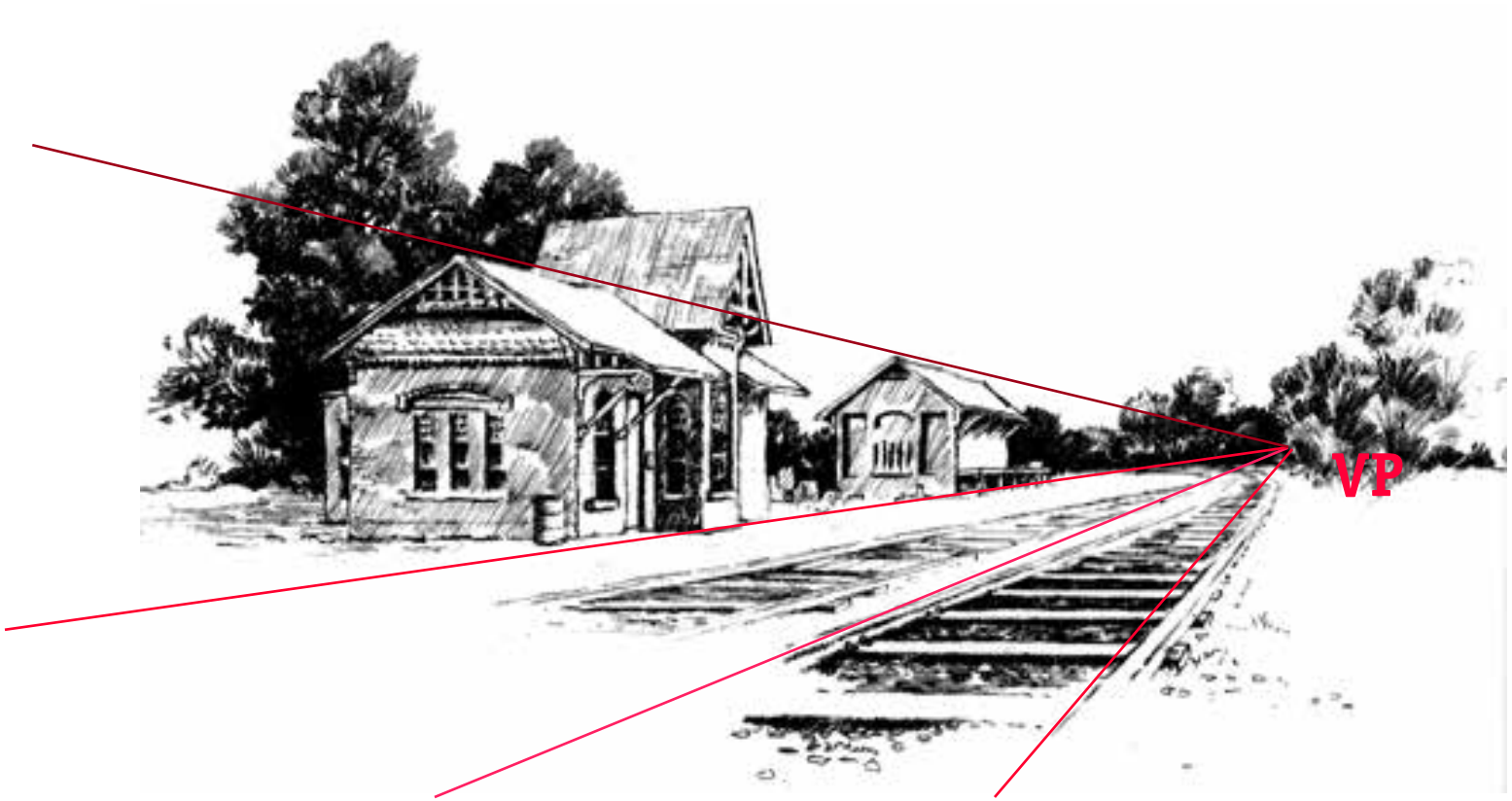

**As with any visual technique or practice, perspective can signify.**

# Size




**As figures become comparitively smaller, we see them recede in the distance.**

# Size

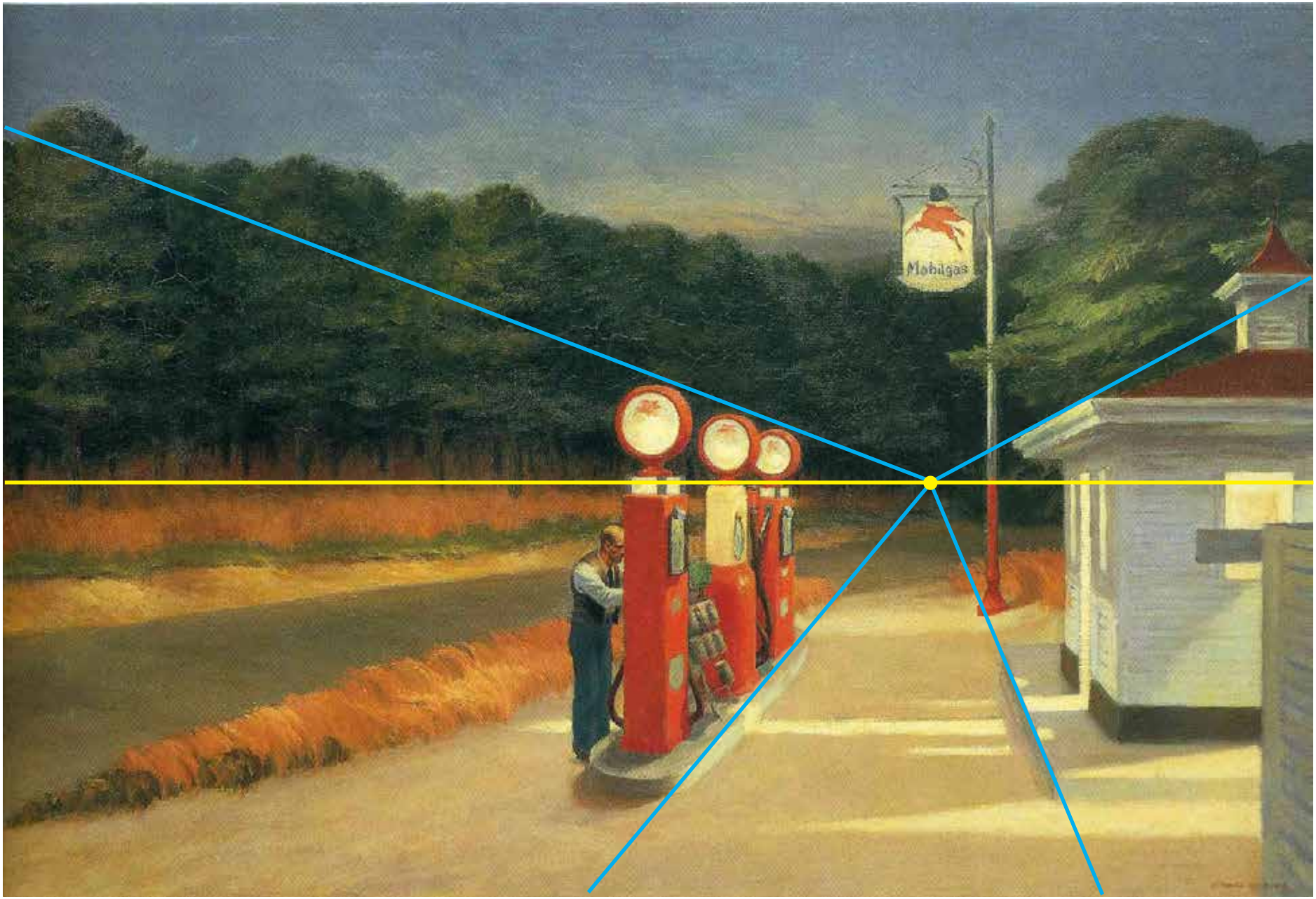



**To look realistic, objects must be reduced in size along a line moving to the vanishing point.**

# Size

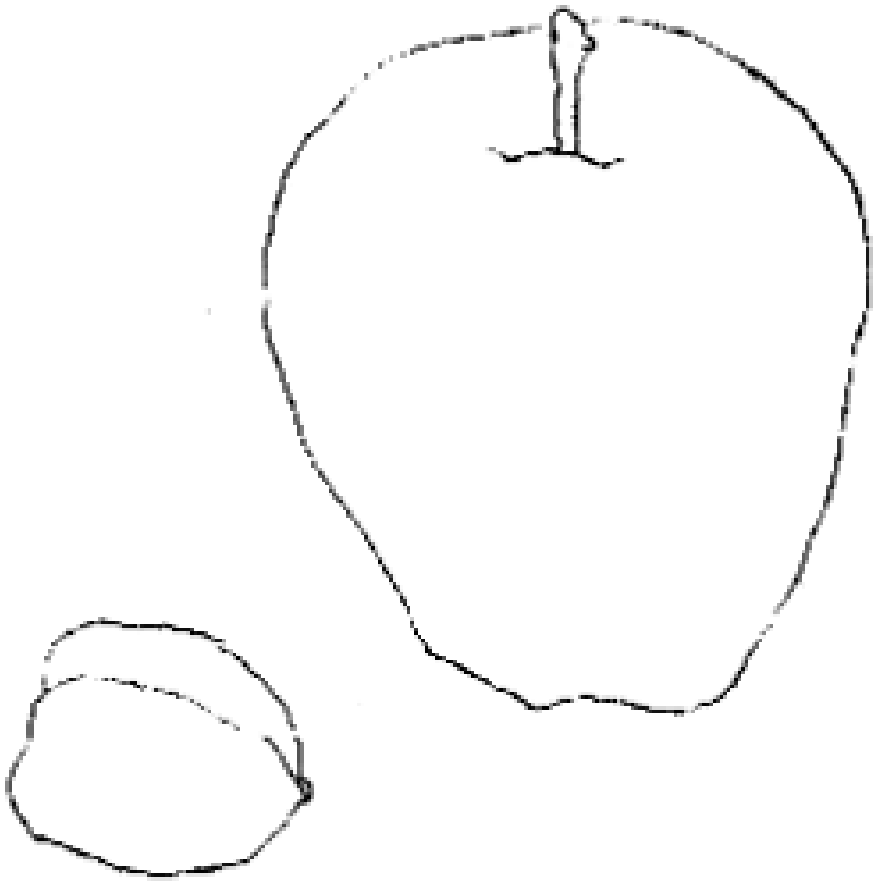

Edward Hopper, Gas, 1940

# Size



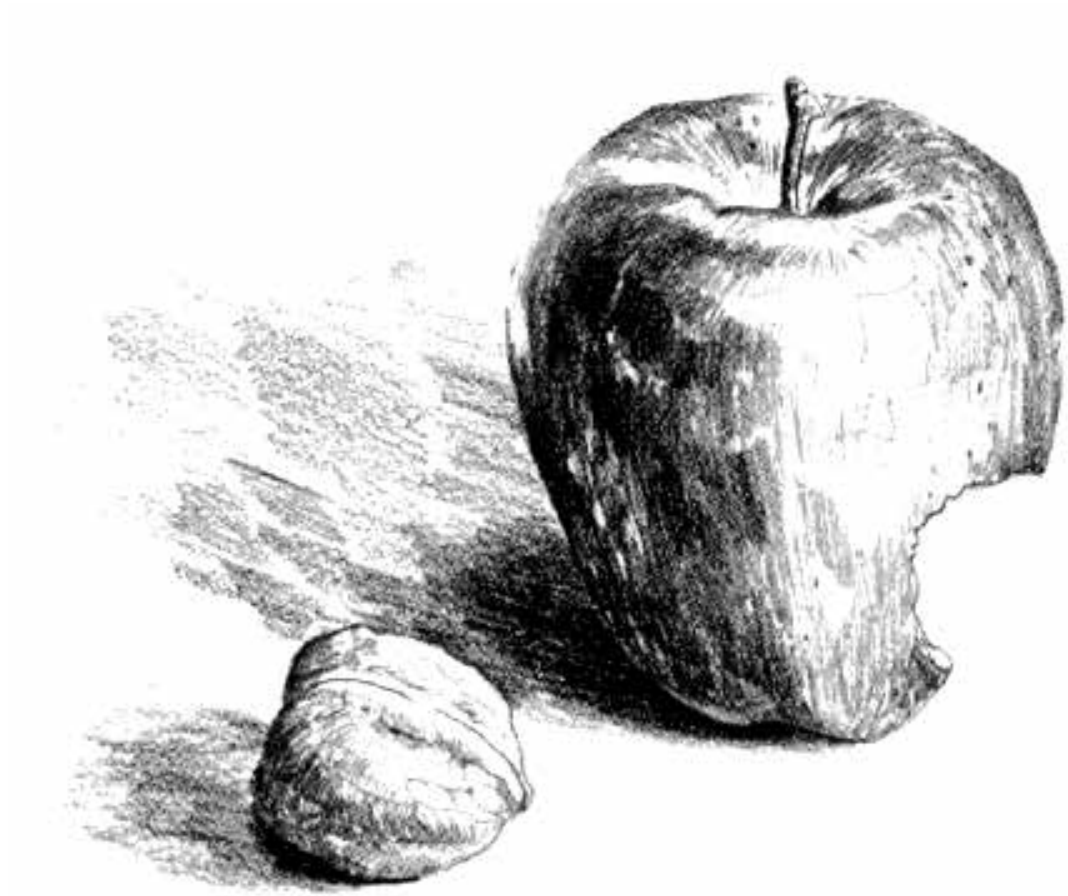

Edward Hopper, Gas, 1940

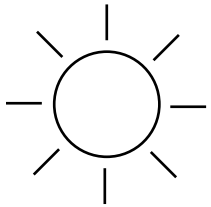
# Modeling



**We can recognize shapes from outlines, but to add depth, artists use modeling.**

# Modeling





**The key to realistic modeling is consistent positioning of the light source.**

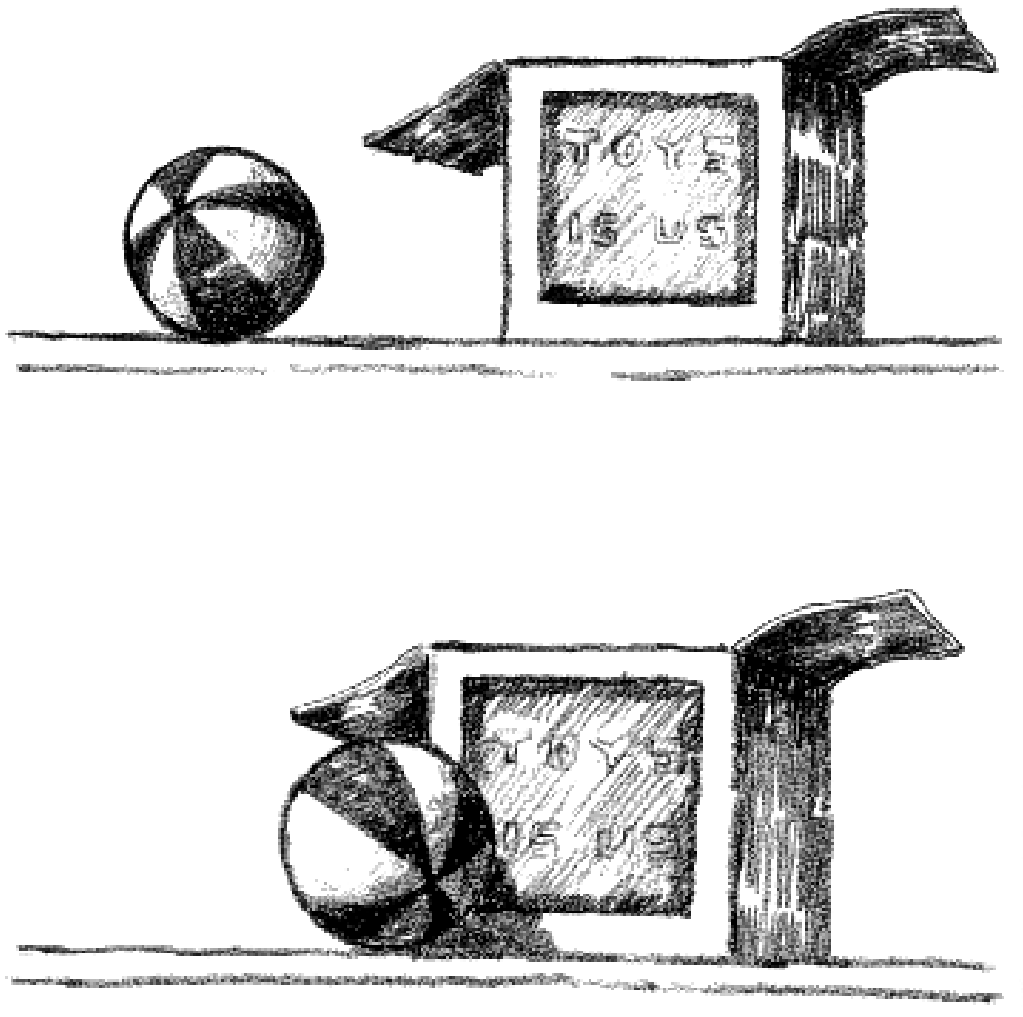
# Chiaroscuro lighting uses dramatic modeling.

Rembrandt Harmenszoon van Rijn, Syndics of the Drapers' Guild, 1662

Caravaggio, The Calling of Saint Matthew, 1599-1600

**Consistent placement of a light source**

# Overlap




We see figures in front as being closer.

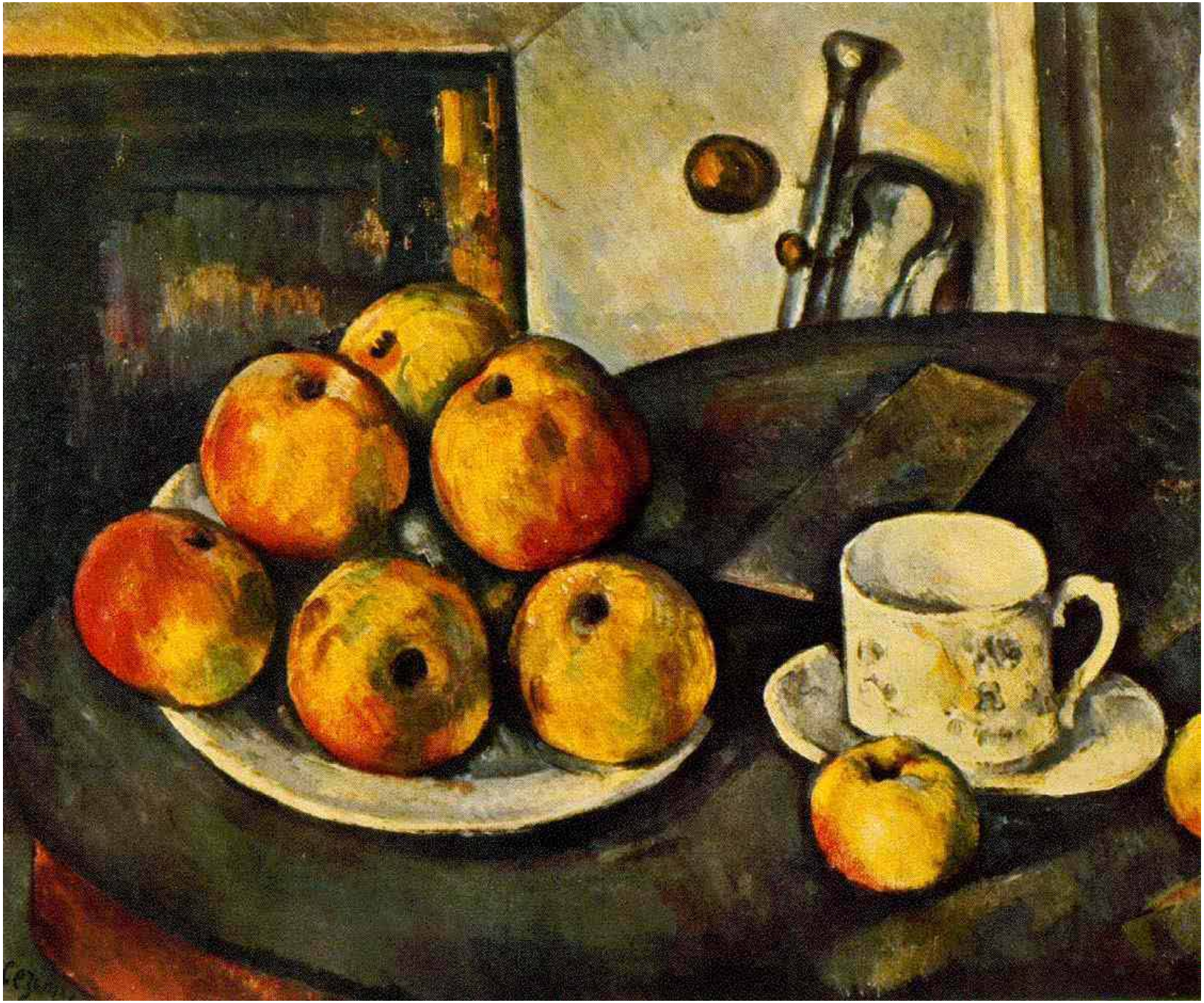
# Overlap

**Two objects that don’t overlap are seen as being on the same plane, the distance from the viewer**

# Overlap

**Overlapping the two objects creates the illusion of distance.**

# Overlap



Paul Cézanne, Still Life with Apples, 1890-94

# Value

**The colors of far-away objects fade to lighter blue and gray desaturated colors.**

# Value

**Value is related to modeling.**
**Without differences in value,**
**drawings look one-dimensional.**

# Value

**Differences in color value allow us to distiguish between figure and ground.**

# Value

**Aerial perspective is most apparent when we view mountains from a distance. Browns and greens fade to blue.**

# Value

Gustave Caillebotte, Paris Street; Rainy Day, 1877

Painters use value to create perspective. This technique also separates figure from ground

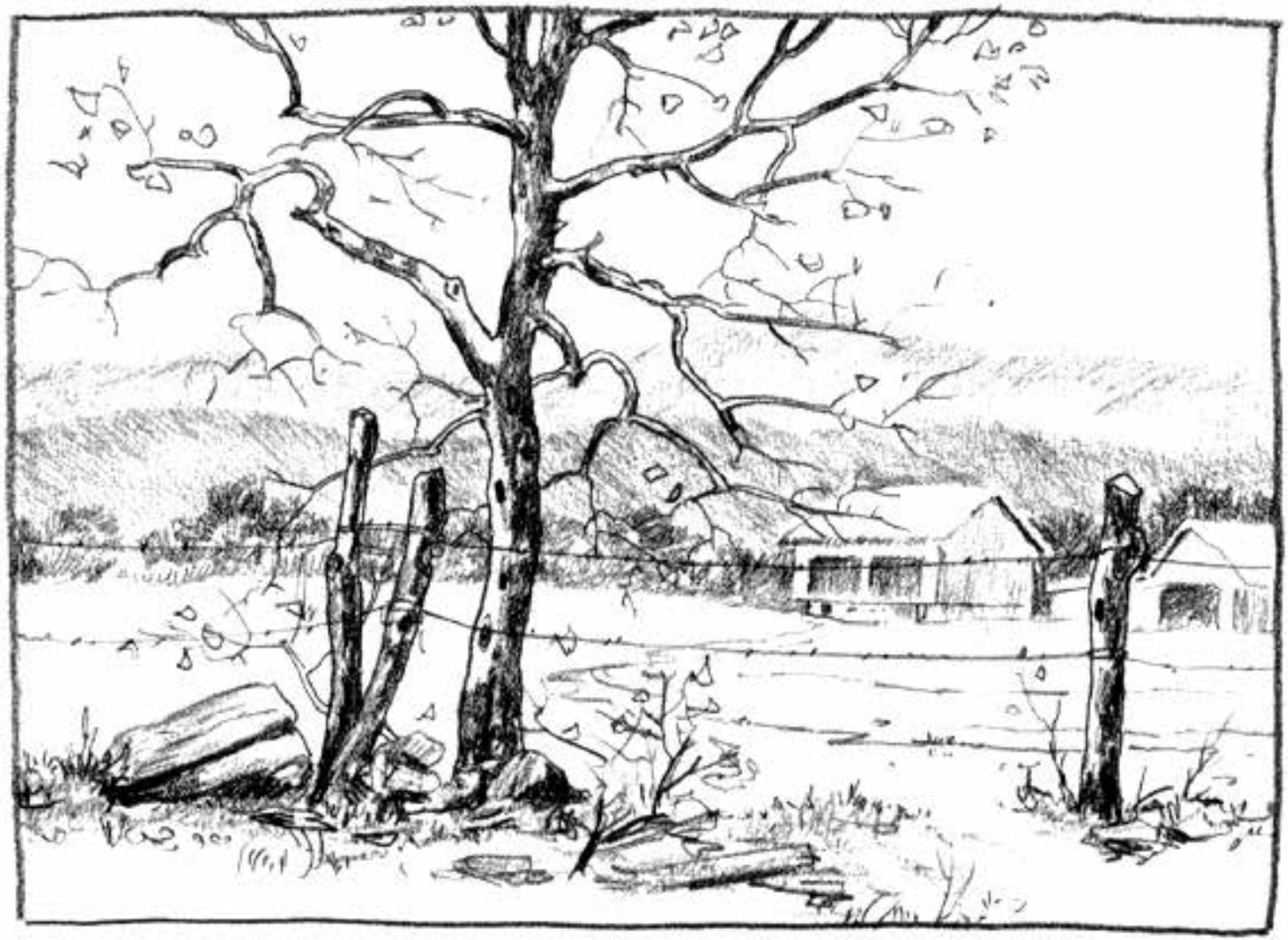
# Detail

**Figures farther away from the camera lose detail. In this highly detailed drawing, nothing stands out; the scene looks flat.**

# Detail

**By eliminating detail in the background, we separate the figures from the background.**

# Detail



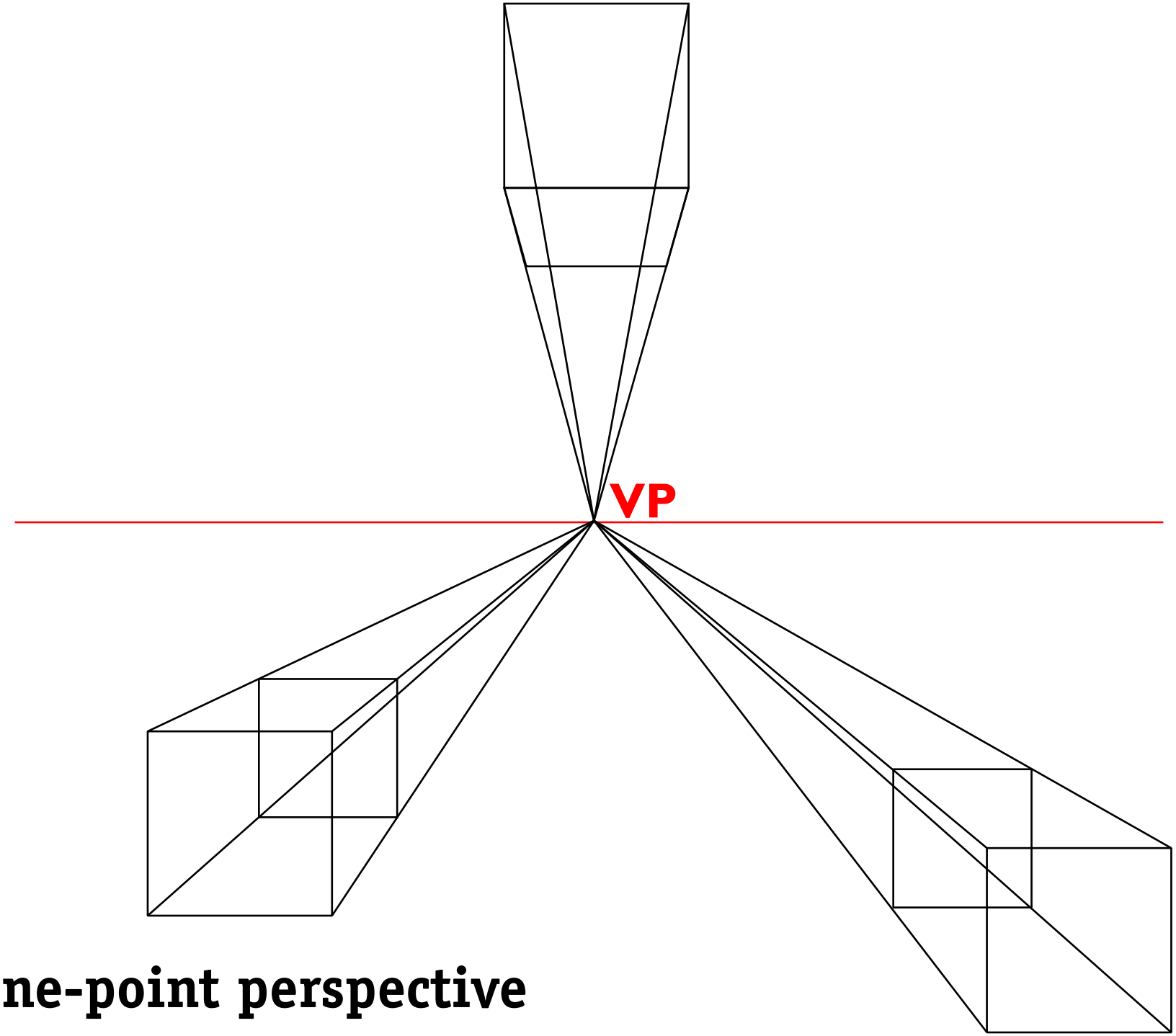
**This scene presents less and less detail as objects recede in the distance.**

# Detail

**The figures in Frederick Remington's *The Prisoner* lose detail as they recede in the distance.**

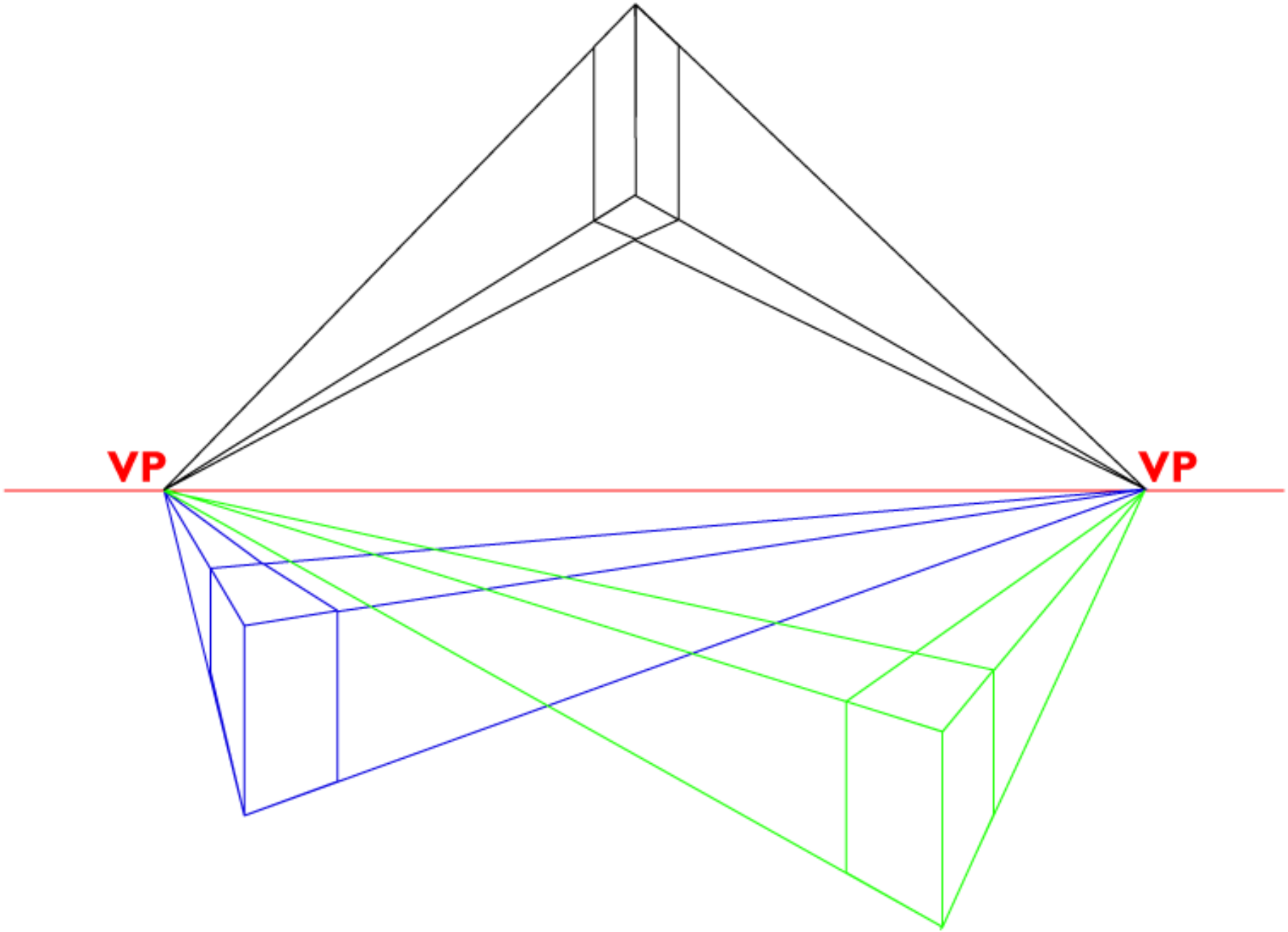
# Detail

**The figures in Frederick Remington's *The Prisoner* lose detail as they recede in the distance.**




# One-point perspective

# Two-point perspective



# Two-point perspective

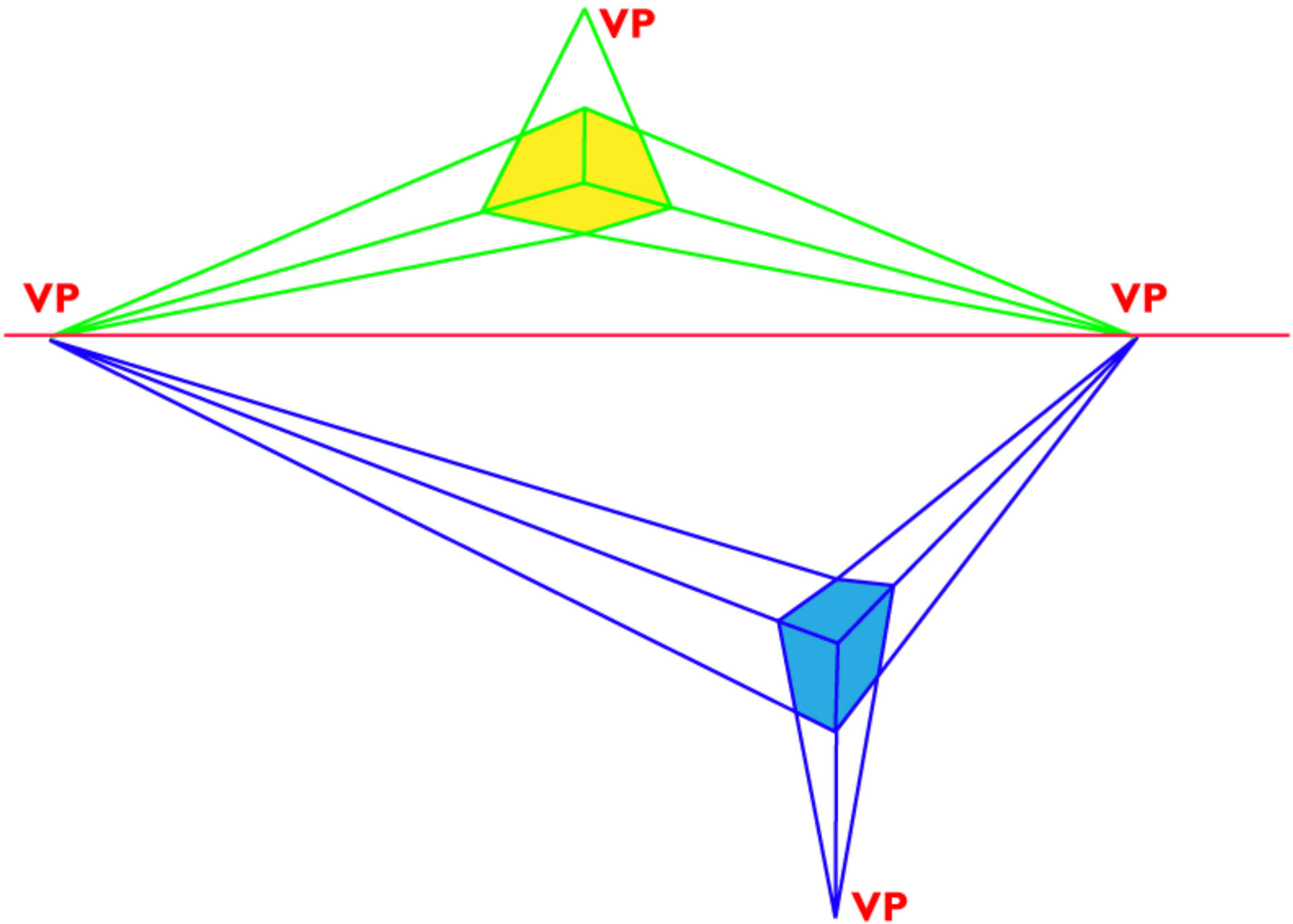
# Two-point perspective

# Two-point perspective

# Two-point perspective

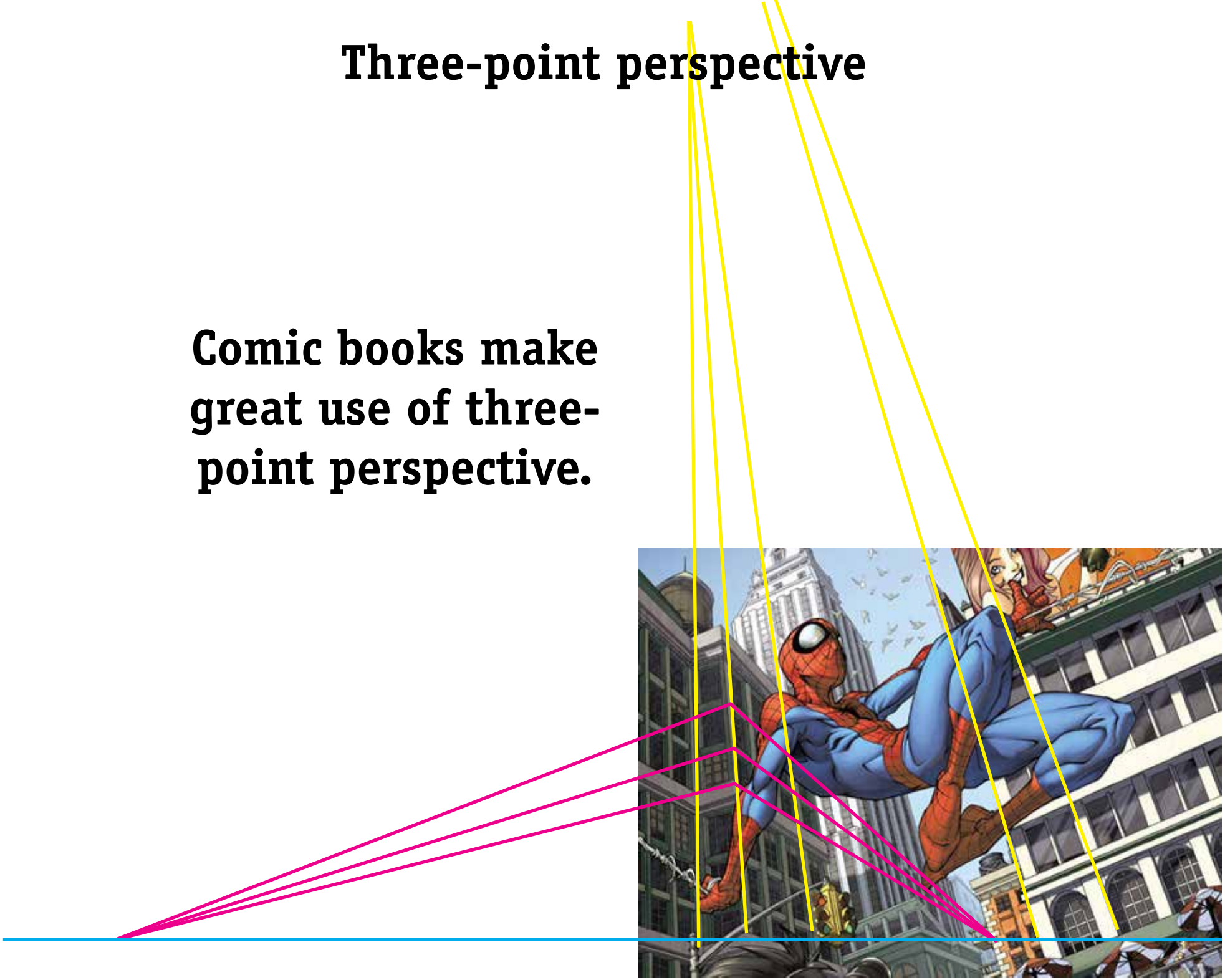
# Two-point perspective

# Three-point perspective

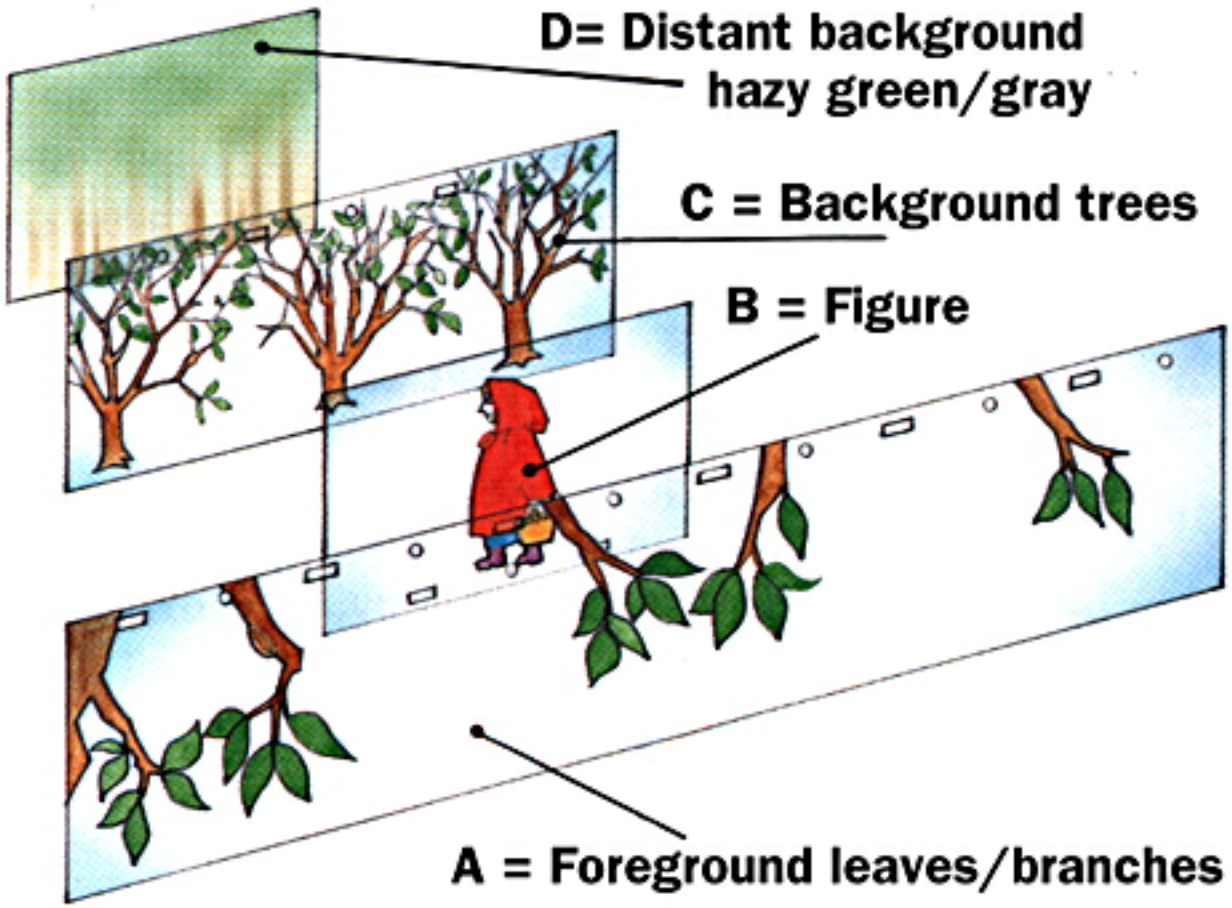


# Three-point perspective

**Comic books make great use of three-point perspective.**



# Perspective in motion




**Disney studios created the multiplane camera to simulate realistic perspective in motion.**

Watch a video about the multiplane camera

# The Multiplane Camera

**Disney studios created the multiplane camera to simulate realistic perspective in motion.**

Watch a video about the multiplane camera