Ware Ch 1

The world is its own mirror

emphasis on attention

Resource Limitations

Attention => Pattern Finding

Visual Queries

Rods / Cones

Fear

100 x 10^6 receptors => 10^6 (or less) pathways

Saccades

Bottom up vs. top-down

Low level feature detectors

Visual Working Memory

Easier to redo than to remember

"Start with a visual task analysis
- determine the set of visual queries"
Ware ch2

Pre-ATTENTIVE IS A MISNOMER
→ Inattentional Blindness
△ need to know what to attend to

Contrast - in all features ← something we got wrong w/ salience

What can and can't be tuned for
- Conjunctions
- Not enough contrast
- Not an extremum

Conjunctions - Different in multiple channels
Clarity vs. coherence

Adding is better than taking away

High-frequency motions are attention grabbing

Multi-scale visual search

Search strategies:
△ Scan
Healy Perception Web Page

Applet for pre-attentive conjunction

Pre-Attentive Features
Orientation, length, width, size, curvature
Closure
Density, contrast
Hue
Intensity, luster (?)
Intersection, terminators (T)
Depth cues, 3D orientation
Flicker, motion direction, motion velocity
Lighting direction

Pre-attentive boundary detection

Theories of pre-attention
Colin Ware (it's not pre-attention) - builds on all
Feature Integration
Textons
Similarity theory, Target/Non-Target vs Non-Target variance
Guided Search - binning
Bottom-up - local contrast, top-down - feature requests
Boolean Map Theory

Does non-preattentive mean:
Scales w/ distractors or just had
What happens post-attention
Seems like pre-attentive info is thrown out

Wolfe's experiments - you don't learn basic visual features

Feature Hierarchy
Colors over shape

Change Blindness
Attention to detect changes - necessary, but not sufficient
For 2/15

Popout Phenomena
  Contrast
  Salience
  Dominance
  Theories

why do we care about what stands out?

not so clear cut: contrast, ...

Salience in pictures
  vs. importance
  in retargeting

Comparison
  what makes change blindness hard

In design
- what should be found quickly
- highlighting: better to add than take away
- how to order

  perceived complexity
  spatial grouping

Integral vs. separable cues