{slide 2}

In the last several lectures we have discussed perception. We have seen several times that what we experience is not necessarily an accurate representation of our environment.

It turns out that our perception of the world is also incomplete.

{slide 3}

A great of example of this is presented in a video embedded into the same Canvas page that you watch this lecture.

While watching the video of people passing around a basketball, you should count the number of times that the team with WHITE shirts passes the ball.

Pause this lecture and now and see if you can do this.

How many passes did you count? The correct answer 14, and I’m sure that none of you had difficulty doing this. However, did you notice something very strange going on? Many of you did not, but a gorilla actually walked right through the basketball game. Don’t believe me? Try it again.

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This is a great example of the interaction between perception and attention. Remember Feature Integration Theory says that you would not be able to recognize objects unless you attended to them. By focusing your attention on the white team you were unable to recognize the black stimuli even if it were a gorilla.

But what is attention?

William James (1890) was one of the earliest and most influential psychologists. He said, “Everyone knows what attention is.”

But that’s not really helpful.

Attention is the process of concentrating on specific features of the environment or on a certain thought or activity. - Goldstein

{slide 5}

What is concentration? What is being concentrated?

{slide 6}

The world according to Malmberg:

Attention is the selection of information and the application of cognitive resources to that information in order to use it.

{slide 7}

Now that we have a working definition of attention, we might ask how are objects selected? In other words, what is selected?

There are two main hypotheses. The Spatial Hypothesis says attention is like a flash light. Everything falling in its beam is attended to. Given our experience with the gorilla however we may not find this hypothesis too appealing.

Another hypothesis is object-based hypothesis. It says that objects are selected for processing, and spatial issues are irrelevant.

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Here is a great example that illustrates the distinction between the spotlight hypothesis and object-based hypothesis.

In this experiment, two rectangular stimuli were presented, and the subjects’ attention was precued to a location on one of the objects. The subjects’ task was to detect a target stimulus flashed somewhere else on the display.

In this example, the subject is precued to location A, and a target may be flashed in either location B or in location C. Note that locations B and C are equal distances away from location A. Thus, according to the spotlight hypothesis is should be no more difficult to locate the target in position B or C. On the other hand the object-based hypothesis states that it should be easier to locate the target in position B because that rectangle has already been selected. It turns out that subjects were faster to locate the target if it was flashed on the same object that attention had already selected.