Dear Parents and Families,

Welcome to the annual publication of the Child Learning and Development (CLAD) Lab’s newsletter! This summer, we are celebrating our sixth year of research in the lab, and are excited to share some of our recent work with you! This newsletter reports on several of the studies conducted during the past year. I hope you enjoy reading about this work, especially the studies in which you and your children participated.

Thank you for participating in the research being conducted in the lab. Without your support and participation, I would not be able to carry out my research or train the next generation of developmental scientists.

To keep up to date on all things CLAD Lab-related, you can visit our Facebook page at www.facebook.com/cladlab, follow us on Instagram at amherst_clad, or visit our website at bitly.com/cladlab. I hope to see you all in the lab again soon!

Carolyn Palmquist
Director, Child Learning and Development Lab

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Research Updates

Do children’s personalities affect their trust?

For many years, social psychologists have been interested in a phenomenon known as the hostile attribution bias. Both school-aged children and adults who have this bias are more likely to interpret ambiguous situations in negative ways. For example, they are more likely to say that someone who knocked over their drink did so intentionally, rather than accidentally. In other words, they assume that ambiguous acts are driven by hostile intentions or motivations. Whether someone has this bias or not has implications for how they will interact with, and develop trust in, others.

Interestingly, very little work has explored this bias in young children, despite its implications for how preschoolers may come to trust and learn from others. Therefore, over the past two years, our lab has been developing a task that can be used to measure hostile attribution bias in young children. In this task, children watch a series of short videos that depict several ambiguous interactions (e.g., one child knocks over another child’s cup of water when reaching across the table). After watching each video, children are asked about the intentions of the actors in the video and whether they are “mean” or “not mean”.

This summer, we have started to explore how children’s responses to these ambiguous
situations align with their skepticism (or lack thereof) of someone who has shared incorrect information in the past. Of particular interest is whether children who have a stronger hostile attribution bias will be more skeptical of someone who has been incorrect in the past (possibly interpreting the incorrect statements as purposefully tricky or deceptive), whereas children who have less of a hostile attribution bias may be more willing to forgive those who have been incorrect in the past (interpreting their incorrect statements as mistakes). We hope to be able to share updates on this research with you next year!

How do religious beliefs affect views on punishment?

This past winter, our lab collaborated with researchers at Appalachian State University and James Madison University to explore parents’ and children’s views on corporal punishment (CP). CP is defined as the use of physical force with the intention of causing pain, but not injury, for the purposes of punishment, correcting, or controlling behavior (Simmons & Wurtele, 2010). The use of CP is a contentious issue in America, and there is a growing body of research that suggests that CP results in an increased risk for behavioral and mental problems for children who experience it. Importantly, many children view CP as unfair, unjust, and ineffective. Nevertheless, CP is still a widely accepted form of discipline, especially within some religious groups. Conservative Protestants, especially those in rural, southern areas, are particularly likely to use CP (Hoffman et al., 2017). Adults from this religious background often view CP as an acceptable and necessary part of successful parenting largely because of their interpretation of the Bible. Many believe in a literal interpretation of the Bible and cite scriptures such as, “Do not withhold discipline from a child, if you punish them with a rod, they will not die. Punish them with the rod and save them from death.” (Proverbs 23: 13—14).

Researchers were interested in exploring whether children from this religious affiliation would be more likely to view CP positively than other children, given they are from a culture in which CP is normal. This study compared preschoolers’ views about the fairness and effectiveness of CP from within and outside of the Conservative Protestant community. Children ages 4 – 5 years-old, and their primary caregiver, heard nine short stories about children who committed common transgressions, and were asked to answer several questions about the appropriateness of using CP as a consequence for each story. Caregivers also answered a questionnaire about their religious beliefs and parenting practices. Interestingly, we found a few important patterns in parents’ and children’s responses:

1) Conservative Protestant caregivers thought CP was more fair and effective than other caregivers,
2) Regardless of background, children were generally more negative about CP, though they thought it would be a good deterrent for particularly serious transgressions,
3) Parents thought minor transgressions were the least deserving of CP, though Conservative Protestant were more tolerant of CP for those transgressions than were other parents, highlighting their strong belief in obedience,
4) Conservative Protestant child-parent pairs’ views on CP were more closely aligned than “other” child-parent pairs. In “other” pairs, parents were more negative about the effectiveness of CP than were their children.
It has been exciting to collaborate with researchers at other universities in order to better understand the role that CP plays in parenting across the country.

Do young children learn strategies from verbal instructions?

In 1995, Brue Hood began studying how young children and toddlers understand gravity. To do so, he created a paradigm he called the “chimney task,” and he presented children with an apparatus (featured above) that included several crisscrossing tubes that ended in different cups. He hypothesized that if children really understood how gravity worked within the constraints of these tubes, they would be able to correctly predict how objects would travel through them and where they would land. Interestingly, he found that children repeatedly made incorrect predictions, stating that the object would “fall straight down” and land in the cup directly below, rather than in the cup that was at the end of the tube into which the object was dropped. Hood called this a “gravity bias.” Since Hood’s discovery, researchers have explored ways to help very young children overcome their innate “gravity bias.”

In a recent study, we found that one way to help very young children overcome their bias is to give them verbal instructions to “imagine” the ball traveling down the tube before predicting where it would land. This visualization instruction alone improves children’s performance, and it is even more helpful than the experimenter providing an explicit rule about where the object will land (e.g. “The ball will fall on the other side.”). A study we completed last fall was designed to tease apart whether or not toddlers have truly gained an “imagination strategy.” In this study, our 2- and 3-year-old participants were given either the “imagine” prompt or control prompt (where they received no extra information about how to solve the problem). We also included two more sets of trials in order to test whether, after a short break, children could remember to apply the imagine instructions on their own accord and whether they could generalize this strategy to other spatial problems.

Contrary to previous work, we found that children were no more likely to make correct predictions when given imagine instructions than when they were given no instructions at all. However, we believe this may be due in part to important differences in how boys and girls used the imagine instructions. Although boys seemed to use and apply the imagine instructions from the very first trial (meaning a majority of boys made correct predictions on every test trial), girls took much longer to apply the instructions (meaning they were less likely to make correct predictions on earlier trials, but improved their predictions by the end of test trials). This finding fits with previous work that has demonstrated sex differences in spatial processing (e.g. Joh, 2016). One explanation for this difference is that boys and girls receive different socialization regarding spatial problems: boys may be encouraged to build and play with blocks, and girls may be encouraged to play with dolls. However, even over the course of test trials in our study, girls were able to pick up on the benefits of the imagine instructions for solving this spatial problem, improving their predictions by the final test trials. This suggests that even brief spatial priming prior to engaging with the tubes task could be enough to improve girls’ use of the
instructions. This would be an exciting new direction for research.

How do facial features affect children’s inferences about others?

Adults frequently use others’ appearance to make inferences about what kind of traits they have and how they might behave in the future (e.g. associating a strong jaw line with a dominant personality). Although children also demonstrate this tendency, our lab was interested in exactly how this process works and develops. In the past, we worked in collaboration with the Infant Cognition Lab at the University of Massachusetts Amherst to determine whether children expect more knowledgeable individuals to have different facial features than less knowledgeable individuals. Specifically, we chose to explore whether preschoolers would be more likely to associate competent-looking features or trustworthy-looking features with people who had behaved in a knowledgeable way in the past. This work showed that children are able to distinguish between competent- and incompetent-looking faces and trustworthy- and untrustworthy-looking faces, but that children only associated knowledgeable behaviors with trustworthy-looking faces. However, these studies did not provide any insight into the mechanism by which children make these associations. Therefore, we are currently interested in understanding if children’s associations are based on the traits depicted in the faces (e.g., competency or trustworthiness), or if children are simply making these associations with the more positive-looking face. To do so, we created pairs of two positively-valenced faces, one trustworthy- and one competent-looking, and asked the children a series of questions to understand their beliefs about the two faces.

In order to create typically competent- and trustworthy-looking faces, we used a computer program to generate faces that had features that adults had previously rated as competent or trustworthy. Four- and five-year-old children were separated into two conditions where they were asked a series of questions about each pair of faces. In one condition, children were asked to make predictions about which of the two faces in each pair would have certain skills (i.e. who would draw the best picture, who would know the right way to use a certain object, and who would be a better sharer). In the other condition, it was made clear to the children that one of the faces was better at a certain task than the other face. Children were then asked which face they associated with better performance in that area (e.g. children are presented with a glove and told that one person thinks the glove is used to cover hands and the other person thinks the glove is used to brush hair. The experimenter then asks, “Which one of these people do you think knows the right way to use this glove?”).

So far, we have found very distinct age differences in how children distinguish between faces. Four-year-olds have shown no preference for competent or trustworthy faces, regardless of the type of question they are asked. This indicates that 4-year-olds are likely unable to distinguish between the faces because both are positive-looking, suggesting that they do not rely on specific traits depicted in the faces when making decisions. Five-year-olds, on the other hand, show a distinct preference for the trustworthy face when asked about who will be the better sharer and for the competent face when asked about who will know the right way to use an object. This shows that 5-year-olds not only associate unique traits with the
How do young children learn to evaluate deception?

For the past few years, our lab has been interested in learning about how children understand deception. From our previous research on this topic, we know that children have a difficult time overcoming deception when other people are the ones deceiving them.

In previous versions of the study we are running now, we explored how children respond to deception from other people. There, children interacted with a “tricky experimenter,” who always told them the incorrect location of a hidden object. Interestingly, we found that 4-year-olds, but not 3-year-olds, were able to correctly interpret the information as deceptive.

In the current version of this study, we wanted to take away the human element of the deceptive interaction to determine whether this might improve 3-year-olds’ ability to identify deception. To do this, we created a “machine,” pictured above, which is a large box that was decorated to appear machine-like, but was actually controlled from within by a research assistant. Of interest was whether children would be less likely to trust this machine than they were a person. To test this, 3-year-olds played a game where the “machine” dropped a ball through one of two clear, crisscrossing tubes. These tubes ended in opaque cups so children could not see where the ball had landed. For some children, the tubes were visible and they could watch the ball as it fell through the tubes (i.e., they had knowledge about the event); for other children, a screen blocked the tubes so they could not see the ball as it travelled through them (i.e., they had no knowledge about the event). In both cases, the “machine” provided incorrect information about the ball’s location. For example, if the ball had fallen into the cup on the right of the machine, the “machine” used its arm to shake the cup on the left, indicating that that was where the ball was located. After the “machine” shook one of the cups, a second researcher asked children which cup they thought the ball was in. Following the game with the “machine,” children also completed tasks to assess theory of mind, which is the ability to take someone else’s perspective, and inhibitory control, which is the ability to stop and make a plan before acting.

Interestingly, we found that the 3-year-olds who interacted with the broken “machine” were much more likely to correctly interpret its information as incorrect than were the 3-year-olds who interacted with the deceptive person in earlier studies. However, we only saw these improvements in those children who could see the tubes as the ball was being dropped, not in the children for whom the tubes were obscured by a screen. Therefore, removing the “humaness” of the interaction did improve children’s performance, but not completely. One reason for this could be children’s inhibitory control. Younger children have limited inhibitory control, so we believe that when the tubes are obscured by the screen, and children can’t see where the ball is going, they
may have more difficulty making a plan to search in the location opposite to the one indicated by the machine. Taken together, this work helps us to say that children’s expectations about people, and their own individual differences, may influence how they come to understand deception.

**Partnerships and Events**

We enjoy ongoing outreach to area communities in order to connect with families with children ages birth to 6. This year we added two new partners to our growing list of community participants. Welcome Hampshire College Early Learning Center and Gorse Children’s Center at Mount Holyoke!

This year, you may have seen us out and about at the Bounce House Festival or at the Movies Under the Stars Series at Look Park. We are always looking for new ways to connect with agencies and families who are interested in supporting science and research. There is new research happening in our lab all the time! Please reach out to us with ideas for new partnerships: cladlab@amherst.edu

**Recent Publications**


https://www.tandfonline.com/doi/abs/10.1080/15248372.2018.1526174

**Popular Press Coverage**


Members of the lab celebrate the end of the 2018 – 2019 academic year. Congratulations to all our graduating seniors!

**Register with us**

If you are interested in learning more about the lab, you can contact us by calling 413-542-5670 or emailing cladlab@amherst.edu. If you are interested in participating in future research, visit our website at [www.bitly.com/cladlab](http://www.bitly.com/cladlab) to register your family with our lab. If you register your family, we will contact you when there is a study that your child is of the right age to participate in. During the summer, we are open Monday through Friday, from 9am to 5 pm, and participation in a study usually takes no more than a 30-minute visit to our lab.
Our thesis students, Erika DeAngelis ('19) and Rebecca Jordan ('19) presented their thesis work at the Society for Research in Child Development Biennial conference in Baltimore, MD in March, 2019. Congratulations to both Erika and Rebecca on their new positions! This fall, Erika will start a PhD program in developmental psychology at the University of Minnesota and Rebecca will begin work as a postgraduate research fellow at the Yale Child Study Center.

Meet our Summer RAs!

Katie Crum and Julia Ruggiero are rising juniors working as research assistants in our lab this summer. They are both Psychology and Mathematics double majors. They are so excited to be working with your children this summer!