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Cultural Bias during Word Learning

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Abstract

Children are known to use various learning biases to efficiently develop their language skills. Prior studies have confirmed that young children keep track of reliability histories of possible teachers in order to selectively learn words. Furthermore, it has been shown that they are less likely to learn from foreign language speakers or foreign names of objects. Recent studies even indicated that children seem to change their patterns of learning just by hearing the cultural background of the target objects. The purpose of this thesis is to investigate the cultural bias in word learning among 2- to 3-year-olds. We hypothesized that children would be less likely to learn object names and functions when they were told those objects and/or the teacher were from another country. The result of the experiment showed no evidence to support this hypothesis; however, we found that participants performed very poorly in the novel word learning task, yet very well on the novel function learning task. Possible reasons for these findings are discussed.

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Cultural Bias during Word Learning

Language acquisition in children has been a popular field of study in developmental psychology. Many studies have revealed that children start to comprehend spoken language even before starting to talk. As they grow up, children rapidly increase their vocabulary to further their understanding of the world around them. In order to learn quickly, children seem to use specific learning strategies and biases to maximize the efficiency of this learning. For example, there have been many studies that show that children use a shape bias and/or a function bias when they learn the name of an object. Children as young as 2 years of age believe that similarly shaped objects or seemingly similarly functioning objects tend to have the same name (Landau, Smith, & Jones, 1988; Nelson, Russell, Duke, & Jones, 2000). In addition, recent studies also show that children keep track of the trustworthiness of potential teachers to maximize their correct learning. Since some knowledge in one culture is not always shared in other cultures, an interesting question is whether children also use a strong cultural bias to assess the trustworthiness of the teacher when acquiring new knowledge.

Graham, Stock, and Henderson (2006) found even very young children show an understanding of conventionality of object labels; some property of objects, like names, are shared among people, while some other property, like how each individual feels about the objects, are not shared. In their experiment, sixty 19-month-olds were asked to open one of four boxes, of which each contained a novel object inside, by either being told to find an object with a novel name or an object in the experimenter's mind. Then, children were asked to open all the rest of the boxes to find other novel objects as well. Following this, another experimenter came in and asked children to identify either the object with

the novel name that the first experimenter labeled or the object in this experimenter's mind out of the same set of the four different novel objects depending on a condition. Children successfully identified the same toy corresponding to the novel name even though the experimenter changed. However, the toys they chose varied when they were asked to find whatever was in the experimenter's mind. This result illustrates that children understand the concept of conventionality and unconventionality of object labels; the name given to objects are conventional, but the relationship between the individual and object is not. This is a key finding for this field of study in the way children may use more complex biases involving the knowledge states of people who are regarded as teachers.

Reliability of Teachers

Sabbagh and Baldwin (2001) conducted a study to figure out how the knowledge states of teachers influence the word learning of young children. Forty-eight 3- and 4-year-olds were taught novel labels of objects by either a speaker who explicitly expressed his ignorance or a speaker who expressed knowledge about the objects. The result showed that children learn words better from knowledgeable rather than ignorant speakers. In other words, this result indicates that children seem to vary their word learning depending on the trustworthiness of people around.

As children grow up, it seems they even start to infer the reliability of speakers without the speakers explicitly expressing their knowledge or ignorance. Koenig and Harris (2005) asked whether children encode the identity of teachers when evaluating speakers' ignorance and inaccurate claims. In their experiments, children first saw two informants identify familiar objects by either a familiar (and correct) name or a novel

(and incorrect) name, which made children believe one is an accurate informant but the other is an inaccurate informant. In the following phase, those two both provided conflicting names for novel objects. The results showed that 4-year-olds tend to predict the previously accurate informant would be accurate in the future, and exhibit selective trust towards that informant. This result indicates that children are more likely to learn from teachers who give accurate information than from those who give information that children think is wrong.

Furthermore, Clement, Koenig, and Harris (2004) tried to determine how strongly the children show reliability bias towards informants when compared to their own beliefs. In their study, 53 children, ranging from 3- to 5-year-olds, saw one puppet that always provided correct answers to obvious questions, while another puppet always provided wrong answers. The experimenter put a colored pompon into a box without showing its color to the participant and made the two puppets look inside of the box and give testimony about the color. As expected from previous findings, the result showed that children were more likely to trust testimony given by the previously reliable puppet. However, in the following phase, when the participant actually witnessed the color of the pompon when it was put into the box and then heard testimony, both of which contradicted their first-hand observations, children were more likely to believe their own observations. These results indicate that children seem to keep track of the person's history of being accurate, but the belief is not fixed and can be complemented with their observational beliefs.

Similarly, Birch, Vautheir, and Bloom (2008) focused on children's sensitivity to teachers' prior accuracy in terms of learning novel words and novel object functions.

Twenty 3-year-olds and twenty 4-year-olds first saw one puppet name a familiar object correctly, while another puppet named the same object incorrectly. In the following phase, each puppet used the same novel name to label a different novel object, and the participants were asked to choose an object that they thought was the name. The results also supported the previous findings that the children are more likely to learn from a teacher who has a history of being accurate.

Furthermore, the researchers then used novel functions instead of novel names and showed that the sensitivity is not word learning specific. Similar to the first experiment, participants saw one puppet state functions of familiar objects correctly, while another puppet described them incorrectly. In the testing phase, each puppet stated the same function for a different novel object. The results showed that both 3- and 4-year-olds are more likely to learn new object functions from a previously accurate teacher than from an inaccurate teacher. Therefore, the authors successfully showed that children's use of other's past accuracy is not word learning specific.

An interesting question is whether the learning of the reliability of an informant is fixed or can be reversed. In order to answer this question, Scofield and Behrend (2008) first confirmed that 3- and 4-year-olds trusted a reliable speaker over an unreliable speaker. One teacher labeled three familiar objects reliably while another teacher labeled the same objects unreliably. Then, while one gives a novel object with a novel label, the other gives a different novel object with the previous same novel label. Participants were asked to identify which one of two novel objects belonged to the novel label. As expected, participants chose the object labeled by the reliable speaker, confirming that 3- and 4-year-olds trust reliable speakers more at novel word learning. The experiment was

different from the other studies in that teachers labeled novel objects before they labeled familiar objects to disclose their reliability. As a result, some 4-year-olds reversed trust and revised a word mapping when a trusted speaker later proved unreliable. In Study 3, those 4-year-olds who reversed trust and revised the word mapping were likely to maintain the revision and tended to favor the previously reliable speaker over time.

Birch and Bloom (2002) came up with another mechanism that 5-year-olds use to infer the reliability of speakers called "the familiarity principle." In their experiment, 3-, 4-, and 5-year-olds were shown two toys that resembled a dog, and an experimenter demonstrated his familiarity with each of them by either explicitly describing that he had never seen the toy or describing that he had played with the toy before. Then, he asked participants to label either dog as a common noun or "Jessie" as a proper name depending on condition. The result showed that children tend to evenly choose one of the toys or both in the common noun condition, but they tended to choose the one that the experimenter showed his familiarity with in the proper name condition. In a second experiment, the experimenter showed two dogs to the participant and explained that a puppet "Percy" is familiar with one dog but not the other. Then, the experimenter made Percy call one dog "one", and the other dog either "dog" as a common noun or "Jessie" as a proper name depending on the condition. Following this, the experimenter asked participants to identify which dog is the one Percy was familiar with. Five-year-olds, but not younger participants, were more likely to choose the one that Percy called "Jessie" than the one she called "dog", and the one she called "one" was chosen the least. Thus, the researchers concluded that the general understanding of the familiarity principle

gradually emerges as they grow up and is used as a mechanism to identify the reliable speaker.

Cultural bias

These experimental results have shown that children, even as young as 3 years of age, clearly and strongly exhibit the use of biases toward teachers when learning. Culture is one interesting factor that may influence the development of the biases toward speakers because it can bring about unconventional use of words and ignorance of teachers due to the cultural differences. Akhtar and Menjivar (2012) examined 3- and 4-year-olds' ability to learn words from a speaker of a foreign language. They hypothesized that exposure to more than one language may contribute to the ability to learn foreign words. Children with three different kinds of language backgrounds (monolingual, bilingual, monolingual but exposed to another language) watched a video that showed that English speakers and foreign language (Nordish) speakers name the same objects with different words, and an experimenter asked either "what do you call this?" or "what do you call this in Nordish?" by pointing to each object. The researchers found that children with exposure to more than one language tended to learn foreign words better than other children. They concluded that regular exposure to more than one language may assist young children in coming to an understanding of the concept of foreign language at an early age.

This type of cultural bias seems to be very strong among young children. According to Behrend, Ransom, Schwartz, and Bogulski (2010), 3- and 4-year-old English-speaking preschoolers were more likely to endorse an English speaker's over a Spanish speaker's label for a novel object, even when the English speaker had previously

provided unconventional names for familiar objects. This finding indicates how strong a linguistic or cultural bias during word learning could be, which can be even stronger than the reliability bias children often use.

Interesting recent findings suggest that the cultural background not only of the speakers, but of the target objects themselves, may also influence word learning performance. Henderson and Sabbagh (2007) questioned whether preschoolers will learn the names of foreign objects. They hypothesized that children would be less likely to learn the name of an object from a foreign country if they use a cultural bias by inferring that the word is less likely to be shared by their linguistic community because the object is not common in the community. Forty eight 3- and 4-year-olds were introduced to novel toys with novel labels along with information about whether the objects were either from their community or another country, and then their comprehension was tested. As expected, the result showed that 4-year-olds are more likely to learn the name of novel objects when they were told the toys were from their community than when they were told the toys were from a different cultural community. This finding indicates that children seem to start using cultural information about target objects to filter out seemingly unimportant word learning.

In addition to the shape and function bias, many studies have shown that various other properties like teacher's familiarity, trustworthiness, and cultural background also play an important role in children's efficient language development. Children show their strong understanding of the conventional nature of object name and function (Graham, Stock, & Henderson, 2006; Birch, Vautheir, & Bloom, 2008). With the understanding of this conventionality, they infer the teacher's ignorance and reliability to selectively learn

from people around them (Clement, Koenig, & Harris, 2004; Koenig & Harris, 2005; Sabbagh & Baldwin, 2001). This selectivity has been shown not to be fixed so children seem to reasonably enhance their learning (Scofield and Behrend, 2008). This technique seems to be expressed in a more elaborate way by involving culture (Akhtar & Menjivar, 2012; Behrend, 2010; Henderson & Sabbagh, 2007). However, many questions in this relatively new field remain unanswered and are thus under investigation.

Current Study

The purpose of this thesis is to extend our understanding of the relationship between word acquisition and a culture in children's language development. More specifically, this thesis focuses on how the information about the cultural background of a teacher or of target objects would influence word learning by young children. In this experiment, in order to investigate whether the information of cultural background was sufficient to influence their learning skill, children were told that the teacher and the target objects were from either the U.S. or Japan. Based on the previous findings, children should learn the name of objects better when they are told the objects are from their linguistic community, the U.S., than from another culture, Japan (Henderson & Sabbagh, 2007). It is not known whether these same findings could be expected when learning an object's function; however, the study of children's selective trust of a teacher in function learning (Birch, Vautheir, & Bloom, 2008) reasonably raises the expectation of the possibility to see the same tendency in the experimental findings.

Additionally, this experiment manipulates familiarity of the target objects as a within-subject variable. In the familiar object trial, each participant saw the teacher identify familiar objects with novel names and functions. In the novel object trial, the

teacher identified unfamiliar objects with novel names and function. Since children have been known to show understanding of the conventionality of objects' names and functions, it was expected that they would learn less in the familiar object trial because of their understanding of the exclusive mapping relationship between a name and an object as they are required to overwrite knowledge about familiar objects (Scofield & Behrend, 2007). The overwriting of knowledge would be even more difficult if children could assume that the teacher was unreliable or ignorant, based on the cultural information provided as expected.

Method

Participants

Fourteen monolingual English speaking children (8 male and 6 females) participated in the study, ranging in age from 2 years to 3 years (M_{age} = 2 years, 10 months; *SD* = 0.75). Participants were recruited from families and a day care center around the university. Informed consent was granted from the parent/guardian, and children were given a small prize as compensation.

Materials

In this experiment, six familiar objects (scissors, tape, shampoo, pen, screw-driver, and key) and three novel objects (see the list and the images in Table 2) were used. The experiment took place either in the WordPlay Lab in Memorial Hall on the campus of the University of Arkansas or in a quiet room at a day care center.

Procedure

The participants were randomly assigned to one of four conditions in regards to the two main independent variables: cultural background of target objects and cultural background of the teachers who taught the participants the names of the objects. Each child participated in two trials (familiar objects trial and unfamiliar objects trial) in random order (See the Table 1 for the experimental design). These procedures were counterbalanced across participants with a predetermined random order.

At the beginning of the study, the experimenter and the participant played with toys while his or her parent or guardian was filling out the consent form. After consent was granted and the child seemed to be ready to start the experiment, the experimenter gave the following instructions: "Let's play another game on that table. Please come and sit down." The participant sat on one side of the table, while the experimenter sat on the other side.

Familiarization trial. The study began with a familiarization trial in order for the participant to practice the general procedure of the test trials to follow. In the

Table 1

Independent variables manipulated in the design of the Experiment

		Objects are from U.S.		Objects are from Japan	
		Familiar objects	Novel objects	Familiar objects	Novel objects
Teacher is from U.S.	Name learning				
	Function learning				
Teacher is from Japan	Name learning				
	Function learning				

familiarization trial, the experimenter placed three different familiar objects (scissors, tape, and shampoo) on the table. Participants saw the experimenter hold each object in his hand, label each object with a familiar name, and demonstrate the familiar function of the object by explicitly telling the function (e.g., "This is to cut a paper."). Each time, the participant was asked to repeat the name to make sure that they were attending to the task. Then, participants were tested immediately for their memory of the learned names and functions of the objects. The experimenter asked the child to point to the object that corresponded to a given name (e.g., "Which of these things is scissors? Please point at the scissors") or a given function (e.g., "Which of these things is used to cut paper? Please point at the thing that is used to cut paper."). The order of the questions was counterbalanced (See Appendix A for script).

Test trials. Following the familiarization session, all children participated in the test trials that included both familiar object trials and unfamiliar object trials. Half of the participants did the familiar object trials first and then the novel object trials, while the other half did the trials in the reverse order.

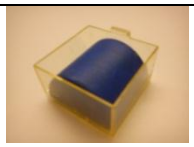
On the test trials, depending on the condition, there were either three familiar objects (functions of the objects are easily inferable) or three novel objects (functions of the objects are not easily inferable) placed on the table (See Table 2 for a list of the objects, names, and functions used). The experimenter explained the cultural background of the objects (either "from Arkansas" or "from Japan") and himself (either "from Arkansas" or "from Japan"). The experimenter held each of the objects and provided a label and a function for the objects as in the familiarization session. However, unlike the familiarization session, the experimenter labeled the objects with unfamiliar names and

novel functions. Participants were then asked to repeat the name and the function of the objects taught by the experimenter.

Following the teaching of the novel object labels and functions, the objects were rearranged on the table, and the experimenter asked the participant to point to the object of a certain name (e.g. “Which of these things is koba? Please point at koba”) or of a certain function (e.g. “Which of these things is used to make sounds? Please point at the thing to make sounds.”). Participants’ responses were recorded with paper and pencil by the experimenter. The experimenter asked these questions for all three objects in both conditions in a predetermined random order. When the session was completed, children were allowed to choose a small gift before they left.

Table 2

Stimuli used in the familiar object and novel object trials

Familiar object trial			Novel object trial		
Object	Name	Function	Object	Name	Function
Pen	Koba	To make sounds		Toma	To play music
Screw driver	Danu	To eat meal		Jito	To clean table
Key	Modi	To cut a thing		Goban	To catch a bug

Results

Participants' learning scores were calculated by summing up the number of correct responses on names and functions in both the novel object and familiar object trials. The following summary variables were used in this analysis: novel names of familiar objects, novel names of novel objects, novel functions on familiar objects, and novel functions on novel objects (See Table 3 for the list of the mean rate of correct performance in each condition). A mixed 2 × 2 × 2 (Objects [from U.S., from Japan]) × Teacher [from U.S., from Japan] × Familiarity [novel, familiar]) ANOVA with the between-subjects variables being objects and teacher cultural background and the within-subjects variable being familiarity of object was conducted on these data. Contrary to the hypotheses, this analysis revealed no significant main effect of the cultural background of the object, $F(1,10) = .004$, $p = .949$, and by cultural background of the teacher, $F(1,10) = .039$, $p = .847$, or interaction between these two variables on children's learning.

The results also did not support the mutual exclusive mapping relationships between object labels, which would have made children less likely to overwrite names of familiar objects, as there was no significant main effect for familiarity of the target

Table 3

Mean percentage of correct responses in each condition

Condition	*M* (%)	*SD* (%)	Condition	*M* (%)	*SD* (%)
Object US	60.42	19.80	Familiar objects	60.71	36.35
Object JAPAN	59.72	15.29	Novel objects	59.52	40.93
Teacher US	59.52	13.97	Name learning	33.33	33.95
Teacher JAPAN	60.71	21.36	Function learning	86.90	18.90

objects, $F(1,10) = .012$, $p = .915$.

However, there was a significant main effect for question type (object name or function) on children's responses, $F(1,10) = 25.86$, $p < .001$, such that children performed significantly better in object function learning (M = 86.9 % correct, SD = 18%) than in object name learning (M = 33.3% correct, SD = 31%). Children performed significantly above chance when learning object functions but not differently from chance when learning object labels (See Figure 1 for the graph).

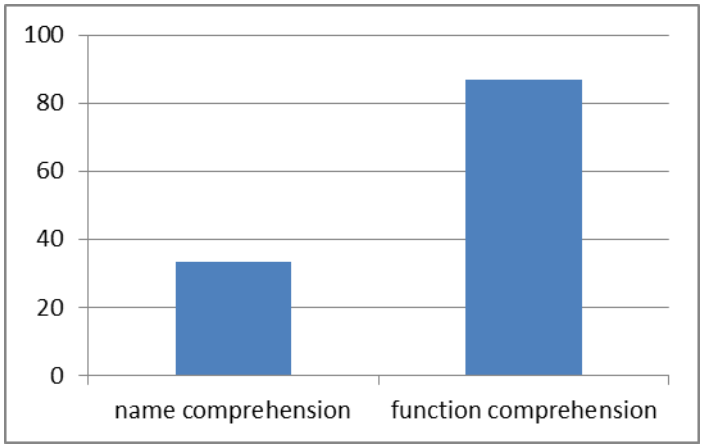


Figure 1. Rate of correct responses in learning object names and functions

Discussion

Contrary to our expectations, this experiment did not find any evidence for a cultural bias that children may use during word learning. It was expected that children would be less likely to learn names or functions of objects when told that the objects and/or the teacher were from a different culture. However, the results did not show any significant differences between responses to same culture and different culture teacher or object conditions. These findings can be compared to the results that were reported by Henderson and Sabbagh (2007). Henderson and Sabbagh found that although 4-year-olds

selectively learned names of objects when they were told objects were bought "downtown" rather than in Japan, 3-year-old's performance was poor regardless of where they were told the objects were from. Since the mean age of the children who participated in the current study was 2 years, 10 months, this could be the possible reason for their poor performance. It is also possible that the small sample size in the current study contributed to the failure to confirm these hypotheses.

Also contrary to expectations, the current results did not show any significant difference between learning labels and functions for familiar objects versus novel objects. Previous studies have shown that young children tend to associate a single word to a single object, and this association seems to be mutually exclusive (Markman, Wasow, & Hansen, 2003). Therefore, it was expected that children would learn names of unfamiliar objects better than names of familiar objects. However, children did not exhibit any difference in learning either object names or functions as a function of familiarity. This unexpected result in object name learning can be explained by pointing out that those participants did not show evidence of object name learning in either condition. Children responded correctly only 33.3 % of the time which, with three choices available, was equivalent to random performance. Therefore, there was no way mutual exclusivity could be observed without evidence for actual learning. On the other hand, the mean percentage of participants' correct responses for function learning was 86.9 %, which was significantly above chance. Learning the functions of familiar objects might be explained by previous findings that indicated the absence of mutual exclusive mapping between an object and fact among 2-year-olds (Scofield & Behrend, 2007) by making children being

able to map multiple functions to one object. Children readily learn functions for both familiar and unfamiliar objects.

One interesting finding from this study was that children were extremely accurate when learning object functions even though they performed poorly when learning the object's name. It has been shown previously that 3- and 4-year-olds learn novel names and novel facts of objects equivalently well (Markson & Bloom, 1997). However, the result of this current study with younger children suggested that the novel name mapping skill may arise later than the novel function mapping skill. This finding might have been due to children tend to enjoy the function learning more than the name learning, thus resulting in much higher engagement in the learning task and thus better comprehension performance.

Conclusion

Overall, this study did not provide the evidence for cultural bias based only on background information; however, the result suggested that young children do not exhibit mutual exclusivity in learning associations between a function and an object. Also, the results indicated that children in this age group performed poorly when learning novel names of objects but not when learning their novel functions. This might be because teaching functions of objects seem to enhance children understanding rather than using memorization of random names in novel label learning. Also, because children could visually and behaviorally engage in the function learning task, resulting in improved performance when compared with word learning. Therefore, this study found that for young children, it seems that the skill in mapping an object with a function develops prior to the skill in mapping an object with a name label.

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Appendix A

Script for the experiment

Instruments:

Familiar objects and **associated cards** × 6

- For Training (yellow):
  - Scissors (card: scissors / to cut a paper)
  - tape (card: tape / to stick things together)
  - shampoo (card: shampoo / to wash your hair)
- For testing (pink):
  - Pen (card: koba / to make sound)
  - Driver (card: danu / to eat meal)
  - Key (card: modi / to cut a thing)

Unfamiliar objects and **associated cards** × 3

- For testing (blue) - See the table 2 for the image
  - novel object 1 (card: toma / to play music)
  - novel object 2 (card: jito / to clean table)
  - novel object 3 (card: goban / to catch a bug)

Preparation

Experimenter place scissors, tape, shampoo on the table in the order.
On the check sheet, write down date, your name, conditions, etc.

Familiarization trial:

Experimenter brings a child into the room and plays with him or her to familiarize with the experimenter while his or her parent is reading and writing information on the consent form.
Then, has him / her sit in front of a table. The experimenter sits on the other side of the table.

Thank you for coming. Today, we are going to play a game. In this game, we are going to learn names of some things and how to use them. Let's practice first!

Experimenter picks up one object

This is a [actual name of the object (e.g., scissors)].
Can you say [actual name of the object]?
(wait / repeat until the child repeats or nods)
This is to [actual function of the object (e.g., cut a paper)].
What do we use a [actual name of the object] for?
(wait / repeat until the child repeats or nods)
Good. Again,
This is a [actual name of the object].
This is to [actual function of the object].

**Do that for all three objects*

O.K. I think you get all…

Experimenter draws one card from a deck of *Training cards*.
Write the *card ID* on the *training card* in the sheet

Which of these things is [name on the card]?
Please point at [name on the card].
Good! / Great! / etc.
Write the object number pointed at (1, 2, or 3)

**Do that for all three objects.*

Experimenter draws one card from a deck of *Training cards*.
Write the *card ID* on the *training card* in the sheet

Which of these things is used to [function on the card]?
Please point at the thing to [function on the card].
Good! / Great! / etc.
Write the object number pointed at (1, 2, or 3)

**Do that for all three objects.*

Good.
Okay, it seems that you are ready now.

By the way, I forgot to introduce myself.
My name is [ ] and am from [here, Arkansas / a far away from here, Japan].
And all the things I will show you in the game are found in a store in [Arkansas/Japan].

You will get a gift if you do well on this game!
O.K. Are you ready?

**The order of the following test trials A and B should be randomly assigned. (1/2 of each)*

A. Familiar objects trial:

Teacher places 3 familiar objects (pen, driver, key) in order.

Teacher picks up one object

This is a [unfamiliar name of the object (e.g., koba)].
Can you say [unfamiliar name of the object (e.g., koba)]?

(wait / repeat until the child repeats or nods)
This is used to [unfamiliar function of the object (e.g., to make sound)].
What do we use [unfamiliar name of the object (e.g., koba)] for?
(wait / repeat until the child repeats or nods)
Good. Again,
This is a [unfamiliar name of the object].
This is used to [unfamiliar function of the object].

**Do that for all three objects*

O.K. I think you get all…
Shuffle the deck of unfamiliar objects cards

A-1: Testing the name
Experimenter draws one card from a deck of *Test cards A*.
Write the *card ID* on the card in the sheet

Which of these things is [name on the card]?
Please point at [name on the card].
Good! / Great! / etc.
Write the object number pointed at (1, 2, or 3)

**Do that for all three objects.*

Wow. You are good at this, etc.
Shuffle the deck of unfamiliar objects cards

A-2: Testing the function
Experimenter draws one card from a deck of *Test cards A*.
Write the *card ID* on the card in the sheet

Which of these things is used to [function on the card]?
Please point at the thing to [function on the card].
Good! / Great! / etc.
Write the object number pointed at (1, 2, or 3)

**Do that for all three objects.*

B. Novel objects trial:
Teacher places 3 unfamiliar objects on the table.

Teacher picks up one object

This is a [unfamiliar name of the object (e.g., toma)].
Can you say [unfamiliar name of the object (e.g., toma)]?
(wait / repeat until the child repeats or nods)
This is used to [unfamiliar function of the object (e.g., to play music)].

What do we use [unfamiliar name of the object (e.g., toma)] for?
(wait / repeat until the child repeats or nods)
Good. Again,
This is a [unfamiliar name of the object].
This is used to [unfamiliar function of the object].

**Do that for all three objects*

O.K., this is going to be the last game!

B-1: Testing names

Experimenter shuffles the deck of cards.

Experimenter draws one card from a deck of *Test cards B*.
Write the *card ID* on the card in the sheet

Which of these things is [name on the card]?
Please point at [name on the card].
Good! / Great! / etc.
Write the object number pointed at (1, 2, or 3)

**Do that for all three objects.*

B-2: Testing functions

Experimenter shuffles the deck of cards

Experimenter draws one card from a deck of *Test cards B*.
Write the *card ID* on the card in the sheet

Which of these things is used to [function on the card]?
Please point at the thing to [function on the card].
Good! / Great! / etc.
Write the object number pointed at (1, 2, or 3)

**Do that for all three objects.*

Good!
Here is the reward for you!
Thank you for playing the game with us!