



PLAYING WITH NEW FRIENDS

Alicia Vallorani^{1*} and Koraly Pérez-Edgar²

¹Department of Psychology, University of Maryland, College Park, MD, United States

²Department of Psychology, The Pennsylvania State University, University Park, PA, United States

YOUNG REVIEWERS:



JORDAN

AGE: 9



STEPHANIE

AGE: 12

Making friends is fun! But for some children, it is hard and even scary. Children who are shy (behaviorally inhibited) are nervous about meeting new people. Happy feelings help people make friends. Looking at people to talk to them also helps people make friends. We wanted to know more about what happens when children play together for the first time. We found that children mostly look at toys when they are playing with a new friend. But when children show happy feelings, they are more likely to look at a new friend! Sharing happy feelings helps children make friends. But children who are higher in behavioral inhibition are less likely to share happy feelings with new friends. Children can help friends who are nervous about meeting new friends by giving them time to get comfortable and even helping them meet new people.

WHAT HELPS CHILDREN MAKE NEW FRIENDS?

Do you like meeting new friends? Some children find meeting new friends to be really hard and scary. We often call these children

TEMPERAMENT

How children experience and respond to the world.

BEHAVIORAL INHIBITION

Fear of new people and new places. Children high in behavioral inhibition are nervous, especially in new places. We often say that children with behavioral inhibition are shy.

shy. Some children tend to be shyer than others because of their **temperament**. Temperament describes how children respond to the people, places, and things around them. Some children's temperaments mean that they are really excited to meet new people or try new things. For other children, their temperaments mean they have trouble with new people and new activities. We say that these shy children are high in **behavioral inhibition**. New people make children who are higher in behavioral inhibition nervous. Being nervous makes it harder to meet new friends.

Children higher in behavioral inhibition often feel more unhappy feelings [1] (for more information on why some children have more unhappy feelings than others, please see [this Frontiers for Young Minds article](#)). Unhappy feelings make it hard to meet new friends because people often want to be alone when they are unhappy. Happy feelings help people meet friends [2]. People often want to do new things when they are happy and that means they often interact with other people. Looking at others also helps people make friends because they can see what their new friends are feeling and react in ways that helps the two friends get to know each other.

Scientists can measure how long children look at people. Older studies used to count how long children looked at faces on computer screens (Figure 1). Shy children might look more at unhappy faces on computer screens [3, 4]. But when children play with friends, they do

Figure 1

Researchers can study how long children look at faces using computer tasks [5, 6]. Above is an example task. **(A)** Children see a video to get them to look at the computer screen. **(B)** A face appears in the center of the screen. **(C)** A checkerboard appears on either side of the face. Usually, children look at the checkerboard because it is new, but some children keep looking at the face. Researchers count how long children look at the face compared to the checkerboard, which tells them how much children like to look at faces.

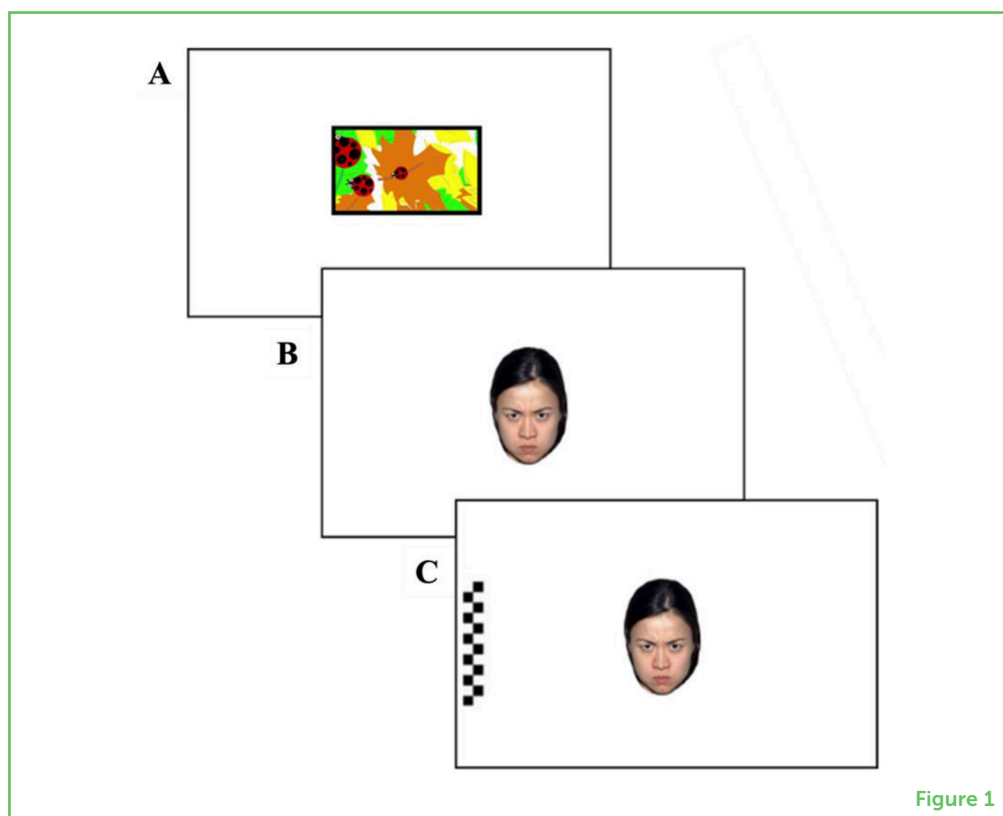


Figure 1

MOBILE EYE-TRACKING

Glasses a person can wear that keep track of where they are looking. Mobile eye-tracking is special because the glasses can be worn anywhere.

Figure 2

The children in the figure are in the same room playing a game together, wearing mobile eye-trackers. The target (the red, yellow, and green circles) shows where the children were looking. **(A)** The child you can see in picture **(B)** was looking at the toy. **(B)** The child you can see in picture **(A)** was looking at the friend. The target in **(A)** is slightly cut off because the child was looking down. Parents provided consent for the use of their children's images in academic publications.

TWO-WAY MIRROR

A mirror that is a window on one side and a mirror on the other side. Researchers use two-way mirrors to watch people without being seen.

BEHAVIOR CODING

Making a count of the ways a person acts. In this study, we counted the times that children showed happy feelings, like smiling or laughing.

not just look at pictures on a computer screen. Newer studies use **mobile eye-tracking** to count how long children look at people in real life (Figure 2). Eye-trackers are cameras that record where a person's eyes are looking. Mobile means that the cameras can move around with the person, usually by having the cameras inside glasses a person can wear. So, mobile eye-trackers let scientists see where people are looking when they move around—like when children are playing with friends. These newer studies say children look at toys more than at faces when they are playing [7]. In our research, we wanted to know more about what happens when children play with new friends.

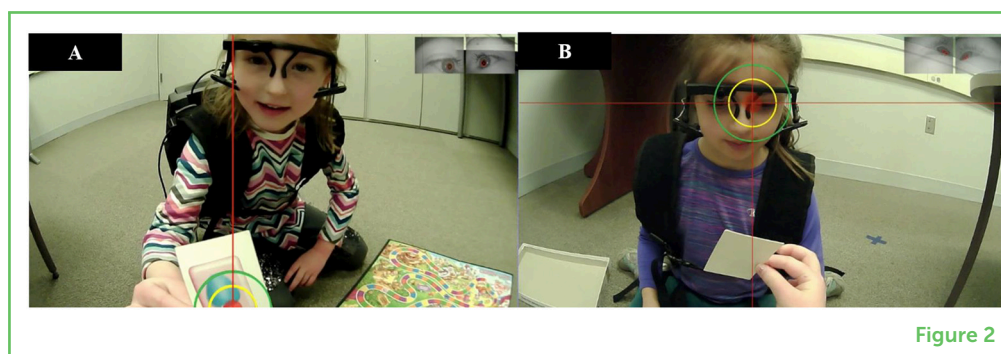


Figure 2

HOW DID WE STUDY CHILDREN WHILE THEY PLAY?

A total of 42 children (5–7 years old) came to our lab to play. Children played in pairs. That means we had 21 play sessions! When we paired children, we made sure they were the same age. We also had boys play with boys and girls play with girls. We did this because often children are more comfortable playing in boy-boy and girl-girl pairs. We also made sure they did not already know each other. All children spoke English while doing the study.

When the children first got to our lab, we had them put on our mobile eye-trackers. They then went into a special room filled with toys. We told them they should play however they wanted to. Our special room had a **two-way mirror**, so we could watch the children playing, but they could not see us. We also videotaped the play session. Children played together for 5 min. Parents or caregivers filled out surveys telling us if their children showed a lot of behavioral inhibition, or shyness.

We used **behavior coding** to count happy feelings, which means we counted how often each child showed happy feelings, like excited talking, smiling, or laughing. We also counted how long children looked at toys, friends, or anywhere else. Counting took a long time! We ended up with over 4,000 data points—that is a lot of data! Because we had so much data, we could ask exciting questions.

DO CHILDREN LOOK AT TOYS MORE THAN AT FRIENDS?

Our first question was: Do children look more at toys than friends while playing? We asked this question to see if we would get the same answer as other studies. Scientists like to do this because it shows there is a pattern and not just a one-time result. Because of the results of other studies, we expected that children would mostly look at toys. Do you think we found what we expected? We did! Children spent more time looking at toys than at friends or anywhere else (Figure 3). That means our study showed a pattern with other studies. That is important to know, especially since older studies counted how long children looked at faces on computers [7]. Our mobile eye-tracking study told us about how children look at friends in the real world.

Figure 3

This bar graph compares the average number of seconds children spent looking at toys (purple), friends (dark green), and anywhere else in the room (light green). You can see that, on average, children spent more time looking at toys than at friends or anywhere else in the room. The black bars shaped like the letter I are called error bars, and they show how sure we are that the values obtained are accurate. The smaller the error bar, the surer we are the value is correct.

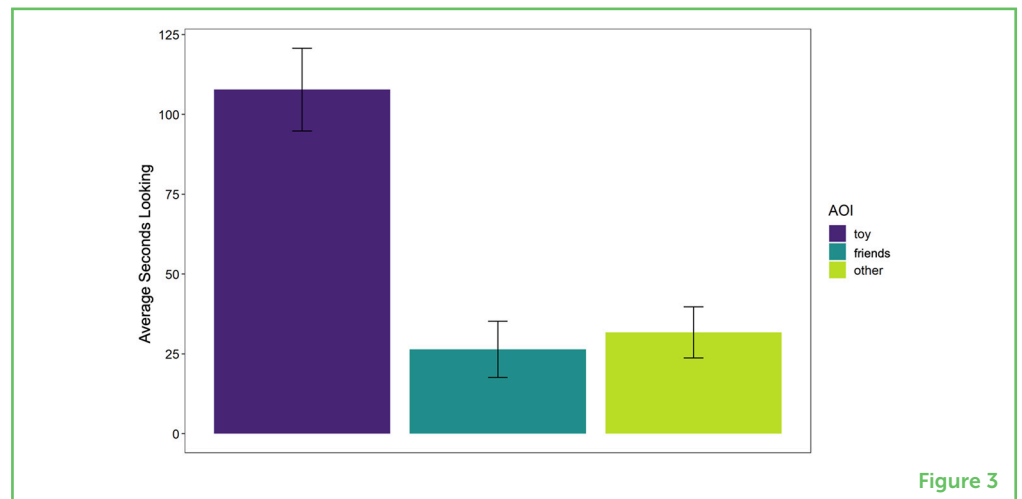


Figure 3

DO HAPPY FEELINGS MAKE CHILDREN LOOK AT NEW FRIENDS?

Our second question was: Do happy feelings make children look at new friends? Happy feelings help us make friends [2], so we expected that happy feelings would make children look at friends. Do you think we found what we expected? We did! When children showed happy feelings, they were more likely to look at their new friend. It did not matter if the new friend was showing happy feelings. Only a child's own happy feelings made them more likely to look at their new friend.

Children higher in behavioral inhibition looked at new friends the same amount as other children. Does this surprise you? We were a little surprised. New mobile eye-tracking research shows that how scary something is might change how often children look at that thing [8, 9]. Meeting new friends can be scary for shy children, but it might not be so scary that it changes how children look at each other. We also found that happy feelings came *before* looking at a friend! If happy feelings came *after* looking at a friend, that would mean looking at

friends made the children feel happy. But happy feelings came *before* looking at a friend. That means happy feelings made children want to connect with new friends!

DO CHILDREN SHARE HAPPY FEELINGS WITH NEW FRIENDS?

Our third question was: Do children share happy feelings with new friends? We expected that children higher in behavioral inhibition would be less likely to share happy feelings with friends because these children feel more unhappy feelings [1]. Do you think we found what we expected? We did! Children higher in behavioral inhibition were less likely to show happy feelings when friends were showing happy feelings. Happy feelings help us make friends [2]. Sharing happy feelings can show we are having fun. But when children have more unhappy feelings, they might have trouble showing happy feelings. That might make it hard to make new friends. Children higher in behavioral inhibition might feel nervous feelings that make it harder for them to share happy feelings with new friends.

WHAT DO WE STILL HAVE TO LEARN?

Mobile eye-tracking is new! There is still so much to learn. Next, we should study children meeting friends at different ages. For the children in our study (5–7 years old), only a child's *own* happy feelings made them more likely to look at their new friend. Do you think this would be the same for older kids? Maybe teenagers are more likely to look at friends who are showing happy feelings. As we get older, we learn more about people, how they feel, and how they think. So, we might pay more attention to friends' feelings as we grow up!

Our study looked at boy-boy and girl-girl pairs. But sometimes boys and girls play together! New studies could see if children look at friends in girl-boy groups the same as they do in girl-girl and boy-boy groups. Our study also had children play for only a short time, but a new study could have children play for a longer time. This may give shy children time to get comfortable, and maybe we would see shy children showing more happy feelings if they had more time. What do you think we should study next?

TO SUM IT ALL UP...

In our study, we asked what happens when children play with new friends. Children played in pairs while wearing mobile eye-trackers. Caregivers reported their children's behavioral inhibition levels. We counted happy feelings and we counted when children were looking at toys, friends, or anywhere else. We found that children mostly looked at toys. But, when children were showing happy feelings,

they were more likely to look at their new friend. Children higher in behavioral inhibition were less likely to share happy feelings with new friends. We can use what we learned to plan more studies.

The most important thing we learned from this study is that children have different experiences when meeting new friends. For some children, it is a piece of cake! For other children, it can be scary. When children meet new friends, they might expect those new friends to show happy feelings. But it might be hard for some children to show happy feelings right away. Even if a new friend is nervous, they might turn out to be a great friend! So, we should all try to give new friends time. We can also help friends we know who are nervous about meeting new people. Sometimes just having a friend with you when you meet someone new makes all the difference!

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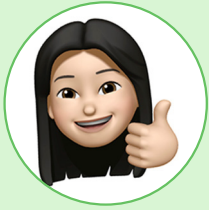
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YOUNG REVIEWERS

JORDAN, AGE: 9

I am in third grade. I enjoy different kinds of science. I like to explore things like different rocks, snails, worms and I really like to look at different birds. I like to learn about animal habitats. Space is my favorite subject because there is a huge galaxy that no one has discovered. When I am older, I want to be a scientist that explores space. My favorite animal is a hamster because it is small and cute.





STEPHANIE, AGE: 12

My name is Stephanie and I am 12 years old. I am a sixth-grader at a middle school and my hobbies include singing, tennis, and playing the clarinet. I performed at the UniverSoul Circus and I participate in Math Olympiad at school and I won 1st place in a county science fair. I enjoy writing and reading mystery stories.

AUTHORS

ALICIA VALLORANI

I am an NIMH Ruth L. Kirschstein NRSA Postdoctoral Fellow at the University of Maryland. I graduated with my PhD in Developmental Psychology from The Pennsylvania State University in 2022. I use naturalistic methods to study how people develop through social interactions and how this relates to social anxiety. *avallora@umd.edu



KORALY PÉREZ-EDGAR

I am the McCourtney Professor of Child Studies and a Professor of Psychology at The Pennsylvania State University. I received my PhD in Psychology from Harvard University. I study how attention and temperament develop and how the interaction between attention and temperament affects social anxiety.

