Attention

PSY 200

Greg Francis

Lecture 11

How could you not *see it?*

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Attention

- The world contains more information than we can fully interpret or process all at once
- The ability to deal with some stimuli and not others is *attention*
  - not clear if there is an attentive *system*
  - or if attention *derives* from other systems

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Information processing

- Modern theories see cognition as *information processing*
  - much like a computer
- Different systems have different capabilities, capacities, and speeds
- Necessarily, some information is ignored because it is not processed

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Attention

- Part of attention seems to be due to mental effort on your part
  - attending a lecture
  - ignoring whispering around you
- Part of attention seems a natural side effect of mental effort
  - ignoring the "uhs" and "ums" from a speaker
  - ignoring the feel of clothes on your body
- Part of attention seems effortless
  - a loud noise

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Magic trick

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Magic trick

- Now the computer will shuffle the cards and present them again

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Magic trick

Attention as processing

- Mental effort either *is* or *requires* attention
- Consider the following video (Simons & Chabris, 1999)
  - you will see two groups of people wearing either black or white shirts
  - each group is tossing around a ball
  - count how many passes are made by the *white* group

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Drawing attention

- Attention is focused by meaningful stimuli
- Also focused by certain stimulus characteristics, especially changes
  - Flashes of light
  - Movement
  - Color
  - Think of advertising signs
- Example

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Drawing attention

- Suppose these cues were masked by other changing stimuli
- You might not notice the change at all
- Demonstration

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Attention

- Another way to interpret these results is that attention is *necessary* to detect stimulus changes
- Explains how people can "look" but not "see"
  - walking into doors
  - driving into trains
  - detecting changes on a radar screen
  - why magicians use flashes of light!

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Attentional paradox

- If attention strengthens perceptual representations, we should lose perceptual veridicality
  - We might expect what is schematized below
  - But we normally do not experience this
- Attention generally seems to strengthen information about a stimulus that is not *perceptual*

Stimulus Attend red Attend green

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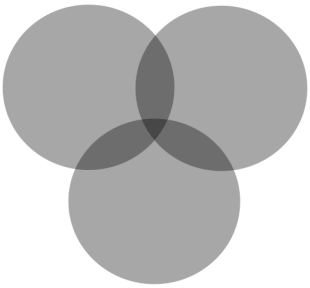
Attentional paradox

- Sometimes attention *can* change perceptual properties
- But then we have an incorrect perception of the properties of the visual scene
- So it is difficult to understand how attention is helping here



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More demos

- If time permits, here's some more demos
  - http://viscog.beckman.uiuc.edu/djs_lab/demos.html
- Field
- Living room
- Phone call
- Lunch conversation (9 changes)
- Paris scene

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Conclusions

- Attention can have very powerful effects
  - help processing of focused on things
  - can cause unawareness of unattended things
- Not precisely defined
  - characteristic of processing?
  - An "extra" system?

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Next time

- Methods of studying attention
- What things influence attention
  - Timing, features
- CogLabs on Attentional blink and Visual search due!
- *Should you pay $59.95 for* Mega-speed reading*?*

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