

# Design Principles

## Chapter 10 – Illusion of Space

# Ways to Show Depth

1. Size
2. Exaggerated Size
3. Overlapping
4. Vertical Location
5. Aerial Perspective
6. Linear Perspective
7. One-Point Perspective
8. Two Point Perspective
9. Multipoint Perspective
10. Amplified Perspective
11. Multiple Perspective
12. Isometric Perspective
13. Open Form/Closed Form
14. Transparency



Gustave Caillebotte. Rue de Paris; Temps de Pluie (Paris Street, Rainy Day). 1877. Oil on canvas, 6' 11 1/2" x 9' 3/4" (212.2 x 276.2 cm). The Art Institute of Chicago (Charles H. and Mary F. S. Worcester Fund Collection, 1964.336).

# 1. Size

## 1. Size

*Size* – Things that are closer are larger. As they get further away they get smaller.

- Size is the easiest.
- Works best with similar objects. (Line of Trees, etc...)

How to use:

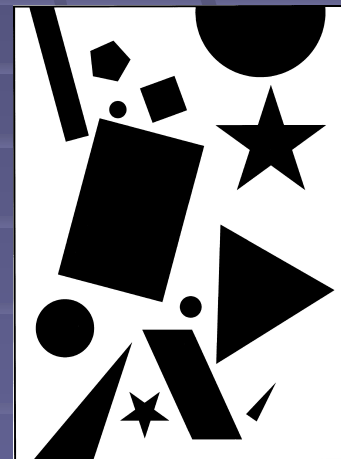
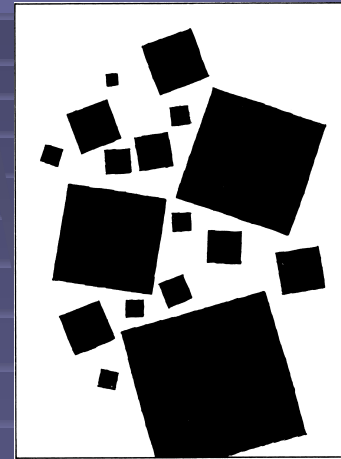
- Repeat objects over and over while decreasing the size towards the vanishing point



Abraham Walkowitz. Bathers on the Rocks. 1935. Oil on canvas, 2' 1" x 2' 6 1/8". Tampa Museum of Art Collection, Museum Purchase (1984.15). Skify, Berlin. Gift of the Judith Skify, Berlin. Gift of the Judith

# Spatial Effect with Abstract Shapes

- Repetition also works with abstract shapes.
- It works best with similar shapes
- It is not as effective with a variety of different shapes.





## 2. Exaggerated Size

*“Using relative sizes to give a feeling of space and depth is very common to many periods and styles of art.”*

How:

1. Take an object with a familiar size.
  2. Place it in the foreground and make it very large and /or have it escape the edges of the picture.
  3. Then place other familiarly sized objects in the “background” by making them very small.
- This will create distance and a dynamic visual pattern.



Ando Hiroshige. Suido Bridge and Surugadai (Suidobashi Surugadai) No. 48 from Famous Views of Edo, Edo Period, Ansei Era, published May 1857. Color woodblock print. Hiroshige, Ando or Utagawa (1797-1858). Brooklyn Museum of Art, New York, gift of Anna Ferris/The Bridgeman Art Library.

# Hieratic Scaling

- ***Hieratic Scaling*** - the use of relative size to show importance, not space.
- For example, the king, or the Pope, or God or Jesus, angels, etc. are larger than everything else.

Lorenzo Monaco (Italian, documented in Florence 1391- 1423/24). The Intercession of Christ and the Virgin. Early 15th century. Tempera on canvas, overall: 7' 10 1/4" x 5' 1/4" 1" (239.4 x 153.25 cm). The Metropolitan Museum of Art, The Cloisters Collection, 1953 (53.37).



# 3. Overlapping

- Simple device for creating depth.
- When you can see the complete object it is considered in front.
- The illusion of depth is increased when you use overlap in combination with change in size.
- The same principle can be used with abstract shapes.



Jacob Lawrence. Cabinet Makers. 1946. Gouache with pencil underdrawing on paper; sheet: 1'10" x 2' 6 3/16" (55.9 x 76.6 cm), image: 1' 9 3/4" x 2' 6" (55.2 x 76.1 cm). Hirshhorn Museum and Sculpture Garden, Smithsonian Institution, gift of Joseph H. Hirshhorn, 1966 (66.2915).



## 4. Vertical Location

- Used widely in the Near East and Asian art.
- Objects lower in the picture frame are considered “closer.”
- Based on the way we see things. We see things at the ground level first, and then we look up.



Miskina. The Disputing Physicians (or Philosophers). 1593-1595. From the Khamsa of Nizami, f.23v. Painting on paper, 30 x 19.5 cm. © British Library Board. All rights reserved. OR

12208.



# Emphasizing Figures and Objects

- The use of vertical location can be used to show off the figures, object or architectural features in a piece.
- The objects themselves become more important than depth.



Faith Ringgold. Tar Beach. 1988. Acrylic paint on canvas and pieced tie-dyed fabric, 6' 2" x 5' 8 1/2". Collection of the Solomon R. Guggenheim Museum, New York.

# The Changing Horizon

*“The horizon is based on a visual fact.”*

*Horizon line = eye level*

- New way to view things (best used/understood by the younger generations):
- Aerial photography/ Bird’s eye view



Berenice Abbott. Wall Street, Showing East River from Roof of Irving Trust Company. 1938. Photograph. Museum of the City of New York.



# 5. Aerial Perspective

## *Aerial (Atmospheric)*

*Perspective*—use of color or value to show depth.

- Color and/or value becomes less as an object recedes.

How:

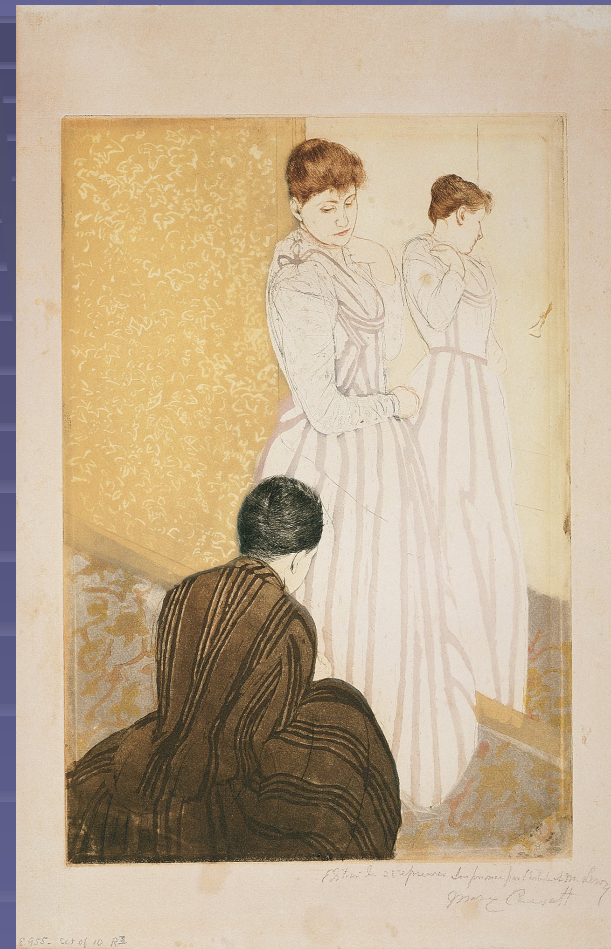
- Objects turn blue gray and fade.
- Contours become less distinct
- Edges are less clear.



Ansel Adams. Yosemite Valley from Inspiration Point. c. 1936. Photograph. Copyright © 1993 by the Trustees of the Ansel Adams Publishing Rights Trust. All rights reserved.

# Aerial Perspective continued...

Aerial perspective applies to both landscapes and to portraits.



Mary Cassatt. The Fitting. 1890-1891. Drypoint and aquatint on laid paper; plate: 1' 2 3/4" x 10" (37.5 x 25.4 cm), sheet: 1' 6 13/16" x 1' 1/8" (47.8 x 30.8 cm). National Gallery of Art, Washington, D.C. (Chester Dale Collection, 1963.10.252)



# 6. Linear Perspective

*Linear Perspective*—As parallel lines recede, they appear to converge and to meet on an imaginary line called the horizon, or eye level.

*Vanishing Point*— parallel lines come together at the same place in infinity, called the vanishing point.



Paolo Uccello. The Battle of San Romano in 1432. Condottiere Niccolo da Tolentino leading the Florentine forces against Siena. National Gallery, London, Great Britain. Kitagawa Utamaro. Moonlight Revelry at the Dozo Sagami. Edo Period, Japan. Ink and color on paper, 147.0 318.6 cm.

# Linear Perspective as Unifier

- Dominant in Western Art for hundreds of years.

Why?

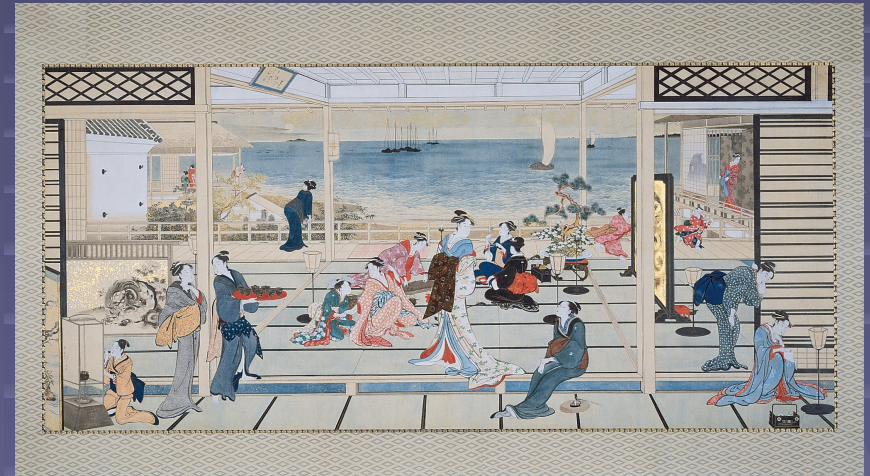
1. Looks like what we see.
2. Unifies things.
3. Imposes order.

***Monocular*** - a single fixed vantage point on which linear perspective is based.

***Parallax*** - a vantage point based on a two point system much like our eye sight.

# Linear Perspective and Non-Western Cultures

- Other cultures use perspective too, thereby making it a universal design



Kitagawa Utamaro. Moonlight Revelry at the Dozo Sagami. Edo Period, Japan. Ink and color on paper, 147.0 x 318.6 cm. Freer Gallery of Art, Smithsonian Institution, Washington, D.C. (gift of Charles Lang Freer, F1903.54).

# 7. One-Point Perspective

One-Point Perspective = *Linear Perspective* – Everything (All lines) go to one point: the vanishing point.

- This effect was rediscovered during the Renaissance period.

“A single point has been placed on the horizon line and all lines of objects at right angles to the plane of the canvas angle off towards that point.”

## Positioning the Horizon

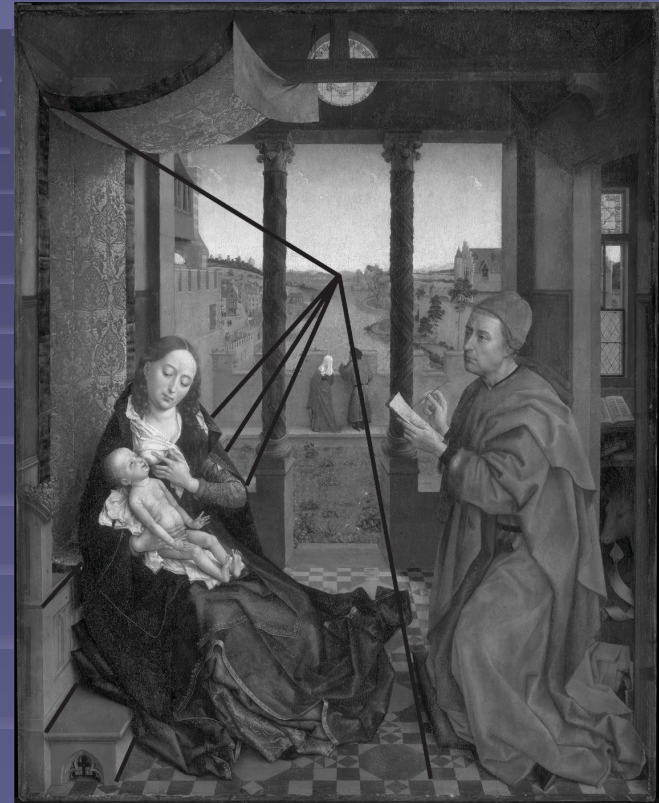
- The choice of where to put the horizon is unlimited; it does not have to be centered.

## Exploring One-Point Perspective

- Place one point on the horizon, all lines then go to this point.



# One-Point Perspective Example



Rogier van der Weyden. Saint Luke Drawing the Virgin and Child. c. 1435. Oil and tempera on panel, 4' 6 1/8" x 3' 7 5/8" (137.5 x 110.8 cm). Museum of Fine Arts, Boston (gift of Mr. and Mrs. Henry Lee Higginson, 1893, 93.153). Photograph © 2007 Museum of Fine Arts, Boston.

The composition of the painting in A involves parallel lines converging at a vanishing point on the horizon. 50th anniversary of the Danish Jews' flight to Sweden. 1993. Client: Thanks to Scandinavia, New York.

# 8. Two – Point Perspective

*Two – Point Perspective*  
uses 2 vanishing points  
on the horizon.

- Looks more natural than  
1-point perspective.

**A Static Effect Can be a  
Dramatic Element**

- A strict two point  
perspective can look  
posed and artificial.



Giovanni Antonio Canal Canaletto (1697  $\approx$  1798).  
Campo Santa Maria Zobenigo. Venice, Italy. Oil  
on canvas, 1' 6 1/2" x 2' 6 3/4" (47 x 78.1 cm).  
Private collection. Karl and Jennifer Salatka  
Collection, Concept Art

# 9. Multipoint Perspective

*Multipoint Perspective* – Uses more than 2 vanishing points.

- Can create a disorienting or anxious feeling in the viewer.

## **For Dynamic Spatial Effects**

- Use a multipoint perspective (more than 2) for a dynamic feeling.



The angled corridors use several vanishing points.  
George Tooker. *The Subway*. 1950. Egg tempera on composition board; sight: 1' 6 1/8" x 3' 1/8" (46 x 91.8 cm), frame: 2' 2" x 3' 8" (66 x 111.8 cm). Whitney Museum of American Art, New York (purchase with funds from the Juliana Force Purchase Award 50.23).




# 10. Amplified Perspective

## *Amplified Perspective*

- Like foreshortening.
- Object closest to the camera or artist is very large and rest of the figure or scene is small in the background.
- Gives a dramatic, dynamic quality.
- Quickly pulls the viewer into the picture.

*Juxtaposition* - When one image or shape is placed next to or in comparison to another image or shape.



**Liva upp** din käre man med lite läder och **gummi** på julafton.

Titta in till oss på Din Sko och köp **två par skor**.

Det ena ger du din käraste i **julkapp**. Det andra behåller du själv.

Och det **billigaste** paret får du för **halva priset**.

Detta glädje är dubbel glädje.

FRÖJDARDET FÅR INTE FÖRBINNAS MED ANDRA RABATTER. DET GÄLLER TILL OCH MED DEN 24 DECEMBER ELLER SÄ LÅNGT LÄNGRE TIDEN.

**Din sko**

Ad for Din Sko shoe store, Sweden. Agency: Inform Advertising Agency, Gothenburg. Art Director: Tommy Ostberg. Photo: Christian Coinberg.



# 11. Multiple Perspectives

**Multiple Perspective** - When looking at a figure or object from more than one vantage point at the same time.

## Multiple Perspectives in Ancient Art

- Was a basic Pictorial device used by the Egyptians.
- The objective was not to show the figure as it really was but to show the most important part.
- To show what made humans human, Ex: the eyes, the arms, etc...



Detail of Wall Painting in the Tomb of Nakht, Thebes. c. 1410 B.C. Victor R. Boswell, Jr., National Geographic photographer.

# Multiple Perspective Today

- Since the camera let's us make an exact replica for life it frees artists up to try different things.

**Montage** - “putting together” shapes or image from various sources and/or angles.

**Conceptual** - Artwork in which the idea is more important than the execution or technique.



David Hockney. Brooklyn Bridge, November 28, 1982. Photographic collage, 9' 1" x 4' 10".



# 12. Isometric Projection

## A Spatial Illusion

*Isometric Projection* – Parallel Lines remain parallel. They do not recede to a vanishing point.

- Used mainly in drafting and in traditional Oriental paintings.

## Isometric Projection in the East

- Traditional Japanese wood block prints used this.

## Isometric Projection in the West

- Rarely seen in western drawing
- Used in engineering and mechanical drawings
- Can create an interesting sort of optical illusion.



Kubo Shunman. Women in a Tea House. Late 1780s. Color woodblock print, sheet: 33 x 23 cm. © The Cleveland Museum of Art (bequest of Edward L. Whittemore, 1930.208).

# 13. Open and Closed Form

## The Concept of Enclosure

*Open and Closed form -*

- Whether the entire complete or partial view of a scene.
- How the image is contained inside of the frame.

*Frame -* a border around the perimeter that visually turns the eye inward.

- A frame automatically turns the eye inward.



Jean-Baptiste-Simén Chardin. The Attributes of Music. 1765. Oil on canvas, 2' 11 7/8" x 4' 8 7/8" (91 x 145 cm). Musée du Louvre, Paris, France.  
Alex Katz Studio II, New York. Art © Alex Katz/Licensed



# Exploring Closed Form

*Closed form*— When the picture and the object lead the viewer's eye back into the picture.

- Creates a formal and more structured appearance.

# Exploring Open Form

*Open form*— When an object either breaks out of the frame, or pulls the viewer's eye off of the canvas.

- Creates a casual, momentary feeling.
- It is very strange when the open form is human. (You cut off part of the person in the frame.)



Alex Katz. *Ada's Red Sandals*. 1987. Oil on canvas, 4 1/2 x 5 1/2. Alex Katz Studio II, New York. Art © Alex Katz/Licensed by VAGA, New York, New York.

# Transparency

## **Equivocal Space**

*Transparency-* When two forms overlap, but both can still be seen.

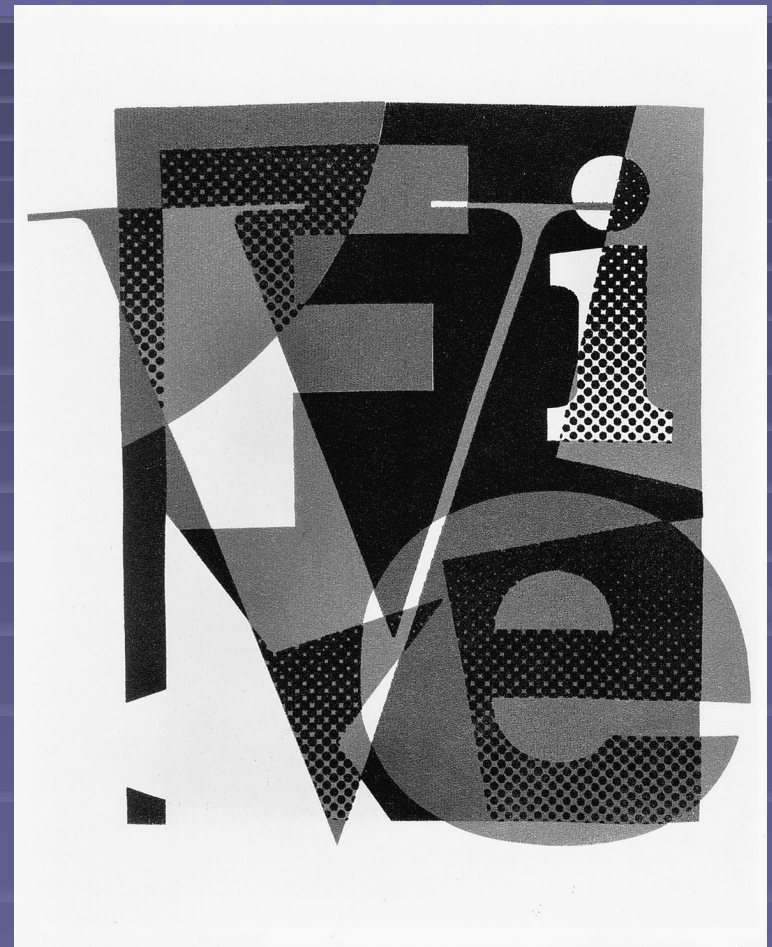
## **Interest in Ambiguity**

“Transparency does not give us a clear spatial pattern.”  
(You can't always tell what is in front and what is behind.)

***Equivocal Space*** - “Purposeful ambiguity”, (Not being clear about what is where or what overlaps what. )

Reasons for using transparency?

- To add interest
- To show something that might be hidden.



Sweatshirt design for a fifth anniversary. 1990. Designer: Jennifer C. Bartlett. Design firm: Vickerman-Zachary-Miller (VZM Transystems), Oakland, California.