

## Teaching listening in the classroom

Basketball and Gorillas:

Using Visual Cognition Research to Introduce the Concepts of Limited Capacity and Attentional Focus

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**Grade level:** Undergraduate

**Keywords:** Limited Capacity, Attention, Schema, Information Processing

### Listening Practice:

**Course title:** suitable for any course that has a unit devoted to listening, social cognition, or information processing; this activity has worked well in both large ( $N = 237$ ) and small ( $N = 23$ ) classes.

**Course level:** adjustable

**Goals:** To illustrate the concepts of attentional focus and limited information processing capacity

**Type / Aspect of listening in focus:** Attention and processing

### Description:

It is a well known fact that individuals are limited capacity information processors (Imhof, in press). That is, we cannot pay attention to all information available in our environments. This is true for visual stimuli as well as auditory stimuli (Cutler & Clifton, 1999), so understanding the concept of limited capacity is vitally important for students of listening. Similarly, when individuals focus attention to some aspect of a situation, other aspects of that situation are neglected. Situational elements that are not attended to and consciously processed may be vitally important for subsequent judgments and decisions; thus, an ability to choose relevant objects of attention is important for competence in listening. This activity is designed to illustrate the limited capacity of human information processing and the potential consequences of attentional focus. Although the development of this activity is my own, the copyright for the video used in the activity is owned by Daniel Simons of the University of Illinois Visual Cognition Lab; the video should be purchased from Viscog Productions to use in the classroom. You can view the video at [://viscog.beckman.illinois.edu/flashmovie/15.php](http://viscog.beckman.illinois.edu/flashmovie/15.php) but this version is not supposed to be used for instructional or other purposes.

## Preparation and Procedures:

This activity should be conducted prior to students being exposed to concepts such as limited capacity, selective attention, selective exposure, barriers to effective listening, or other general cognitive aspects of the listening process. Begin by making three sets of instructions. Provide for enough of each instruction type so that each student is given one instruction and an equal number of each instruction is distributed. When students arrive to class, hand them one of the following:

1. You are about to watch a video that shows several people tossing basketballs. Your task is to pay attention to those individuals wearing a WHITE shirt. More specifically, you are to count the number of times they pass their basketball to other people wearing WHITE shirts. You will be asked for your answer at the end of the video. The person coming closest to the actual number of tosses will win a prize.

While watching the video please remain silent. Do not talk to anyone but pay close attention to the people in the WHITE shirts and their passing the basketball to others in WHITE.

2. You are about to watch a video that shows several people tossing basketballs. Your task is to pay attention to those individuals wearing a BLACK shirt. More specifically, you are to count the number of times they pass their basketball to other people wearing BLACK shirts. You will be asked for your answer at the end of the video. The person coming closest to the actual number of tosses will win a prize.

While watching the video please remain silent. Do not talk to anyone but pay close attention to the people in the BLACK shirts and their passing the basketball to others in BLACK.

3. You are about to watch a video that shows several people tossing basketballs. These people are wearing either a white or black shirt and are tossing a basketball to other people with the same color shirt. Your task is simply watch the video. Don't pay attention to any one group of people. Instead, shift your attention around to all individuals.

While watching the video please remain silent. Do not talk to anyone but pay close attention to all aspects of the video.

Once students have read and understood the instructions, show the video "Gorilla/Basketball" available from Viscog Productions, Inc ([.viscog.com](http://viscog.com)). This video portrays six individuals (three in white shirts and three in black shirts) passing two basketballs back and forth. The individuals in white shirts pass their ball to other individuals in white shirts, and the same is true for individuals in black shirts. Some students will focus on the white shirt team, some on the black shirt team, and some will not be instructed to focus on a particular color and to just watch.

About halfway through the approximately 30 second video, a person dressed as a black gorilla walks from the right of the screen to the middle of the basketball throwers, beats its chest, and walks off the screen to the left. Student who have been told to focus their attention on the individuals with white shirts do not see the gorilla, whereas students focusing on the black shirts and students instructed to simply watch all see the gorilla (which is plainly visible on a second viewing of the video to the entire class).

After showing the video twice (the second time to prove to the students focused on the white shirts that a gorilla did, indeed, walk across the screen), the class discussion can focus on implications of limited capacity and attentional focus on the process of listening. Although discussion should differ depending on student comments and the particular lecture material to follow the activity, it is important to explain the reason for an inability to see the gorilla for those focused on white shirts. Specifically, individuals focused on white shirts ultimately blocked out of their attentional focus anything black in color. This results in sustained inattentional blindness of the gorilla for these students. In other words, white-shirt-focused students were selectively attending to a small part of the visual field which caused them to be unable to attend to other aspects of that field. The instructor is also encouraged to ask students how this might apply to listening specifically and to engage in a discussion about the potential consequences of this phenomenon.

### **Tips and Debriefing:**

1. Mirroring the research using the “Gorilla/Basketball” video, there are some students assigned to attend to the white shirts that do, in fact, see the gorilla. Anecdotal evidence from my own classes suggests that most of these students were not putting forth maximal effort to only focus on the basketball passes, and some indicated a suspicion with the activity at the forefront. Depending on whether white-shirt-focused students notice the gorilla, the discussion can lead to interesting speculation and possible avenues for future research about individual and situational differences that predispose some individuals to attending to more of their environments than others.
2. I suggest making sure students do not share what is on their sheets with other students. Perhaps wait until all students are seated and class is stated to hand out the instructions and make it clear that each student should read his or her sheet without sharing with others.

### **Assessment:**

Certainly, inattentional blindness found solely through the visual channel is not directly transferable to the context of listening. Even so, this activity seems to be a good antecedent for a discussion of limited capacity and attentional focus and their implications for listening. Certainly similar activities that use a range of auditory and visual (and combined) stimuli are welcomed improvements to this.

### References

- Cutler, A., & Clifton, C. (1999). Comprehending spoken language: A blueprint of the listener. In C. M. Brown & P. Hagoort (Eds.), *The neurocognition of language* (pp. 123-166). London: Oxford University Press.
- Imhof, M. (in press). The cognitive psychology of listening. In A. D. Wolvin (Ed.), *Listening and human communication in the 21st century*. Boston: Blackwell.