

# Inherent linguistic preference outcompetes incidental alignment in cooperative partner choice

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## Supplementary Materials

### 1. Relevelled models

Here we report relevelled models based on the model reported in the main manuscript: Condition \* Participant Group + (1 + Condition|Participant) + (1 + Condition |Pictured Scenario). The respective reference levels are indicated in the table captions. Those relevelled models help model interpretation since the effects of all individual predictors and their respective levels can be directly visible in the model output. For example, in Supplementary table 1, looking at the intercept, one can see a significant difference from 0, indicating that the results of the preference group in the test condition significantly differ from chance performance.

**Supplementary table 1.** Results of the linear mixed model exploring the effects of test condition and participant group on cooperation partner choice in a 2-alternative-forced choice task. The table reports estimated model coefficients (Estimate), standard errors (SE), z-values (z) and p-values (p). **Reference levels: preference group, test condition.**

Full Model	Estimate	SE	z	p
Intercept	1.85	0.35	5.31	< 0.001
Condition_Control	-1.75	0.38	-4.65	< 0.001
ParticipantGroup_Dispreference	-2.41	0.44	-5.45	< 0.001

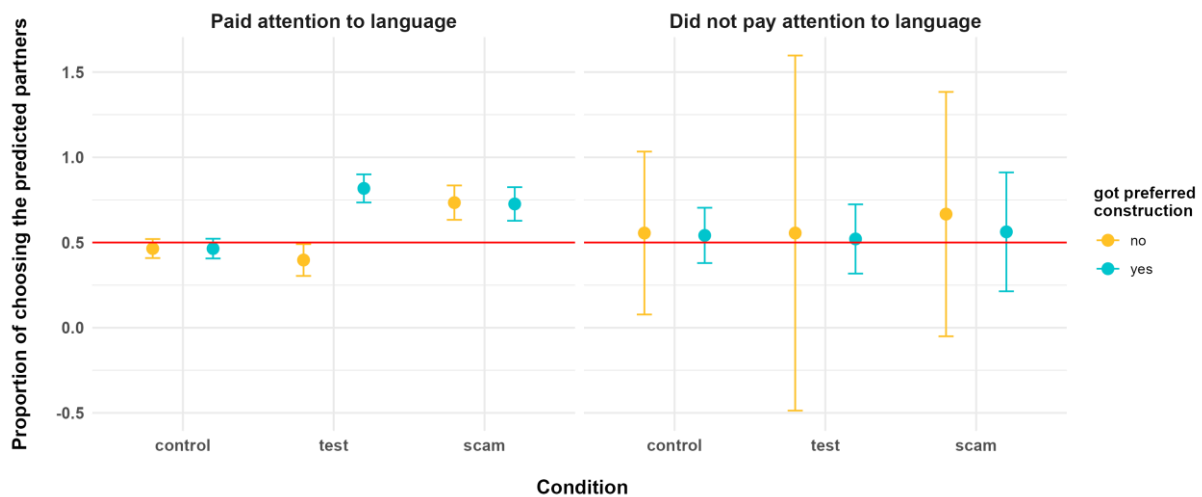
<b>Condition_Control:ParticipantGroup_Dispreference</b>	2.43	0.49	5.00	< 0.001
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**Supplementary table 2.** Results of the linear mixed model exploring the effects of test condition and participant group on cooperation partner choice in a 2-alternative-forced choice task. The table reports estimated model coefficients (Estimate), standard errors (SE), z-values (z) and p-values (p). **Reference levels: dispreference group, test condition.**

<b>Full Model</b>	<b>Estimate</b>	<b>SE</b>	<b>z</b>	<b>p</b>
<b>Intercept</b>	-0.56	0.31	-1.81	0.069
<b>Condition_Control</b>	0.68	0.34	1.99	0.046
<b>ParticipantGroup_Preference</b>	2.41	0.44	5.45	< 0.001
<b>Condition_Control:ParticipantGroup_Preference</b>	-2.43	0.49	-5.00	< 0.001

## 2. Exploring potential effects of paying attention to the partners' language use

In the post-experiment questionnaire, 89 participants reported to have paid attention whereas 11 participants reported to not have paid attention to their partners' language use. Here, we explore if paying attention to language may have played a role in participants' partner choice. Supplementary Figure 1 shows participants' partner choices separately for the two groups, i.e. for participants who reported having paid attention to their partners' language vs. for participants who reported not having paid attention to their partners' language.



**Supplementary figure 1.** Proportions of choosing the predicted partner (i.e. the aligned partner in the test condition, a random partner in the control condition and the correct partner in the scam condition) in the three experimental conditions. The left panel shows data from participants who paid attention to their partners' language, and the right panel shows data from participants who did not. Points and whiskers indicate the mean and 95% confidence intervals of participants' responses. Non-overlapping confidence intervals indicate significant differences between the groups. Confidence intervals that do not overlap with the red line at  $y = 0.50$  indicate significant differences from chance performance.

We also executed the main generalized linear mixed effects model, i.e.  $\text{Condition} * \text{Participant Group} + (1 + \text{Condition}|\text{Participant}) + (1 + \text{Condition}|\text{Pictured Scenario})$ , separately for the two groups. Supplementary table 3 reports the results of the model being applied to only those participants who paid attention to language. Supplementary table 4 reports the results of the model being applied to only those participants who did not pay attention to language.

The model for participants who paid attention to the language used by their partners yields essentially the same results as the model for the overall data. The model for participants who did not pay attention to language does not yield any significant results. This suggests that the effect is stronger for participants who actively pay attention to the language used by their partners than for those who make their decisions without actively paying attention to the language used. However, it has to be noted that there were more participants who paid attention to their partners' language (89 participants) than participants who didn't (11 participants). Thus, because of the low number of participants in the latter group, those results are inconclusive and have to be interpreted with caution.

**Supplementary table 3.** Results of the linear mixed model based on data from those **participants that paid attention to their partners' language**. The model explores the effects of test condition and participant group on cooperation partner choice in a 2-alternative-forced choice task. The table reports estimated model coefficients (Estimate), standard errors (SE), z-values (z) and p-values (p). Reference levels: preference group, control condition.

Full Model	Estimate	SE	z	p
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<b>Intercept</b>	0.14	0.13	1.12	0.264
<b>Condition_Test</b>	2.19	0.45	4.87	< 0.001
<b>ParticipantGroup_Dispreference</b>	0.00	0.18	-0.01	0.994
<b>Condition_Test:ParticipantGroup_Dispreference</b>	-2.97	0.56	-5.30	< 0.001

**Supplementary table 4.** Results of the linear mixed model based on data from those **participants that did not pay attention to their partners' language**. The model explores the effects of test condition and participant group on cooperation partner choice in a 2-alternative-forced choice task. The table reports estimated model coefficients (Estimate), standard errors (SE), z-values (z) and p-values (p). Reference levels: preference group, control condition.

<b>Full Model</b>	<b>Estimate</b>	<b>SE</b>	<b>z</b>	<b>p</b>
<b>Intercept</b>	-0.17	0.29	-0.58	0.564
<b>Condition_Test</b>	0.25	0.51	0.49	0.622
<b>ParticipantGroup_Dispreference</b>	-0.06	0.56	-0.10	0.920
<b>Condition_Test:ParticipantGroup_Dispreference</b>	0.25	1.00	0.25	0.802

### 3. Results of the open questions in the post-experiment questionnaire

Here, we show a subset of the participants' answers to the two open questions in the post-experiment questionnaire ("What have you noticed about the other players' language use?" and "Which variables influenced your partner choice?"). The full set of the participants' answers can be found in the datafile uploaded on osf (<https://osf.io/2qnm/>).

**Supplementary table 5.** A subset of representative participants' answers to the question "What have you noticed about the other players' language use?" in the post-experiment questionnaire.

**Manipulation not noticed**

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**Manipulation noticed**

"Nothing"	"Some had better grammar than others"	"Either 'lend x to y' or 'lend y a x'"
"Not sure"	"The order of the phrase/sentences was more difficult to read"	"Different ways of saying the same sentence"
"Not much"	"Some identical sentences were worded differently"	

**Supplementary table 6.** A subset of representative participants' answers to the question "Which variables influenced your partner choice?" in the post-experiment questionnaire.

**Random partner choice**

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**Partner choice based on language use**

"Random"	"How well they structured their sentences"	"If the sentence was complete and correct"
"Intuition"	"What sounded best"	"The order of words in the sentence"
"Not much"	"Grammar felt more understandable"	"I picked the ones where the subject was then presenting an object to the second subject"
		"The grammar in the sentence, like how I would say it"
		"The order in which information was given (Person A, action, item person B) e.g. Fisherman lends item to lawyer"