Research Spotlight

Show me the word!

Dr. Dan Hufnagle is investigating the development of children’s knowledge of sound categories (See November’s newsletter for descriptions of the Building Robby’s House and Da and Ga games, and October’s for the Deer or Tear game). One aspect of Dr. Hufnagle’s research focuses on determining the relationship between children’s developing categorization abilities and their vocabulary abilities. This new game assesses children’s vocabulary levels using the Peabody Picture Vocabulary Task (PPVT-4), which is designed to test vocabulary from 2.5 years of age through adulthood. During the game, the experimenter asks children to “point to the ____.” Children look at a display of 4 pictures and point to the picture that matches the word. For example, children might be asked to point to the sink in the pictures below.

Children begin the task at various levels, depending on their age at the time they are tested. For every 12 words, the experimenter checks to make sure that the child gets more than 4 correct before continuing to the next 12 words, which are a little more difficult. No feedback is given, so children do not know if they choose correctly or incorrectly. The results of the vocabulary measure will be matched to data from other tasks in this series of experiments in order to understand the relationship between sound categories and vocabulary. We predict that children who know more words will demonstrate well-defined sound categories. If you have any questions about this research, do not hesitate to contact Dr. Dan Hufnagle at hufnagle@cmu.edu or 412-268-3647.

Cognitive Control Games

How do children learn to adapt their behaviors to their changing environment? When does children’s ability to monitor and control their own behavior reach mature levels? What factors affect the development of the cognitive side of this important process? These are some of the questions that senior Janelle Higa is investigating in the honors thesis she is conducting on cognitive control, with the support of Dr. Anna Fisher. Cognitive control is an important ability that allows people to adapt their behavior to the changing demands of their environment. This ability has been found to develop very differently in each individual. The purpose of Janelle’s thesis is to investigate social factors that may contribute to variations in children’s development of cognitive control. As a part of the study, she will ask parents to complete a brief survey to determine whether children’s level of cognitive control in her tasks correlates with family demographics and styles.

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**Research Spotlight continued …**

**• The Sorting Game**
Janelle’s first of two games is designed to measure cognitive control via a computer-based card-sorting task. Children are shown cards on a computer and asked to sort them either by shape or color first. They are then asked to switch rules to sort by the opposite dimension. The example to the right shows the shape dimension of the card-sorting game. The child would be asked to sort the middle card into the either the fish or star pile.

**• The Waiting Game**
Janelle’s second task is a standard Delay of Gratification task. Children are given the option of eating an appealing snack immediately or waiting for five minutes. They are told that if they wait for the full five minutes, they will receive a larger amount of the snack. This task tests children’s ability to cognitively control their behavior in order to receive a greater reward in the future. The Delay of Gratification task is a well-documented research tool, shown to be predictive of later success. The child on the left is deciding between eating the snack in front of her immediately or waiting to receive a larger amount of the snack. View an informative video about this standard task at [http://www.youtube.com/watch?v=amsqeYOk-w&feature=related](http://www.youtube.com/watch?v=amsqeYOk-w&feature=related).

**Undergraduate Spotlight: Getting to Know You !!**

My name is Laura Pacilio. I am a senior psychology major. In addition to working at the Children’s School, I also do research in the Human Computer Interaction Institute and am a member of Strong Women Strong Girls, an organization where I am a mentor to elementary school girls in the Pittsburgh area. After I graduate this spring, I am planning on attending graduate school in counseling psychology or social work.

I have worked at the Children’s School for two years and have many fond memories and hilarious stories from my time there. Some of my favorite Children’s School memories are: learning how to make play-dough, gym with Ms. McMichael, hearing all the children’s creative Halloween costume ideas, and watching them act in their class plays during the theater unit last year.

Working at the Children’s School has been one of the most rewarding experiences of my college career; and though I am excited to graduate this spring, I am sad that this will be my last year working with all of the phenomenal children and staff!