

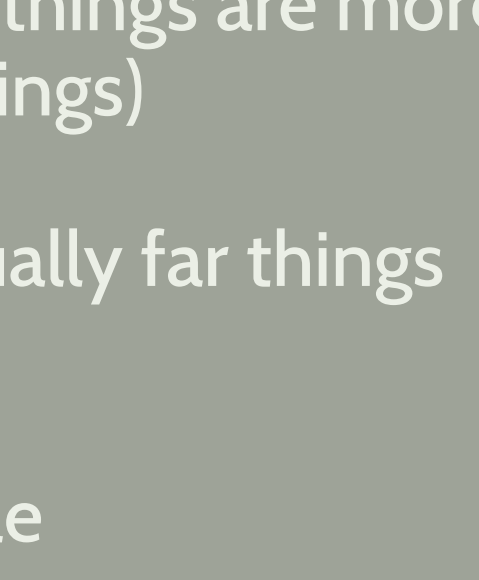
DEPTH!

as a semiotic system
(and/or just to make things look cool)

Marty Elmer, CLES 3/18/2013

WHY DEPTH?

Studies say...



Depth provides visual hierarchy (near things are more important than faraway things)

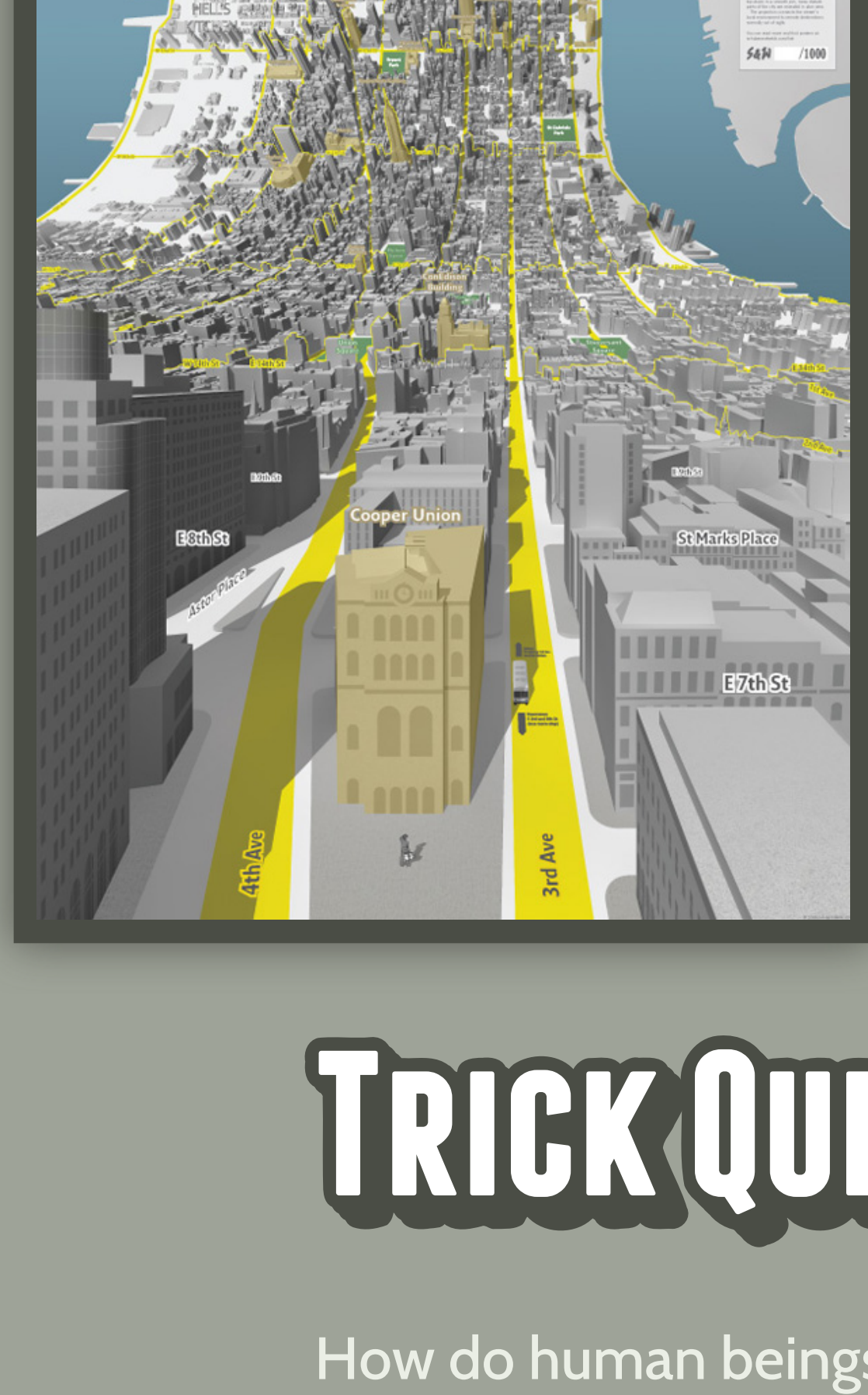
Depth provides gestalt clusters (equally far things get grouped together)

Depth is a visual variable



But also:

Depth adds a rich, tactile, and dynamic feeling to our graphics.



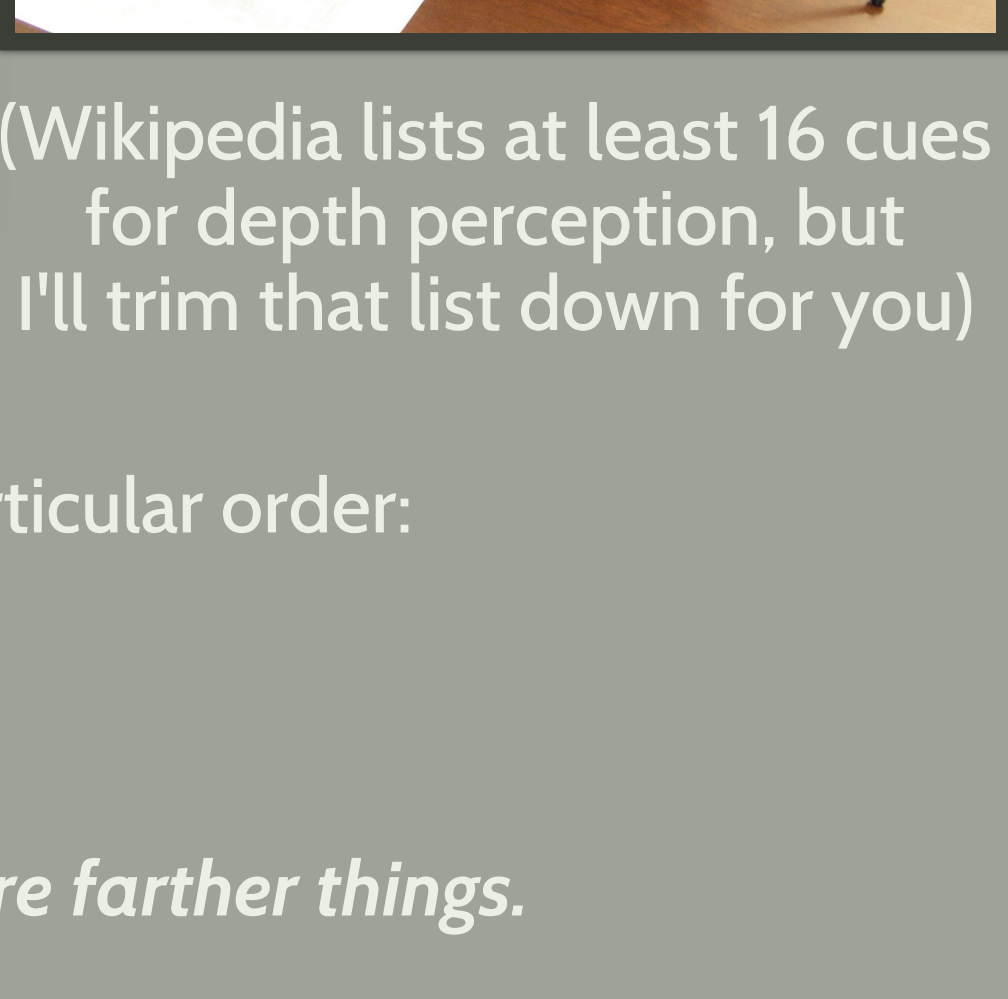
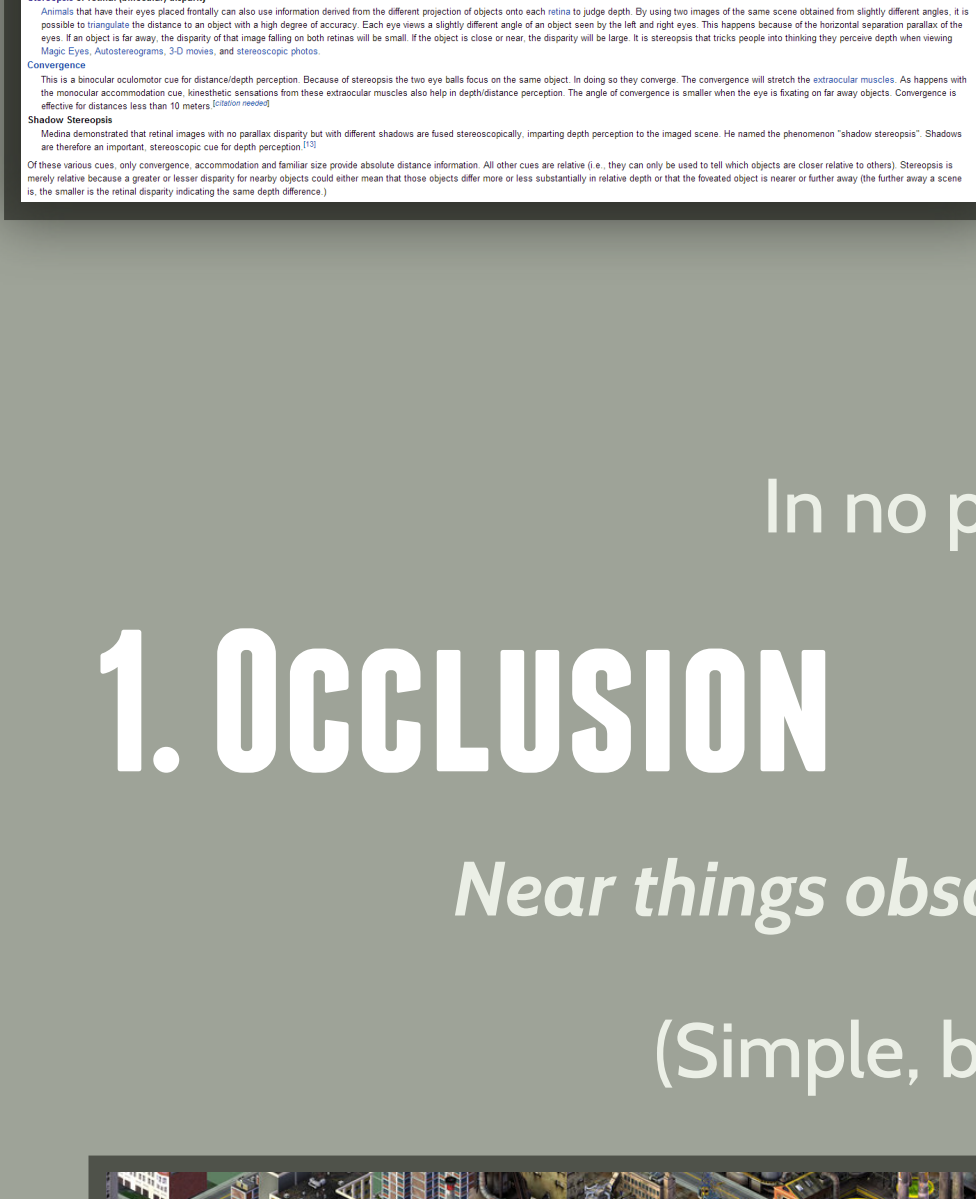
TRICK QUESTION:

How do human beings perceive depth?

...

...

Answer: A multitude of ways, with Binocular vision among the LEAST important (experiment: close one eye, see if you bump into things)



(Wikipedia lists at least 16 cues for depth perception, but I'll trim that list down for you)

In no particular order:

1. OCCLUSION

Near things obscure farther things.

(Simple, but effective.)



2. RELATIVE AND FAMILIAR SIZE

Nearer things appear larger than farther things.



3. ATMOSPHERIC PERSPECTIVE

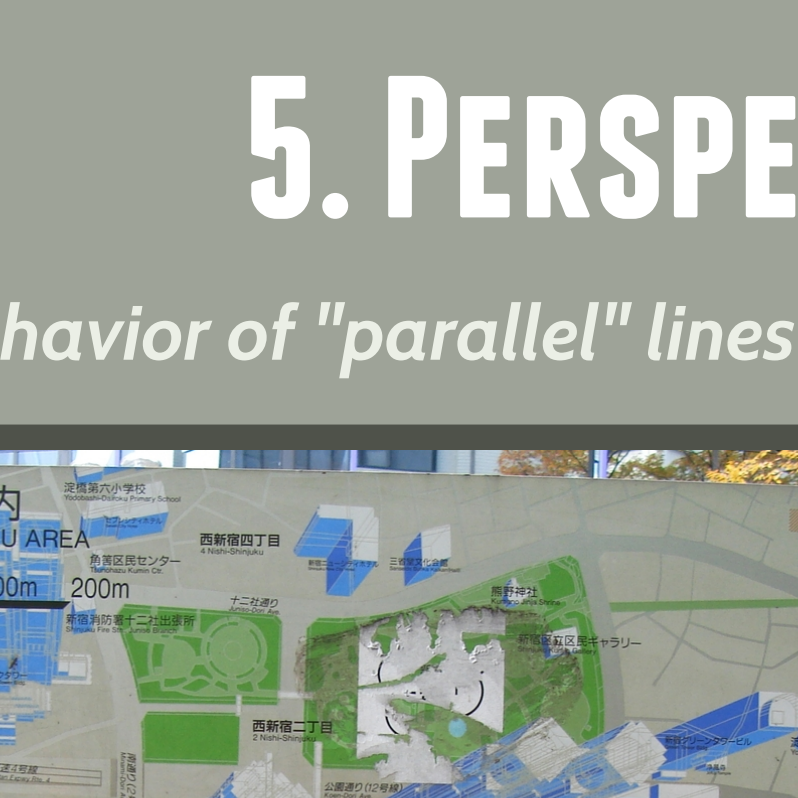
(Very) Farther things appear less saturated, lower detail, and contrast less with their surroundings



4. LIGHTING AND SHADING

The highlights and shadows of an object gives cues about its 3D structure.

This is how drop shadows work!



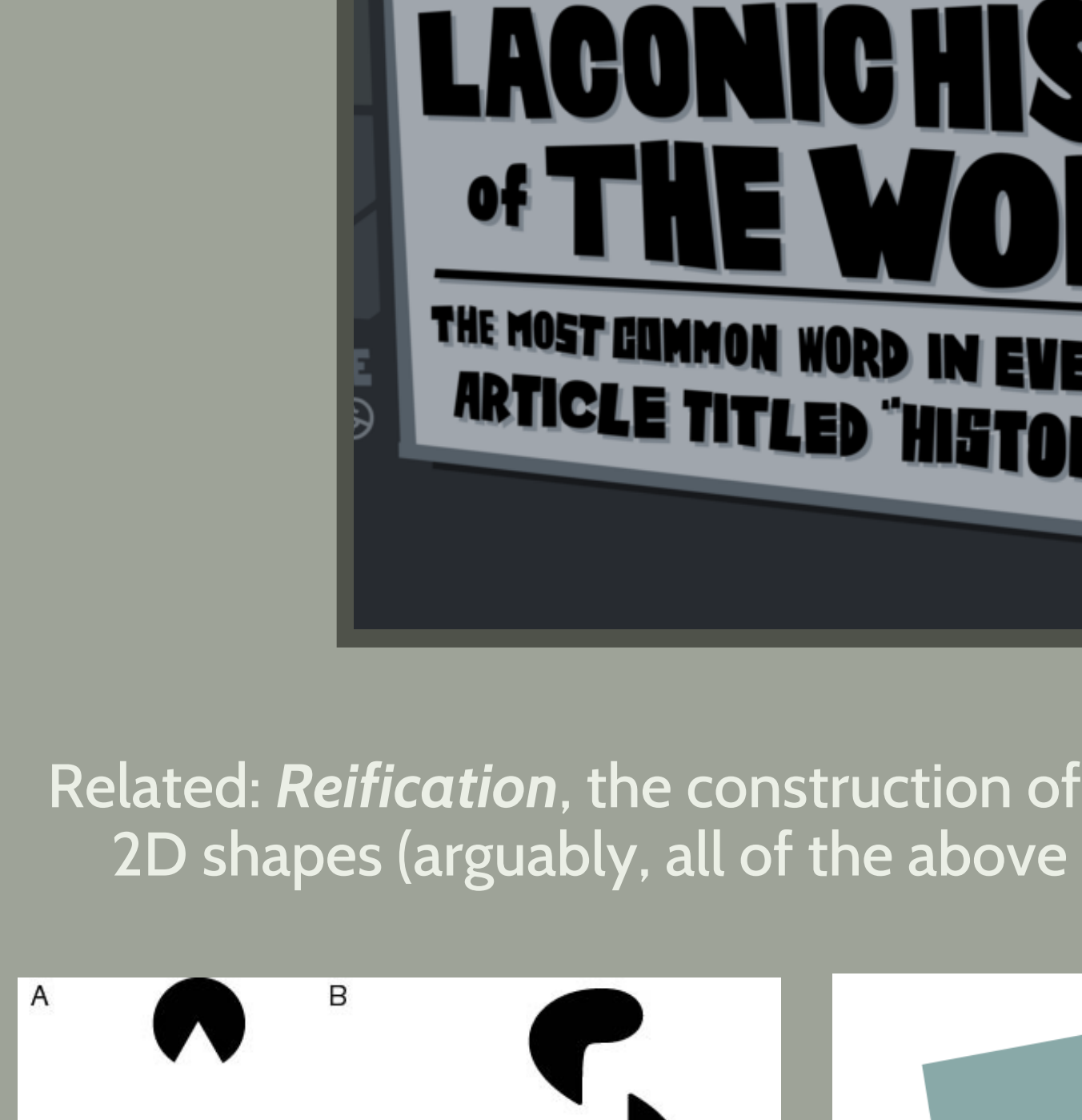
And hillshade!

And beveling!



5. PERSPECTIVE

The behavior of "parallel" lines gives cues about depth.



Related: *Reification*, the construction of 3D objects from 2D shapes (arguably, all of the above are reification)

