

Why is it so hard? So Many Reasons!

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Changing Lighting

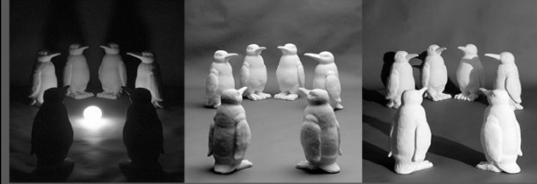
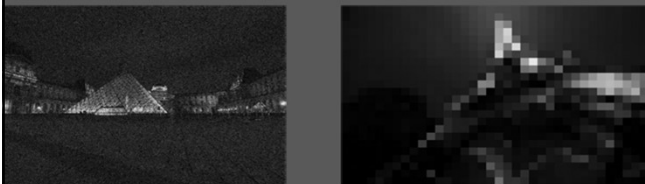


image credit: J. Koenderink

Why is it so hard? So Many Reasons!

Camera sensor & lens limitations



Why is it so hard? So Many Reasons!

Scaling



Why is it so hard? So Many Reasons!

Viewpoint variations



Why is it so hard? So Many Reasons!

• Non-rigid deformations



image credit: Xu, Beihong 1943

## Why is it so hard? So Many Reasons!

Occlusion



image credit: Magritte, 1957

## Why is it so hard? So Many Reasons!

Ambiguous Images/Optical Illusions



## Why is it so hard? So Many Reasons!

Clutter



## Why is it so hard? So Many Reasons!

Object class variations

