Supplementary materials for “The Development of Structural Thinking about Social Categories”
Both framing conditions:
Here’s Kiki school. There are two classrooms at Kiki school – the girl classroom and the boy classroom. In the girl classroom, there are only girl students. In the boy classroom, there are only boy students.
Students from both classrooms play outside during recess. It’s fun to be outside on a sunny day! Today, when the boys were playing outside at one side of the playground, the wind blew in some leaves, and they had fun chasing them! Today, when the girls were playing at the other side of the playground, a broken sprinkler went off and the girls got sprinkled with water – they had fun running around in the cloud of tiny drops!
Every day during recess each student plays one of two games – one is Yellow-Ball and the other one is Green-Ball. Both of these games are for one player – you can get a Yellow-Ball and play by yourself, or you can get a Green-Ball and play by yourself. Each kid gets a ball to play with. At Kiki school, there’s a special way of deciding which ball each kid in the two classrooms will play that day. In each classroom, the teacher puts two different buckets in one corner. One is yellow, one is green, and they stand right next to each other.
On the way to recess, each child stops a few steps away from the buckets and throws a pebble like this [demonstrate a throw], aiming for one of the buckets.
If the pebble falls into the yellow bucket, that child plays Yellow-Ball that day. If the pebble falls into the green bucket, that child plays Green-Ball that day. Do you see how this works?
Structural framing condition only:
These are the two buckets that are always set up in the boys' classroom. You can see that at the boys' classroom, the bucket for Green-Ball is much bigger than the bucket for Yellow-Ball, so it's much easier to get the pebble in the Green-Ball bucket than it is to get it in the Yellow-Ball bucket.
These are the two buckets that are always set up in the girls' classroom. You can see that at the girls’ classroom, the bucket for Yellow-Ball is much bigger than the bucket for Green-Ball, so it’s much easier to get the pebble in the Yellow-Ball bucket than it is to get it in the Green-Ball bucket.
So, remember, in the boys’ classroom there are two buckets. Are they both of the same size, or is one of them bigger? (Which one?)

[Corrective feedback, if necessary; repeat the question]
So, in the girls’ classroom there are also two buckets, right? Are they both of the same size, or is one of them bigger? (Which one?)

[Corrective feedback, if necessary; repeat the question]
Non-structural framing condition only:
These are the two buckets that are always set up in the boys’ classroom. You can see that at the boys’ classroom, the bucket for Yellow-Ball is the same size as the bucket for Green-Ball, so it’s just as easy to get the pebble in the Yellow-Ball bucket as it is to get it in the Green-Ball bucket.
These are the two buckets that are always set up in the girls' classroom. You can see that at the girls’ classroom, the bucket for Yellow Ball is also the same size as the bucket for Green-Ball, so it’s just as easy to get the pebble in the Yellow-Ball bucket as it is to get it in the Green-Ball bucket.
So, remember, in the boys’ classroom there are two buckets. Are they both of the same size, or is one of them bigger? (Which one?)

(Corrective feedback, if necessary; repeat the question)
So, in the girls’ classroom there are also two buckets, right? Are they both of the same size, or is one of them bigger? (Which one?)

[Corrective feedback, if necessary; repeat the question]
Both conditions:
Here’s how many boys in the boys’ classroom played each game one day: one boy played Green-Ball, the next one played Green-Ball, the next one played Green-Ball, the next one played Green-Ball, the next one played Yellow-Ball, and so on. So you can see which game each boy played that day.
And here’s another day at the boys’ classroom.
And here’s another day at the boys’ classroom.

So, these are the games from the boys’ classroom. Which game did the boys play most often? Yellow-Ball or Green-Ball?

Feedback: Right, Green-Ball. /OR/
Let’s see, can you show me the boys that played Yellow-Ball? And can you show me the boys that played Green-Ball? So which game did the boys play most often?
Here’s how many girls in the girls’ classroom played each game one day; one girl played Yellow-Ball, the next one played Yellow-Ball, the next one played Green-Ball, the next one Green-Ball, and so on. So you can see which game each girl played that day.
And here’s how many girls in the girls’ classroom played each game another day.
And here’s another day at the girls’ classroom.

So these are the games from the girls’ classroom. Which game did the girls play most often? Yellow-Ball or Green-Ball?

Feedback: Right, Yellow-Ball. /OR/
Let’s see, can you show me the girls that played Green-Ball? And can you show me the girls that played Yellow-Ball? So which game did the girls play most often?
[open-ended explanation task]
So, the girls in the girls’ classroom play Yellow-Ball a lot at their school. Why? [response].
[causal explanation evaluation task]
Ok! Now let’s ask the same question to my friends Ducky, Elly and Piggy, and see what they think. Each of them sometimes says things that are *smart*, and sometimes says things that are *silly*. 
Ok, let’s see what Ducky thinks! - "Ducky, Why do they play Yellow-Ball a lot?"
[Ducky says] “Because girls like playing Yellow-Ball.”
What do you think of Ducky’s explanation? Is it a good explanation or a bad explanation? Really [bad/good] or kind of [bad/good]?
Ok, let’s see what Elly thinks! - “Elly, Why do they play Yellow-Ball a lot?”

[Ellie says] “Because in the girls’ classroom, it’s easier to throw a pebble in the yellow bucket.”

What do you think of Elly's explanation? Is it a good explanation or a bad explanation? Really [bad/good] or kind of [bad/good]?
Ok, let’s see what Piggy thinks! - "Piggy, Why do they play Yellow-Ball a lot?” [Piggy says] “Because they got sprinkled with water.”

What do you think of Piggy’s explanation? Is it a good explanation or a bad explanation? Really [bad/good] or kind of [bad/good]?

[If necessary, ranking task to resolve ties: Here are my friends, X & Y & Z. You said both/all of them gave [...] explanations. I still want to give them prizes: the 1st prize for the best explanation, the 2nd prize for the 2nd best explanation, [the 3rd prize...]. Remember, I asked all of them about girls, “Why do they play Yellow-Ball a lot?” X said “...”; Y said “...”; Z said “...”. Who should get the 1st prize for the best explanation? [repeat for the rest of the prizes]
[formal explanation evaluation task]
Here’s Suzy. She plays Yellow-Ball a lot at her school. Froggy, a friend of mine, wants to know Why. Let’s ask Doggie! - "Doggie, why does Suzy play Yellow-Ball? – [Doggie says] "Because Suzy is a girl." - What do you think of Doggie’s explanation? Is it a good explanation or a bad explanation? Really [bad/good] or kind of [bad/good]?
[mutability rating task]
Just yesterday, one thing changed in this school. Now girls can go to study in the boys’ classroom. They don’t have to go to the girls’ classroom. And now boys can go to study in the girls’ classroom. They don’t have to go to the boys’ classroom.
Here’s Suzy again. Her parents decided that now she will be going to the boys’ classroom, because her parents know the teacher there. Today Suzy is at the boys’ classroom, and it’s her turn to throw a pebble into a bucket before recess, to decide which game she’ll play. If the pebble goes into the yellow bucket, she will play.. [wait for kid to point/say which game] – right, Yellow-Ball!; if the pebble goes into the green bucket, she will play... [wait for kid to point/say which game] – Right, Green-Ball!
Which game do you think Suzy will play today? For sure [Green-Ball/Yellow-Ball] or maybe [Green-Ball/Yellow-Ball]?
[definition task]
One day three aliens from another galaxy, Gely, Kolu and Dalu, were walking by the Kiki school, and they saw some girl students running around. Dalu said: “Hey, look at the girls, how fast they run!”. Gely has never heard about girls (there are no girls on Gely’s planet), so Gely asked: “What is a girl?”. Kolu said: “A girl is a person who got sprinkled with water”. What do you think of this answer? Did Kolu do a good job telling Gely what a girl is, or a bad job? Really [good/bad] or kind of [good/bad]?
And Dalu said: “A girl is a person who plays Yellow-Ball a lot”. What do you think of this answer? Did Dalu do a good job telling Gely what a girl is, or a bad job? Really [good/bad] or kind of [good/bad]?

[If necessary, ranking task to resolve ties: give the 1st and 2nd prizes for the “best answer” and “second best answer”]
Note:
On the first attempt, four 3-4-year-olds (two in each experimental condition) and four 5-6-year-olds (all in the non-structural condition) failed at least one of the comprehension checks. These participants were provided corrective feedback and were able to pass the comprehension checks on the second attempt; their data were included in subsequent analyses.