Introduction to Medical Illustration

PLME 0400

Francois Luks

Drawing 5
Texturing
Light, light reflex, shadows

- Textures:
  - Hard surfaces: clear shadow lines, light reflexes
  - Soft surfaces: less clearly defined lines
Textures:
• Hard and shiny surfaces have clear shadow lines and light reflexes
• Soft surfaces have less clearly defined lines
• Fluffy objects have fluffy contours
Simplify, simplify...

- Volumes, shadows and light (weeks 1 and 2)
- Volume rendering
  - Gray tones v. pen and ink
  - “Back of the envelope” (drawing on the fly)
  - Shading techniques and other tricks
Outlines

• Use different thickness lines
  – To indicate close v. far away
  – To indicate contour v. inner details
  – To indicate light v. shadow
  – To indicate visible v. hidden
Outlines

• Use different thickness lines
  – To indicate close v. far away
Outlines

• Use different thickness lines
  – To indicate close v. far away
  – To indicate contour v. inner details
Outlines

• Use different thickness lines
  – To indicate contour v. inner details
    • Wide for contours (marker)
    • Finer for inner details (pen)
Outlines

- Use different thickness lines
  - Fine lines close to the light
  - Thick lines away from the light

Tim Phelps, JHU
Outlines

• Suggest transparency
  – Fine lines for hidden objects
Outlines

• Suggest transparency
  – Fine lines for hidden objects
  – Unshaded hidden objects
Outlines

• Suggest transparency
  – Fine lines for hidden objects
  – Unshaded hidden objects
  – Incomplete lines for hidden objects
Outlines

• Suggest transparency
  – Fine lines for hidden objects
  – Unshaded hidden objects
  – Incomplete lines for hidden objects
  – Graying out for hidden objects
White is a color

• Not everything has to be shaded
  – Anything “light” can be white
  – Maximize contrast

Christoph Niemann
White is a color

• Not everything has to be shaded
  – Anything “light” can be white
  – Maximize contrast
Shading techniques
Shading techniques

- Depends on
  - Medium (pencil, pen, felt-tip, chalk, marker, paint)
  - Color v. black
  - Purpose
Shading techniques

- Depends on
  - Means of reproduction
    - Black-and-white is cheaper than full-color
    - Black-and-white is easier than gray-scale
Shading techniques

• Basic styles
  – Dots (stippling)
Shading techniques

• Basic styles
  – Dots (stippling)
  – Hatching
    • Crosshatching
Shading techniques

• Basic styles
  – Dots (stippling)
  – Hatching
    • Crosshatching
    • Contour v. straight
Shading techniques

• Basic styles
  – Dots (stippling)
  – Hatching
    • Crosshatching
    • Contour v. straight
    • Basket hatching
Shading techniques

• Basic styles
  – Dots (stippling)
  – Hatching
    • Crosshatching
    • Contour v. straight
    • Basket hatching
    • Woodcut
Shading techniques

• Basic styles
  – Dots (stippling)
  – Crosshatching
  – “Eyelashes”
Shading techniques

• Basic styles
  – Dots (stippling)
  – Crosshatching
  – “Eyelashes”
Shading techniques

- Basic styles
  - Dots (stippling)
  - Crosshatching
  - “Eyelashes”
Shading techniques

• Basic styles
  – Dots (stippling)
  – Crosshatching
  – “Eyelashes”
Shading techniques

• Basic styles
  – Dots (stippling)
  – Crosshatching
  – “Eyelashes”
  – Snodgrassing*

*Robert E. Snodgrass
Shading techniques

• Basic styles
  – Dots (stippling)
  – Crosshatching
  – “Eyelashes”
  – Snodgrassing
Shading techniques

• Combine styles
• Rich texture
  – Wall Street Journal “hedcuts”
Shading techniques

- Combine styles
- Represent different textures
Shading techniques

• Combine styles
• Represent different textures
  – Fluffy objects
  – Cross-sections
Shading techniques

• Combine styles
• Render imperfections
  – Smooth v. rough
Shading techniques

• Combine styles
• Render imperfections
  – Random dots and squiggles
Shading techniques

- Combine styles
- Watercolor, “organic”
- Sharp, hard lines, “synthetic”
Shading techniques

• Combine styles

Shading techniques

• Basic styles
Shading techniques

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Shading techniques

- Now you do it...
  - Thick v. thin lines
  - Dots, cross-hatching, ‘eyelashes,’ Snodgrassing
  - Raised lesion
  - Depressed lesion (ulcer)
  - Laceration
Shading techniques

Colon
Liver
Spleen
Kidney
Scapula
Vertebra
Femur
Heart
Stomach
Small bowel