Course Overview

• Introduction to Visual Perception
• Color and Light
• Perspective and Depth
• Beauty, Symmetry and the Human Face
• The Art of Illusion
  • Try to see the Op-Art and Escher exhibits at the SJMA (opens Jan. 28)

course website: orange.stanford.edu
(click on the link to Art and Perception)
Perspective and Depth

• Human Depth Perception
  • Binocular cues to depth
    • vergence
    • stereopsis
  • Monocular cues to depth
    • accommodation
    • size
    • occlusion, height
    • convergence of parallel lines
    • atmospheric effects

• Perspective in Art

• Hockney-Falco thesis
Vergence - Infinite Distance
Vergence- Medium Distance
Vergence- Close Distance
Our two Eyes see Different Views of a Scene
Our Brain Uses Stereo Disparity to Compute (Near) Depth
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Size Constancy
Size Constancy
Occlusion and Height
Occlusion and Height
Convergence of Parallel Lines
Size, Height, Occlusion, Convergence
Perspective
Pharaoh Akhenaten (~1340 BC) depicted as bigger than the rest of his royal family because he was of greater importance.

Rome, 2nd Century AD: Central and Parallel Convergence

Pompeian mural of the pageant of Orestes (courtesy CW Tyler)
Renaissance

Claude Lorrain, 1648
Renaissance

Jan Vermeer, Street in Delft (1657)
Hockney-Falco Conjecture

• Startling photo-realism emerged in Renaissance Art

• But- odd “errors” in some pieces hint at the use of optical tricks
  • camera lucida
  • concave mirror
Husband and Wife (Lotto, 1543)
Amolfini Portrait (van Eyck, 1434)
Amolfini Portrait Mirror
Supper at Emmaus (Caravaggio, 1601)
Stork's Refutation

• Engineering the necessary optics would be hard
• Lighting is a problem
• The supposed photo-realistic details aren't correct in ways not predicted by optics
• Other (known) tricks are much more likely to have been employed
German Perspective Machine

Albrecht Dürer (1471-1528), *Underweysung der Messung Mit dem Zirckel un Richtscheyt, in Linien*, Nuremberg: 1525.
Another Perspective Trick

Albrecht Dürer (1471-1528), *Underweysung der Messung Mit dem Zirckel un Richtscheyt, in Linien*, Nuremberg: 1525.
A Simple Perspective Device

Recreation of a Renaissance perspective device, from a Virginia Museum of Fine Arts 2005 exhibit.