

Online Supplemental Materials

This includes two sections, the script for the conversation in the study and regression tables for all analyses.

Section 1.

The conversations between Duoduo and Ms. Elephant, in Mandarin and its English translations.

1. Warm-up trial video

小明： 你好啊！我是小明，这是我的朋友小红。这个是小红的贴纸书。快看，小红的帖子书里面都没有图片。我们来把图片放到小红的贴纸书里面。你能帮帮忙把图片放到小红的贴纸书里面吗？太棒了！我们看看都有些什么图片呢。

Xiaoming: Hello! I'm Xiaoming, and this is my friend, Xiaohong. This is Xiaohong's scrapbook. Look! There are no pictures in Xiaohong's scrapbook. Let's put pictures in Xiaohong's scrapbook. Can you please help us put pictures in Xiaohong's scrapbook? Great! Let's see what we have.

小明： 我好想要自行车啊，你可以把自行车放到贴纸书里面吗？

Xiaoming: I want the bikes. Can you put the bikes in the scrapbook?

小明： 我好想要饼干啊，你可以把饼干放到贴纸书里面吗？

Xiaoming: I want the cookies. Can you put the cookies in the scrapbook?

小明： 现在小红要告诉我们要在贴纸书里面放什么。但是小红的说得不太好，她只会说娃娃语。小红，对吧！

Xiaoming: Now Xiaohong's gonna tell us what to put in the scrapbook. But Xiaohong's Mandarin is not very good. She only speaks puppet talk. Right, Ms. Xiaohong?

小红： 是啊！mou2da2!

Xiaohong: Yes. Mou2da2 (nonsense word).

小明：唉呀！我不知道小红在说什么。小红得教会我们娃娃语。这样的话，我们就能帮她把图片放到贴纸书里面了。小红，你能来帮帮我们吗？你能教我们一下娃娃语吗？

Xiaoming: Oh no! I don't know what Xiaohong is saying. Xiaohong's got to teach us some puppet talk. This way, we can help her put the pictures in the scrapbook. Xiaohong, can you help us? Can you teach us some puppet talk?

小红：好啊！

Xiaohong: OK!

2. Familiarization phase; part 1. This set of videos is meant to 1) teach a novel word and 2) introduce the format of questioning, which involves selecting the referent two times. Before the second selection, an opportunity to get help is offered. Children can either get help or decline.

Video 1. 小红：这是一只 suo3cai2。

Xiaohong: This is a suo3cai2.

Video 2. 小红：我想要 suo3cai2。你知道 suo3cai2 是哪个吗？

I want the suo3cai2. Do you know which one's suo3cai2?

Video 3. 小红：你做得真棒！等一下我们会再选一次。在这之前，你可以选择需要帮助，或者不需要帮助。如果你对答案很确定的话，可以选择不需要帮助。如果你对答案不确定的话，可以选择需要帮助。

Xiaohong: You did great! We are going to select one more time. Before we do that, you can choose that you need help, or you don't need help. If you are sure about the answer, you can choose not to get help. If you are unsure about the answer, you can choose to get help.

Video 4. 小红：现在我们要再选一次。选之前，你需要帮助吗？

Xiaohong: Now, we will choose again. Before you choose, do you need help?

Video 4. 小红: 我想要 suo3cai2。你知道 suo3cai2 是哪个吗?

Xiaohong. I want the suo3cai2. Do you know which one's suo3cai2?

3. Familiarization phase; part 2. This second set of trials asks for the referent of a novel word that has never been taught, and we expect children to get help. We end this section by testing a known word (window), which allows children to skip getting help for this one.

小红: 我想要 leng3gen1。你知道 leng3gen1 是哪个吗?

Xiaohong: I want the leng3gen1. Do you know which one's leng3gen1?

小红: 现在我们要再选一次。选之前, 你需要帮助吗?

Xiaohong: Now we'll select again. Before we do that, do you need help?

小红: 我想要 leng3gen1。你知道 leng3gen1 是哪个吗?

Xiaohong: I want the leng3gen1. Do you know which one's leng3gen1?

小红: 我想要 gan3suan4。你知道 gan3suan4 是哪个吗?

Xiaohong: I want the gan3suan4. Do you know which one's gan3suan4?

小红: 现在我们要再选一次, 选之前, 你需要帮助吗?

Xiaohong: Now we'll select again. Before we do that, do you need help?

小红: 我想要 gan3suan4,你知道 gan3suan4 是哪个吗?

Xiaohong: I want the gan3suan4. Do you know which one's gan3suan4?

小红: 我想要窗户, 你知道窗户是哪个吗?

Xiaohong: I want the window. Do you know which one's the window?

小红: 现在我们要再选一次, 选之前, 你需要帮助吗?

Xiaohong: Now we'll select again. Before we do that, do you need help?

小红: 我想要窗户, 你知道窗户是哪个吗?

Xiaohong: I want the window. Do you know which one's the window?

4. Familiarization phase; part 3. This last set of familiarization trials allows children to practice learning novel words and asks children to answer questions about them.

小红：这是一只 da2si4

Xiaohong: This is a da2si4.

小红：这是一个 wu2jia2

Xiaohong: This is a wu2jia2.

小红：这是一只 bing1cai2

Xiaohong: This is a bing1cai2.

小红：这是一只 da2si4

Xiaohong: This is a da2si4.

小红：这是一个 wu2jia2

Xiaohong: This is a wu2jia2.

小明：你做得真棒，你觉得你的玩偶语学得怎么样啊？选择一个表情来给自己打分吧！

Xiaoming: You did great! How do you feel about your learning of the puppet talk? Select an emoticon to rate yourself!

小红：我想要 wu2jia1,你知道 wu2jia1 是哪个吗？

Xiaohong: I want the wu2jia1. Do you know which one's wu2jia1?

小红：现在我们要再选一次，选之前，你需要帮助吗？

Xiaohong: Now we'll select again. Before we do that, do you need help?

小红：我想要 wu2jia1,你知道 wu2jia1 是哪个吗？

Xiaohong: I want the wu2jia1. Do you know which one's wu2jia1?

小红：我想要 bing1cai1,你知道 bing1cai1 是哪个吗？

Xiaohong: I want the bing1cai1. Do you know which one's bing1cai1?

小红：现在我们要再选一次，选之前，你需要帮助吗？

Xiaohong: Now we'll select again. Before we do that, do you need help?

小红：我想要 bing1cai1,你知道 bing1cai1 是哪个吗？

Xiaohong: I want the bing1cai1. Do you know which one's bing1cai1?

小红：我想要 da2si4,你知道 da2si4 是哪个吗？

Xiaohong: I want the da2si4. Do you know which one's da2si4?

小红：现在我们要再选一次，选之前，你需要帮助吗？

Xiaohong: Now we'll select again. Before we do that, do you need help?

小红：我想要 da2si4,你知道 da2si4 是哪个吗？

Xiaohong: I want the da2si4. Do you know which one's da2si4?

5. Familiarization phase ends; transition videos.

小明：真有意思啊！现在小红想把更多的东西放到贴纸书里头了。

Xiaoming: That was so fun! Now, Xiaohong wants to put more things in the scrapbook.

小红：是的。

Xiaohong: Yes.

小明：太好了。小红会教会我们更多的娃娃语。

Xiaoming: Great! Xiaohong will teach us more puppet talk.

Section 2.

Regression tables for all analyses.

1. Mixed effect logistic regression looking at the level of accuracy for query time 1, with a fixed effect of using help (1 = need help, 0 = don't need help) , where the random effect is a by-subject random intercept.

	beta	s.e. for beta	z	p	ci(lower)	ci(upper)
1.needhelp	-0.944	0.238	-3.96	<0.001	-1.411	-0.476
constant	0.320	0.161	1.99	0.047	0.004	0.636

2. Mixed effect logistic regression looking at the interaction of the two binary variables and their main effects, where the random effect is a by-subject random intercept.

	beta	s.e. for beta	z	p	ci(lower)	ci(upper)
1.needhelp	-1.048	0.223	-4.71	<0.001	-1.484	-0.612
2.times	-0.011	0.147	-0.07	0.941	-0.299	0.278
needhelp#times	1.400	0.252	5.55	<0.001	0.905	1.894
constant	0.378	0.164	2.3	0.021	0.056	0.701

3. Mixed effect linear regressions looking at RT with a fixed effect of the correctness of the word referent question during query time 1 and a random effect is a by-subject random intercept.

	beta	s.e. for beta	z	p	ci(lower)	ci(upper)
1.correct_time1	-1.792	0.226	-7.93	<0.001	-2.235	-1.349
constant	7.546	0.259	29.14	<0.001	7.038	8.053

4. Mixed effect linear regressions looking at RT with a fixed effect of the asking for help and a random effect is a by-subject random intercept.

	beta	s.e. for beta	z	p	ci(lower)	ci(upper)
1.needhelp	1.754	0.317	5.54	<0.001	1.133	2.374
constant	6.032	0.245	24.61	<0.001	5.552	6.513

Section 3. Descriptive statistics for accuracy and RT

Accuracy of the first-time word-referent query over whether help was accepted

		mean	se
correct	don't need help	0.549	0.024
correct	need help	0.397	0.032
incorrect	don't need help	0.451	0.024
incorrect	need help	0.603	0.032

Accuracy of the second-time word-referent query over whether help was accepted

		mean	se
correct	don't need help	0.547	0.024
correct	need help	0.699	0.030
incorrect	don't need help	0.453	0.024
incorrect	need help	0.301	0.030

Accuracy of the referent-selection broken down by help-seeking and the number of word-referent query

		mean	se
don't need help	first inquiry	0.549	0.024
don't need help	second inquiry	0.547	0.024
need help	first inquiry	0.397	0.032
need help	second inquiry	0.699	0.030

Mean RT based on the accuracy of responses

	mean	se
RT for correct responses	7.535	0.183
RT for incorrect response	5.792	0.159

Section 4. Descriptive statistics for accuracy and RT of the three novel words taught during the familiarization phase

	mean	se
Accuracy of the first-time word-referent query	0.889	0.024
Rate of needing help	0.236	0.020
Accuracy of the second-time word-referent query	0.910	0.070