



# Childhood Cognition & Learning Laboratory

Annual Newsletter

Fall 2005



## What We Do

We're interested in how children's thinking changes and develops throughout the preschool, and early school, years. We are currently studying children's planning and future thinking skills, as well as their understanding of their own and other people's mental states - for instance the understanding that people have "beliefs," "desires," and "intentions" - and, more importantly, that we draw on these mental states to explain and predict people's behaviour. We invite parents of preschoolers and early school-aged children to bring their child into our lab to play "child-friendly" games with us. By watching how children play these games, we learn a great deal about children and their thinking.

**We are currently exploring the following general questions:**

- 1) What do young children know and understand about the future? For instance, can young children plan sequences of actions to achieve a future goal? Or, can young children think hypothetically about a future situation (e.g., going to the park) and how this situation may cause them to feel?
- 2) How do perspective-taking skills change across the preschool years? For instance, how adept are young children at

## Our People

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understanding that although they may feel a certain way (e.g., tired, thirsty) or feel a certain desire or emotion (e.g., happiness), others may have different internal states, desires and emotions?

- 3) How do children make sense of their own, and others', actions in contexts in which the cause is not always clear? For instance, do young children understand that mistaken beliefs can lie at the root of action?

## LAB STUDIES

### "Candles in the crayon box!"

In this study, we are examining various aspects of young children's (3- and 4-year-olds) understanding of "false beliefs." Younger preschoolers tend to have difficulty with the concept of "false belief." For instance, if you show a 3-year-old a crayon box, she will have no difficulty telling you that she thinks there are crayons inside. However, if you then show her that the box contains candles, and then ask her what she first thought was inside (before you opened it), she will likely state



"candles!" Researchers have been interested in why young children make this error, while older children (typically 4 years of age and older) do not.

In our study exploring this phenomenon, children are given tasks similar to the crayon box one described above. Children are also given a variation on this task: they are shown a character (e.g., a young girl on a diving board) and are asked to state their belief about what she will do next. The character then behaves differently from what the child had expected. Again, we ask children to re-state their initial belief about the character's intention (i.e., "What did you think she was going to do?"). The main goal of this study is to explore how different contexts (e.g., the prediction of the contents of a box vs. the prediction of someone's action) may influence children's ability to acknowledge prior false beliefs. This study is still underway. We will let you know in our next newsletter what we have found out!



### "Taking Perspectives and Anticipating the Future"

This study focuses on the development of anticipation and perspective-taking skills in preschoolers. To explore perspective-taking skills, we give the following type of task: Children are given a snack (e.g., pretzels). The goal of the snack is to make children more thirsty than they are hungry. This is because children will then have to predict what another person (e.g., a same-aged peer) would like to have: water or pretzels. We're interested in how much children's *current desire* (in this case, water) affects their predictions about other people's desires. To assess anticipation skills, we ask children to plan how they can solve different types of problems (e.g., remembering to bring a net to get a frog out of a bucket) or what action needs to be performed first to achieve a goal (e.g., which piece of an ant costume needs to be put on first). Please check out our next newsletter for the results of this ongoing study!



## "What will I want tomorrow?"

Two groups of children participated in this study: 3- to 5-year-olds, and 7- and 8-year-olds. Children were given a snack (e.g., pretzels) in



order to make them thirstier than they were hungry. Children were then asked to make a decision about what they would like to have for *tomorrow*. We were interested in how much children's *current desire* (in this case, water) affects their choices for the future.

**Results.** We found that preschoolers were very influenced by their current desires. For example, most preschoolers preferred pretzels to water but, when thirsty, and asked about what they would like *tomorrow*, most children chose water, rather than their preferred choice: pretzels. In contrast, the older children (the 7- and 8-year-



olds) were better at overriding their current desire to consider their future one. The results of the preschool study will be published next year in the journal *Psychological Science*.

## "Future-oriented Skills"

The goal of this project is to learn more about the development of future-oriented thinking in preschoolers (3-5 year olds). There are three types of tasks that children are given: planning tasks, delay of gratification tasks, and "anticipation of future state" tasks.

During the *planning tasks*, children are asked to think ahead and plan a course of action. In the *delay of gratification tasks*, children must delay receiving a smaller reward *now* in favour of a larger reward *later*. Finally, in the anticipation of future states tasks, children must think about how a future situation (e.g., walking in the hot sun) may result in a future state (e.g., thirst).

**Results.** Our results thus far indicate that these skills are steadily improving during the preschool years. However, these 3 different types of tasks do not show the same developmental pattern. For instance, the planning tasks appear to be more difficult for the children than the other tasks. This may be because they have an important problem-solving component that is generally more difficult for children to contend with.



## Explaining the Actions of Self and Other

In this study, children are shown various situations that change unexpectedly. For instance, a child may see a stuffed dog and are told that there is a bone that they can get to feed the dog. In the child's absence, the dog is removed and a mouse appears. Children are then asked why they went to retrieve the bone. We are interested in how children explain their actions in this type of situation.



For instance, do they remember that the dog was the reason they went to get the bone? We have also begun running a study in which children must explain another individual's action in these same situations. The data collection for these studies is still ongoing. We will report our findings to you in our next Newsletter!

## **Publications and Presentations**

We've had a busy year presenting our work at various research conferences and publishing our results in psychology journals. Here is a sampling of some of our conference presentations and journal articles:

- Atance, C. M., & Meltzoff, A. N. (in press). Preschoolers' current desires warp their choices for the future. *Psychological Science*.
- Atance, C. M., & Meltzoff, A. N. (2005). My future self: Young children's ability to anticipate and explain future states. *Cognitive Development*, 20, 341-361.
- Atance, C. M., & Meltzoff, A. N. (April, 2005). *How preschoolers' current states affect their decisions about the future*. Poster presented at the biennial meeting for the Society for Research in Child Development Conference, Atlanta, Georgia.
- Atance, C. M. (November, 2004). *The emergence of episodic future thinking in humans*. Paper presented at an Invited Symposium at the annual meeting of the Psychonomics Society, Minneapolis, Minnesota.

Thank-you so much for your interest in our research! We would not be able to conduct this research and make the discoveries that we are making without you and your child's help! If you have any questions please do not hesitate to contact us via e-mail at [ccll@uottawa.ca](mailto:ccll@uottawa.ca) or by phone at (613) 562-5800, ext. 4475. Future newsletters will also be available on the CCLL's **Website** at the following address:

<http://www.sciencessociales.uottawa.ca/ccll/>

We look forward to seeing you again soon! And, if you've not yet come in for a study, we look forward to meeting you!

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