NIH Award from the National Institute on Deafness and Other Communication Disorders

Principal investigator: Beverly Ann Wright, communication sciences and disorders School of Communication

- **Project:** Learning on Basic Auditory Tasks
- **Start Date:** July 17, 2009
- **Total Award Amount:** $158,683

**How the results of this project will benefit society:**
Because adults can improve auditory perceptual skills through practice, it is thought that perceptual training can be used as a tool to treat communication disorders. However, the perceptual-training regimens currently used are costly in time as well as in financial and human resources. This is due in large part to the commonly held belief that only sensory experiences occurring during active training lead to learning. Through a parent grant, Wright found that task performance is necessary but not throughout the entire course of training. Rather, a portion of the active training can be replaced simply with passive sensory experiences. This combined training will significantly reduce the cost of perceptual training and markedly improve public health.

**The problem the project is trying to solve:**
Millions of people in the United States have a communication disorder, and the majority of these people could benefit from perceptual training. The project will examine the extent to which the effectiveness of training regimens that combine active task performance and passive stimulus exposures changes across the lifespan. This could potentially lead to perceptual training regimens that yield maximum learning with minimal cost in a variety of age groups.

**How this project will work:**
All of the experiments in the parent grant focus on learning in young adults. With this supplemental funding, the proposed experiments will employ adolescents and older adults. Individuals in these more extreme age ranges are frequently referred for perceptual training for health-related issues. Individuals in each age range will be divided between one experimental group and three control groups. The experimental group will be trained to categorize non-native speech sounds (akin to teaching a native speaker of Japanese to distinguish between ‘r’ and ‘l’) using a combination of active task performance and passive stimulus exposure. The three control groups will be trained using only active task performance, only passive stimulus exposure, or will receive no training. Performance will be evaluated before and after training to measure the effectiveness of the different regimens.

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