Research Spotlight

The Mapping Game

One of the groups in Dr. Anna Fisher’s Research Methods class is revisiting Piaget’s and Inhelder’s famous Three Mountain Experiment, investigating perspective taking in young children and how it develops with age. In the Mapping Game, researchers present the child with two different model cities, one containing 2 buildings and the other containing 6. A stuffed animal is moved around the city, stopping at each of the three sides of the model, not including the side the child is facing. The child is given 4 pictures (one from each side of the model) and asked to tell the researchers which one is the one that the stuffed animal would see. One trial from each side of the table is done for the first model city. Then, the second model city is introduced, and the task is repeated. Similar to Piaget’s initial study, the only objects in the model are the buildings, so children are assessed based on their ability to take a new perspective on the angle, order, and positioning (left-to-right) of the various buildings at a new viewpoint. This is important because, unlike Piaget, the researchers predict that children can successfully complete the task with fewer objects, showing that they do have some ability to take others’ perspectives and are not completely egocentric.

Sample pictures from opposite viewpoints:

The Puzzle Game

Another group is studying the effect of working with others to complete a task versus working alone. As children develop, they become more able to engage in pro-social behavior and work together with peers towards a common goal. During the study, researchers compare children’s performances on two different puzzle tasks (pictured below) to see if their performance time is faster when they work with a partner than when they work alone. One puzzle task is more physical, where there isn’t as much need to communicate and cooperate. The other puzzle involves more strategy, and communication is needed for the pair of children to effectively complete the task.

In the study, some children work on the puzzles individually; these children complete both the physical puzzle as well as the strategic puzzle without any help from a peer. Other children work in pairs to complete the puzzles; these children complete both the physical puzzle and the strategy puzzle collaboratively with a peer. Based on the existing evidence that children’s friendships, compared to non-friend relationships, help to support more effective task performance and more pro-social activity, the researchers predict that children who work in pairs will have a higher performance rating than children who work individually. If this result is obtained, it will provide further evidence suggesting that working collaboratively with peers supports more effective task performance.
Research Spotlight, continued …

The Moving to Music Game

This group of undergraduates is studying motor skill development as it relates to background music and speed/accuracy. Students are investigating the possibility that playing faster music while children perform a motor skills based task would increase the speed and efficiency at which they are able to perform the task.

Each child plays this game twice on the same day. Once, children are asked to move cotton balls from one container to the other with tweezers while listening to fast music. The other time, children move the cotton balls while listening to slow music. The piece of music utilized is a 1-minute recording of Mozart’s Concerto No. 20 in D minor K.466, for Piano and Orchestra, Romanze. The fast version was sped up half-tempo, and the slow version was slowed down half-tempo. We expect that children will be able to successfully move more objects between containers within the allotted time period when the faster piece of music is played in the background, rather than the slower piece of music.

The goal is to discover what environmental conditions are ideal for children when performing motor tasks on a daily basis. For example, when children must clean up their play area by moving all of their toys into a bin, the children may complete this task faster if fast music is played rather than if slow music is played.

The Pointing Game

Another group is studying story memory to determine if hand gestures, specifically finger pointing, will help improve children’s memory. The task involves reading a story called Biscuit Goes to the Fair, by Alyssa Satin Capucilli, and investigating whether there is a difference in information retention if the child pointed to specific images, such as characters or objects in the story, versus if the researcher pointed to the images while reading. After the story is read, the child answers 10 short object-oriented questions about the book, 5 questions based on images that the child pointed to, and 5 questions based on images that the experimenter pointed to. For each question, the tester presents the child with 3 possible image choices. The coder then records the number of questions that are answered correctly. During one half of the story, the child listens and watches the tester point to objects in the story. During the other half, the child plays a more active role in the storytelling process by pointing to objects in the story themselves. Based on existing evidence that a child’s memory capacity will increase when active in the learning process, researchers expect children to answer more questions correctly when they are able to point to the objects themselves during the reading. If this result is obtained, it will provide further evidence that children retain more information when playing an active role in their learning experience.

NOTE: Three other groups are still finalizing their studies, but families will receive study descriptions via the children’s backpacks on the day they participate as usual.