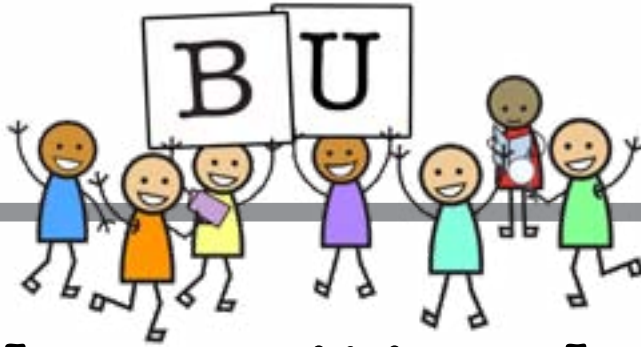


**FALL
2012**



child cognition lab

at boston university

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New grant allows for four years of evolving minds

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Recently completed studies and findings

More about our recently completed studies and our findings.

Pg. 2 and Pg. 3

What do our studies entail?

Read about what to expect when you and your family visit our lab.

Pg. 3

Who's who?

Meet our summer research team!

Pg. 4

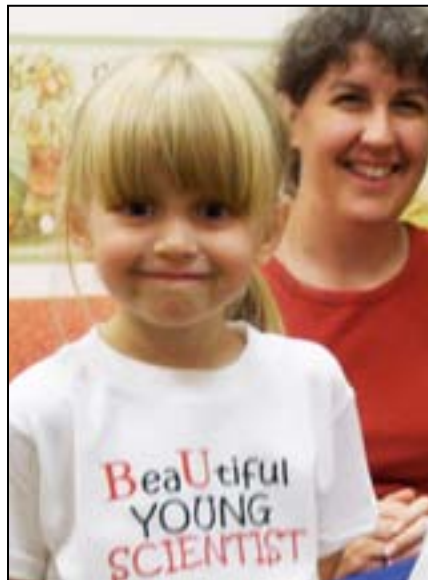
Plus

FAQs **Pg. 2**

Special thanks **Pg. 4**

Contact us!
We'd love to hear from you!

617-358-1738
childlab@bu.edu



An excited participant grins after helping with a project and receiving a prize.

Understanding how animal populations change over time requires understanding a complex biological process. While high-school science education teaches students how natural selection occurs, adults retain misconceptions about this process. Where do these misconceptions come from?

Can an early science education help us correct and avoid common misconceptions later on in life? If so, how would we teach children about such complex scientific concepts?

The CCL is delighted to have received a grant for a four-stage research project aimed at developing classroom materials to help children learn and retain complex biological information from a storybook. By introducing children to biological processes through a familiar storybook format, we hope children will gain a basic understanding of these processes. We expect this early learning to provide a foundation for having an accurate understanding of complex biological processes throughout adulthood.

The project is currently in its second stage and is scheduled to progress through the next two years.

FAQs

What are the ages of the children you study?

Generally children from 2yrs of age to 8yrs of age.

How long do the studies take?

For younger children, studies last only 10 - 20 minutes. Our studies for older children studies can be 20 - 60 minutes long.

When can we visit?

During the week we are here whenever it is convenient for you! Most of our visits occur between 9:00am and 5:30pm. Also ask us about our weekend availability!

Can I bring my other children with me to the appointment?

Yes! Siblings can play in a separate room with you or our friendly research assistants.

We'd love to hear from you!
617-358-1738

Completed studies and recent findings

The designing mind.

In a study in our lab, young children were given pairs of objects to explore and were asked which object had been designed for a given purpose (e.g. "Which one was made for crushing popcorn?"). This study found that by 4yrs of age children have an adult-like understanding that an object's physical structure is related to what a tool maker designed the object to do. Conversely, 3y-olds tend not to reason about what the object was *made* to do and instead only use an object's structure to decide what it *can* do. This shows that children have a sophisticated understanding of the structure/function relationship by 4yrs of age, earlier than previously thought (2011, *Journal of Cognition & Development*).



Forget-you-fours.

The designing mind study showed that by 4yrs of age, children understand that an object's physical structure is related to what it was designed to do. Are children's evaluations of new objects influenced by information they receive from other people? In this study, 3yr-olds and 4yr-olds watched a video in which two people (Mrs. Red and Mrs. White) disagreed with a third person (Mrs. Blue) about the function of an unfamiliar object. Children were asked with whom they agreed: Mrs. Red and Mrs. White (the majority) or Mrs. Blue (the minority). If *both* the majority and minority opinion were equally plausible, children were more likely to agree with the majority. However, if the minority opinion was plausible but the majority opinion was clearly implausible (i.e. there's no way that object could do that!), 3yr-olds agreed with either side, while the 4yr-olds agreed with the minority. This finding shows that once children acquire fundamental knowledge about object design, their tendency to rely on others' opinions for information about objects reduces (submitted, *Journal of Cognition & Development*).



You can't see me but I learn from you.

In this study, toddlers 'secretly' watched an actor use one of two objects to operate a bell. Amazingly, after only 40 seconds of "eavesdropping" on the actor, children learned which object was for bell ringing. Furthermore, we found that 3 days later children still categorized the object as being for bell ringing. This research demonstrates that children can acquire enduring object categories rapidly and without explicit instruction (2012, *Child Development*).

Baby imitation.

Research by Marian Chen, one of our postdoctoral associates, and colleague Sandra Waxman found that at 14 months of age, female (but not male) infants were more likely to imitate an unusual action (turning on a light with one's head) when the action was labeled ("Watch me blick the light!") than when it was not ("Watch what I'm doing!"). This research demonstrates that 14-month-old girls learn from what you say as well as what you do (forthcoming, *Developmental Psychology*).



Yucky, Weird, and Wrong.

Are moral beliefs formed on the basis of negative emotions or factual information? Josh Rottman, a 4th year graduate student at CCL, showed 7yr-olds pictures of aliens behaving in strange ways and asked them whether the aliens' behaviors were "wrong" or "OK". Before asking the children to make their judgments, Josh either filled the room with fart spray and told them the behaviors were disgusting (to elicit a strong negative emotion) or told them that it was really unnatural for the aliens to act the way they were (to provide them with information about the behavior). Josh found that negative emotions and information elevate moral judgments to the same extent. The greatest number of moral beliefs were acquired when emotions and information were combined. This shows that both emotions and information taught to children play a role in how they acquire moral beliefs (2012, *Cognition*).



Scientists see purpose in nature.

"Teleological explanations" explain objects and events in terms of their purpose. While these explanations are correct when talking about, for example, why human-made objects exist (e.g. phones exist for talking), they are not correct when explaining natural phenomena. For this reason, physical scientists normally reject teleological explanations when explaining why things happen in the natural world (e.g. mountains exist for climbing).

But is it always easy for scientists to reject inaccurate teleological explanations? A study in our lab found that, when forced to decide quickly, science professors from top-ranked American universities accepted incorrect teleological explanations as often as humanities professors! This research is important as it demonstrates that while extended education may help reduce endorsement of incorrect teleological explanations, it does not eliminate this tendency entirely (forthcoming, *Journal of Experimental Psychology*).

What happens when you visit our lab!

- 1 Parking is free!**
We'll meet you in the parking garage across the street from CCL.
Parking is free!
- 2 We'll play!**
The person running the study will warm up with your child in our playroom.
- 3 Then the study!**
Your child will then go into the study room with the researcher. You can either sit in the room with your child or watch from a computer monitor in the next room - it's up to you!
- 4 A prize for our helpers!**
All our helpers receive receive a small gift as a thank you for participating!

Thanks to our collaborators!



Awards presented by CCL to our after-school program collaborators. Their hard work and generosity made our research possible! From left to right: **Janai Mungalsingh**, Director of Elizabeth Peabody House; **Nina Vansuch**, Senior Team Leader, and **Adetunji Onamide**, Director of Summer Boys & Girls Club; **Jeannette Pizarro**, Director; **Celine Rodriguez**, and **Ana Ramos** (not pictured), after-school staff at Summer K1-K2 after-school program; and **Jessica Rubecindo**, Director of Condon Boys & Girls Club.

Meet our summer team!



The summer research team at Lucky Strikes during the end of summer lab trip. Listed from left to right: (back row) **Natalie Emmons**, Post-doctoral Researcher; **Becca Seston**, Lab Manager; **Laura Lockwood**, Research Assistant (RA); **Josh Rottman**, Graduate Student; **Deb Kelemen**, Principal Investigator; **Elisa Jarnefelt**, Visiting Graduate Student; **Hayley Smith**, RA; **Marian Chen**, Post-doctoral Researcher; (front row) **Allie Romano**, RA; **Annie Fast**, RA; **Laura Jean Nelson**, RA; **Maddy Levitt**, RA; **Kelsey Hunt**, RA. Not pictured: **Meia Chita-Tegmark**, Graduate Student; **Jenny Tollefson**, RA.

The CCL is grateful to all the families who participated in our research! Without your efforts, our research would not have been possible!

Since 2000, families from the Boston area have been helping us answer questions about children's development. We love meeting new families and those who visit our lab have a great time participating in our studies because they are designed as fun games. To find out more, feel free to check out our website:

www.bu.edu/childcognition

**Are you interested in our research?
Would you like your child to participate?
We'd love to hear from you!**

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