



# Non-Photorealism

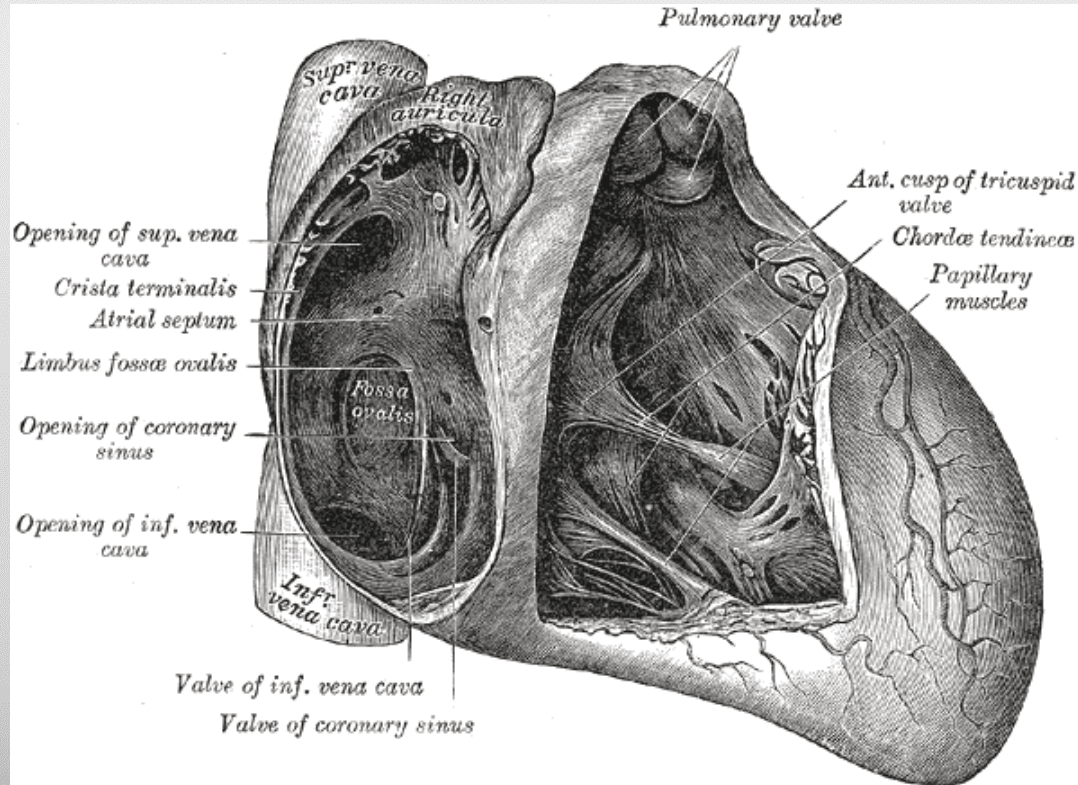
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# What Will We Learn?

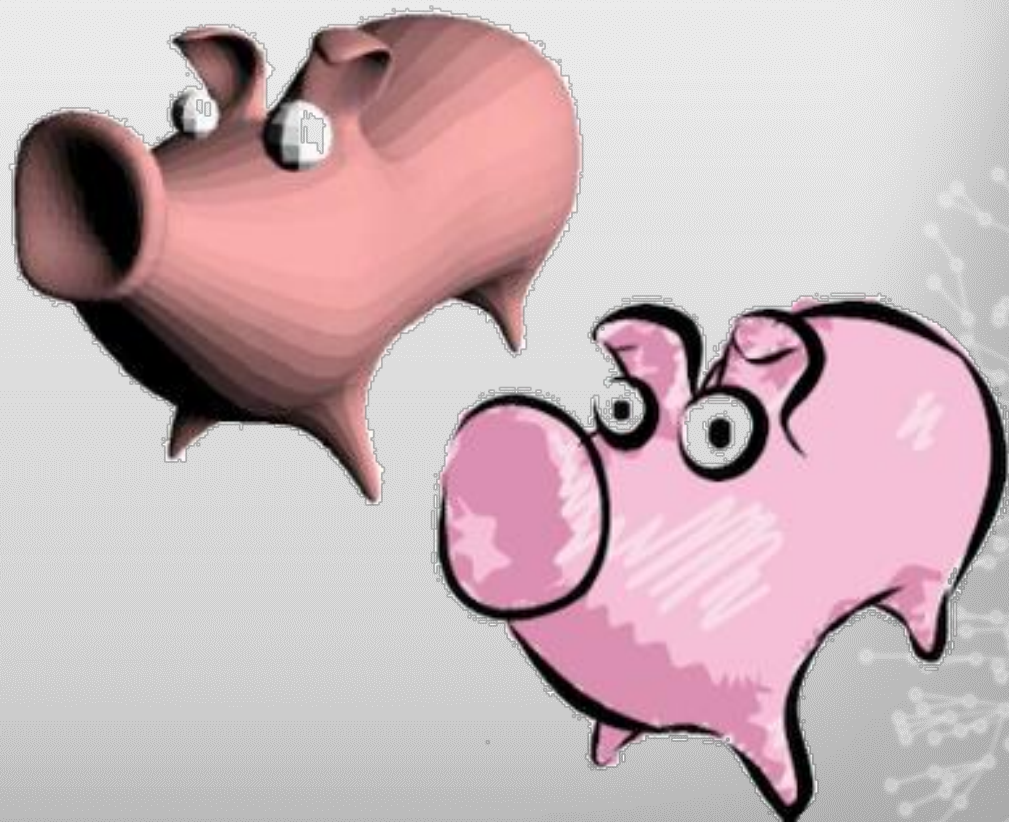
- Why do we still need illustrations when we can photograph or render everything?
- How can I render a cartoon or an illustration?

# What's Wrong with Photorealism?



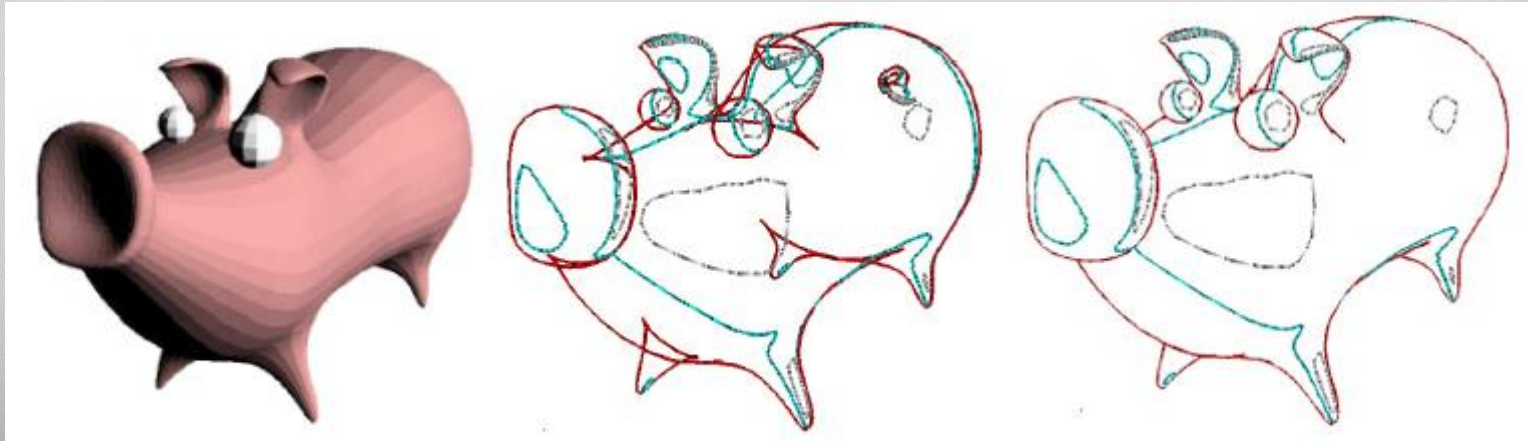
# Non-Photorealistic Rendering

- Departs from the limits of photorealism to better communicate visual information
- Uses concepts from art instead of physics



# Silhouette Curves

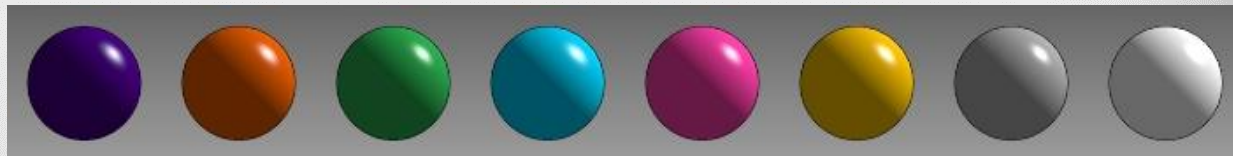
- Constructed from edges shared by both front-facing and back-facing mesh polygons
- Also include boundary edges
- Remove hidden lines



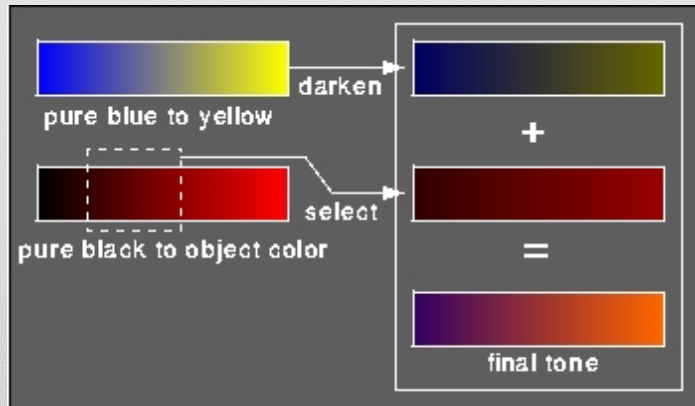


# Non-Photorealistic Lighting

**Photorealistic  
Lighting:**

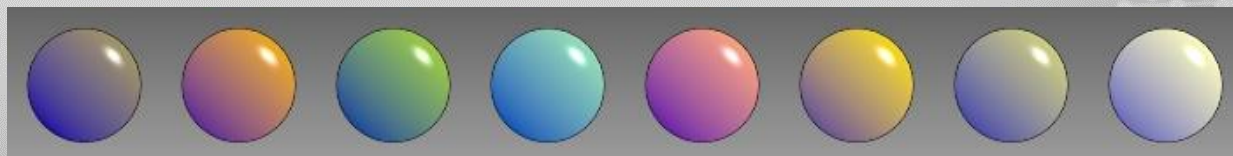


**Create a cold-  
to-warm color  
lookup table:**



Amy Gooch, Bruce Gooch, Peter Shirley, Elaine Cohen. A Non-Photorealistic Lighting Model For Automatic Technical Illustration, Proc. SIGGRAPH 98.

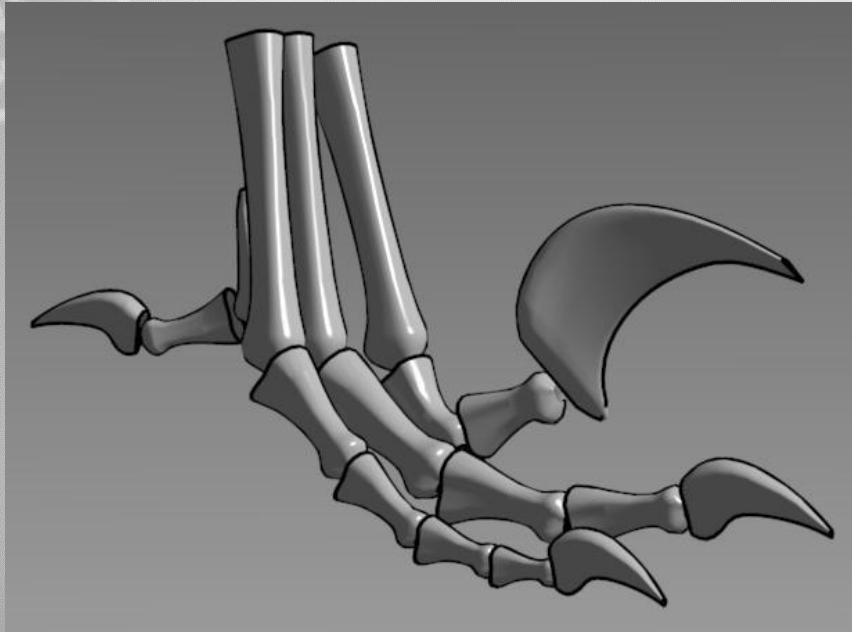
**Non-Photorealistic  
Lighting:**



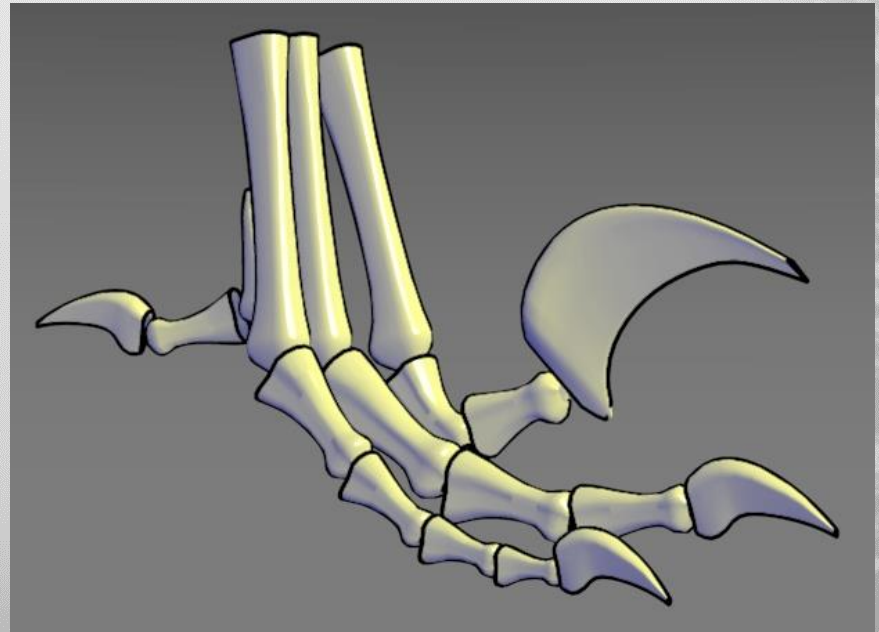
# Non-Photorealistic Shading

Sometimes, non-photorealistic pic can help us better examine the detail of the texture etc

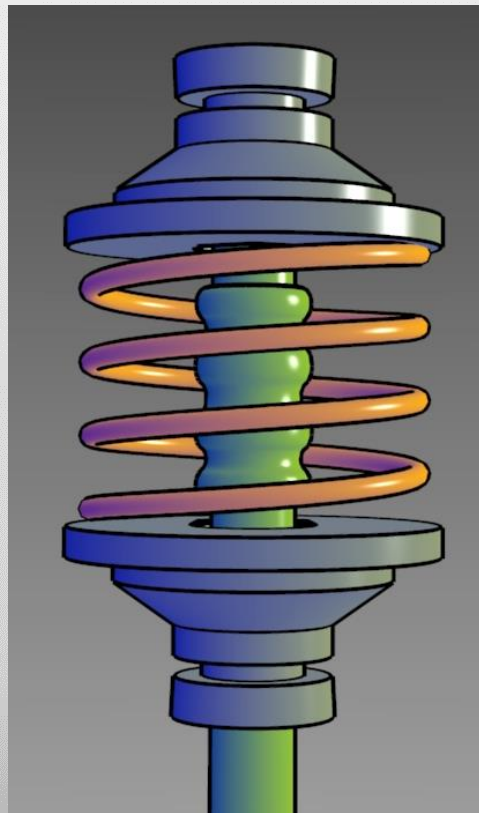
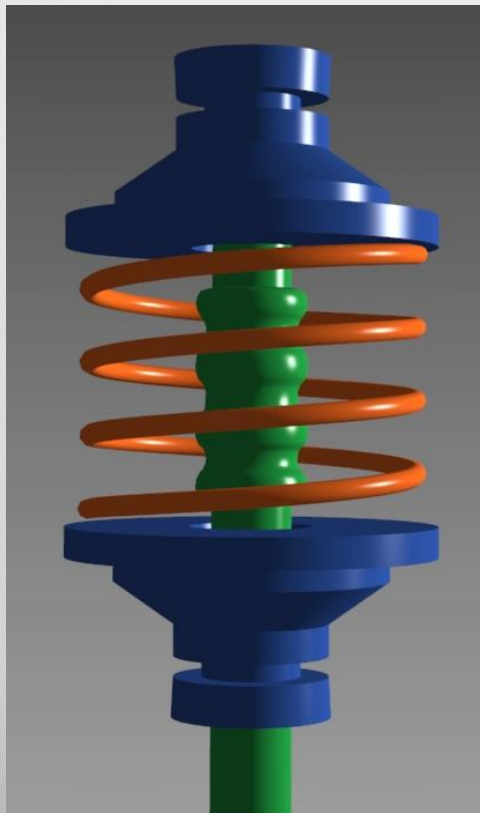
**photorealistic**



**non-photorealistic**



# Non-Photorealistic Renderings





# What Did We Learn?

- Photorealistic rendering is based on the physics of light whereas non-photorealistic (or artistic) rendering is based on psychology of perception
- Non-photorealistic rendering is based on contours instead of surfaces
- Non-photorealistic shading makes it easier to communicate shape without complex lighting