Perception: Constructed or Directed?

- Perception as (re)constructed from features vs. perceived directly.
  - Akin to difference between sensation and perception
  - Top-down and Bottom-Up Processing
Perception: Constructed

Direct Theories
- Gibson’s direct perception
- Optic Flow, Textured Gradients, Affordance

The Unexpected Visitor by Repin

Perception: Constructed
- Questions about face
- Eye movements
- What does this suggest?
Template Matching Theory

- Template Theory (e.g., Neisser, 1967)
- Storage and Utilization
- Type of Theory
- Correct?

Theories of Visual Perception

- Feature Theory
- Type of Theory
- Correct?
Theories of Visual Perception

- Perceptual Confusions
  - What do they mean?
  - Evidence for theory
  - Problems?

Illusory Conjunctions

- Confusions?
- Implications

Pritchard

- Image on retina
- Behavior of the features
- Implications
  - Hubel & Wiesel

Feature Detectors?

- Hubel & Wiesel (1959, 1962) – Cat studies
  - Bug detectors in ganglion cells of frog retina?

http://www.youtube.com/watch?v=IOHayh06LJ4
Find the ‘Z’ in the following:

<table>
<thead>
<tr>
<th>ODUGQROCDUGO</th>
<th>MXIVEWVEWMIX</th>
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<td>CGUROQCDURQ</td>
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Treisman’s Theory

Slap the Desk when you See the GREEN CIRCLE
Treisman's Theory
- Features
- Parallel and Serial Search
- Context
- Attention

Recognition by Components
Biederman (1987)
- Just as letters are composed of lines in various orientations, more complex objects are composed of simpler shapes.

Geometric Ions (GEONS)
- Each sub-object is classified into one of 36 different categories (GEONS)

Gestalt Principles
- Different kind of visual theory
  - Reconciliation with previous theories
  - Examples
Gestalt Principles

Speech Perception
- Features
- Perceptual Confusions
- Universal?

Speech Perception
- Place of Articulation
  - K --- back of the throat
  - P --- lips
  - T --- behind the teeth
- Voice Onset Time = VOT
  - K, P, T = Unvoiced
  - G, D, B = Voiced
  - B and P differ only in VOT (place of articulation is the same)

The Organs of Speech

Speech Perception
- Difference between B & P
- What about an early P and a late B?
- Categorical vs. Continuous perception

Eimas and Corbit
Speech Perception

- Phonemic Restoration Effect (Warren, 1970)
  - Phonemes and Features
  - Sentences
  - Top-down and Bottom-up Processing

Word Superiority Effect (Reicher, 1969)

- Brief Presentation
- When is performance better and what does this mean?
- Why is this surprising?

Word Superiority Effect

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Similarities between Visual and Speech Perception

- 1. Intake
- 2. Decomposition
- 3. Addition
- 4. Categorization
- 5. Organization

Face Recognition
Bruce and Young’s Model

Evidence
- Diary study (Young et al. 1985)
- Name Generation
- Soldiers with Brain Damage (Bruce & Young, 1993)
  - Modular

Subliminal Perception?

Attention and Perception
- Directed perception
- Is there another kind?
- Yes, but be warned…

Unconscious Perception
- Blindsight
  - Patient DB (Weisenkrontz, 1986)
  - What can’t they detect?
  - What can they detect?

Attention and Perception
- Hungry?
- Eat popcorn
Attention and Perception

Unconscious Perception

- Subliminal Perception
- Semantic Priming Effect
- Stroop Color Patches
  - Example:
- Objective and Subjective threshold