

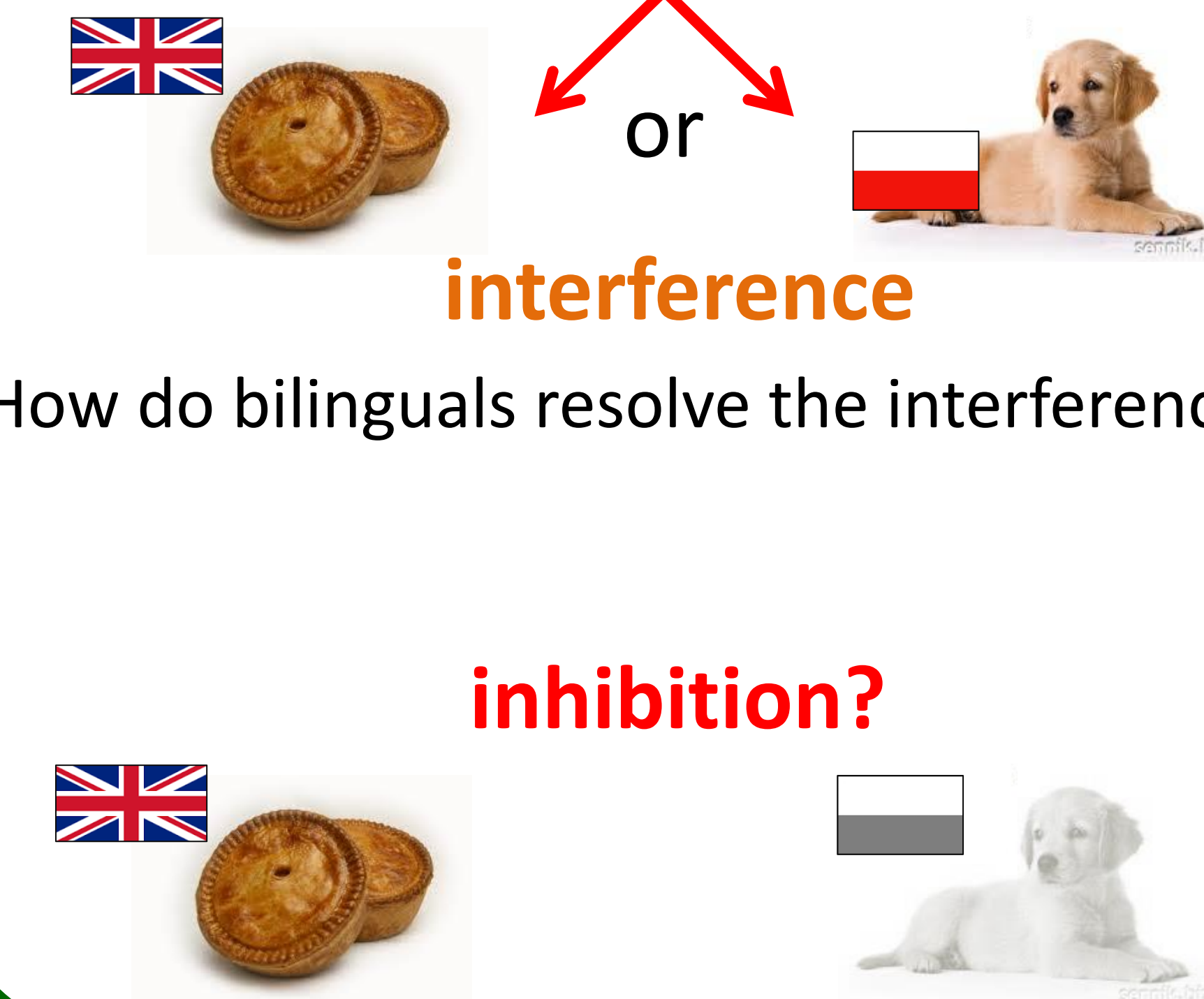
# Does intensive L2 learning modify between-language interference in bilingual comprehension? Evidence from a longitudinal study with interlingual homographs

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### Background

Look at the **pies!**



or

**interference**

How do bilinguals resolve the interference?

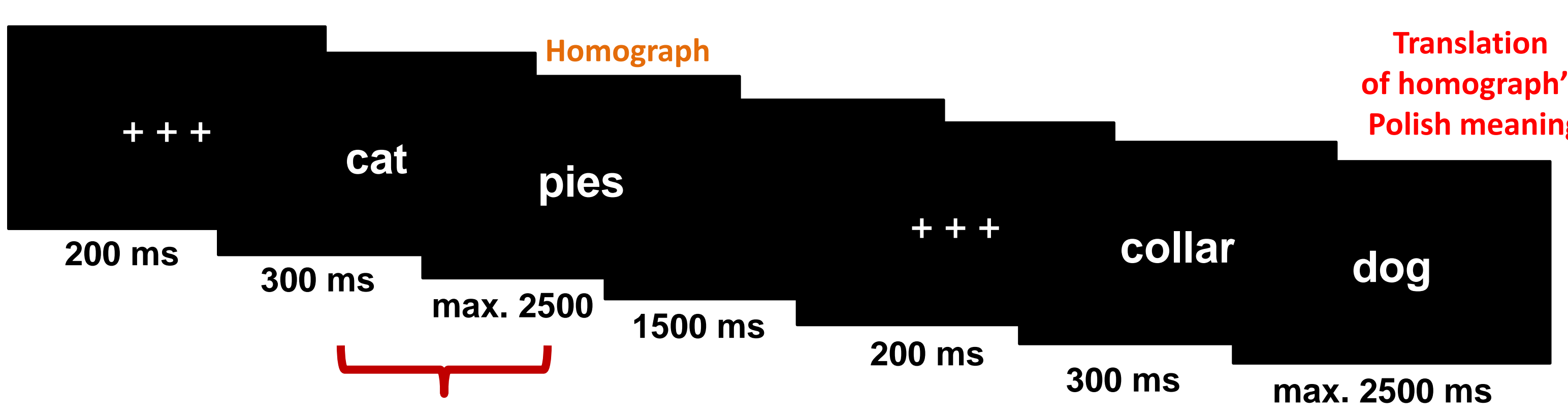
**inhibition?**

Intensive L2 exposure & learning

**Interlingual homographs in bilingual comprehension**

### Task design & procedure

Task: Decide if presented pairs of English words are semantically related based on Macizo, Bajo, Martin, 2010



200 ms 300 ms max. 2500 1500 ms 200 ms 300 ms max. 2500 ms

+++ cat pies +++ collar dog

Homograph Translation of homograph's Polish meaning

Condition	First pair	Second pair
Homograph	Translation	<i>pies*</i> - <i>cat</i> / <i>dog**</i> - <i>collar</i>
Homograph	NoTranslation	<i>pies*</i> - <i>cat</i> / <i>neck</i> - <i>collar</i>
NoHomograph	Translation	<i>art</i> - <i>cat</i> / <i>dog**</i> - <i>collar</i>
NoHomograph	NoTranslation	<i>art</i> - <i>cat</i> / <i>neck</i> - <i>collar</i>

\* homograph: „pies” means „dog” in Polish  
\*\* translation of the homograph's Polish meaning

**INDICES**

- First pair: **INTERFERENCE INDEX**  
RT: (Homograph) minus (NoHomograph)
- Second pair: **INHIBITION INDEX**  
RT: (Translation after Homograph) minus RT (Translation after NoHomograph)

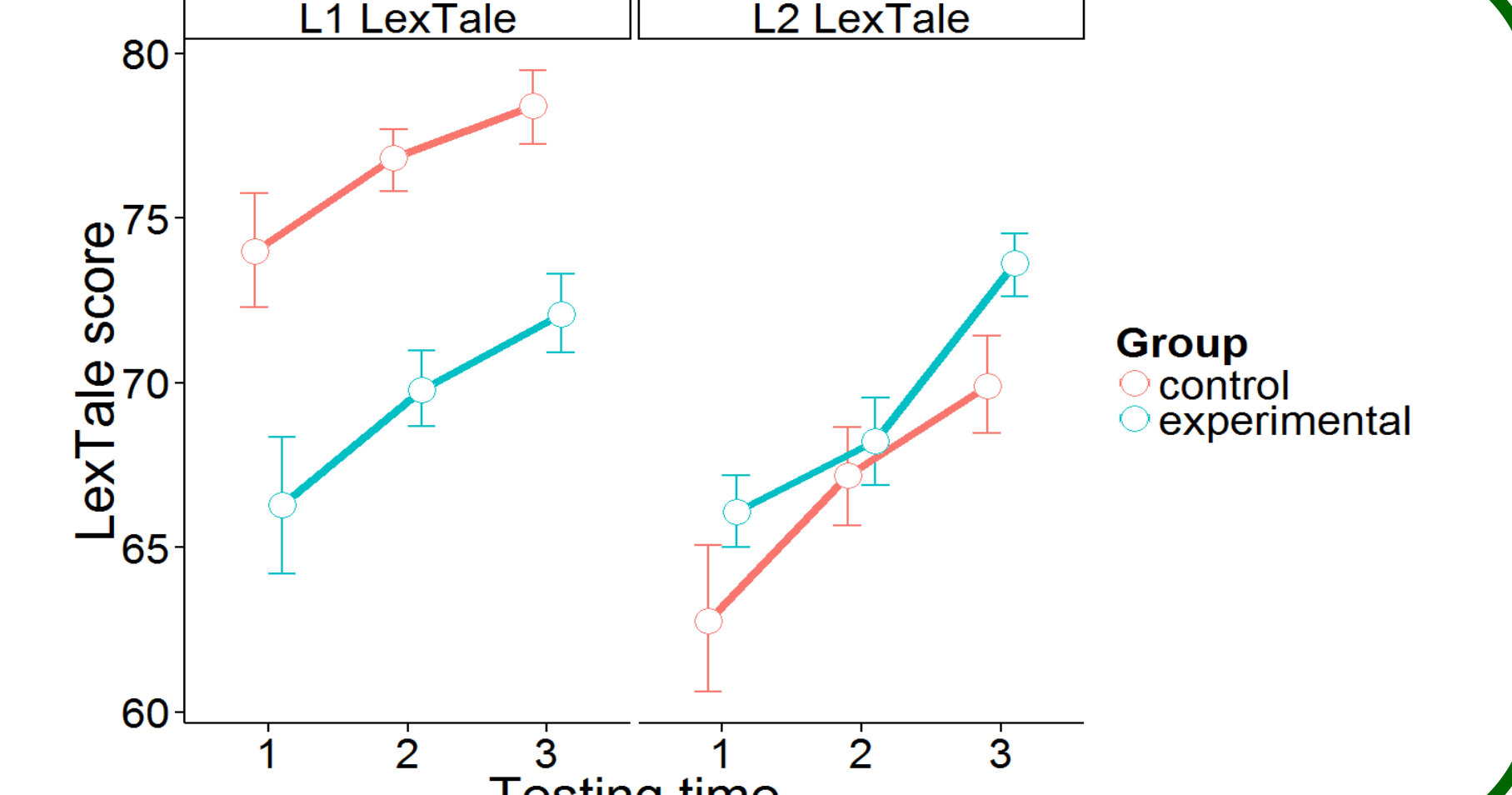
- words always unrelated in English;
- elicits **INTERFERENCE** between Polish and English homograph's meanings
- words always related in English;
- shows **INHIBITION** of the Polish homograph's meaning

### Participants

- High school students, unbalanced Polish (L1) -English (L2) bilinguals
- mean age = 16,3 y.o.
- Experimental group : intensive exposure to L2, content lessons in L2 & L1
- Control group: content lessons only in L1; L2 taught only as a foreign language

	Experimental group	Control group
N	34	27
Number of L2 lessons per week	12	4

- Longitudinal design: 3 testing times during 1,5 y
- L1 and L2 proficiency in stages 1-3 measured with vocabulary test LexTALE (Lemhöfer & Broersma, 2012)



L1 LexTale L2 LexTale

LexTale score

Testing time

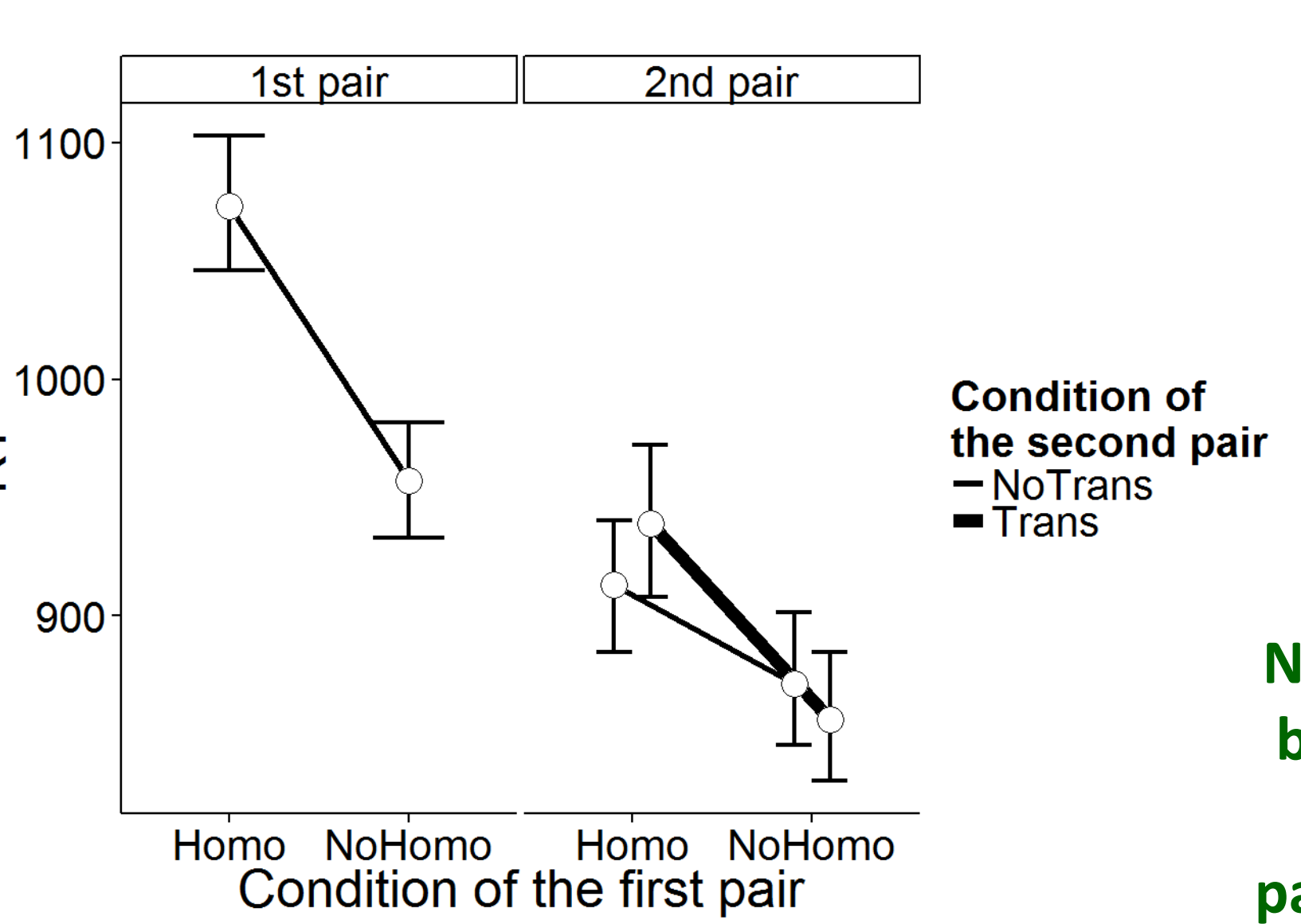
Group: control (red), experimental (blue)

### Predictions

- Interference index > 0
- Inhibition index > 0
- For both groups both indices should decrease with each testing time due to increasing L2 proficiency
- Both indices should be smaller for the experimental group due to greater L2 exposure

### Results

#### Mean RTs in three stages



RT

1100 1000 900

1st pair 2nd pair

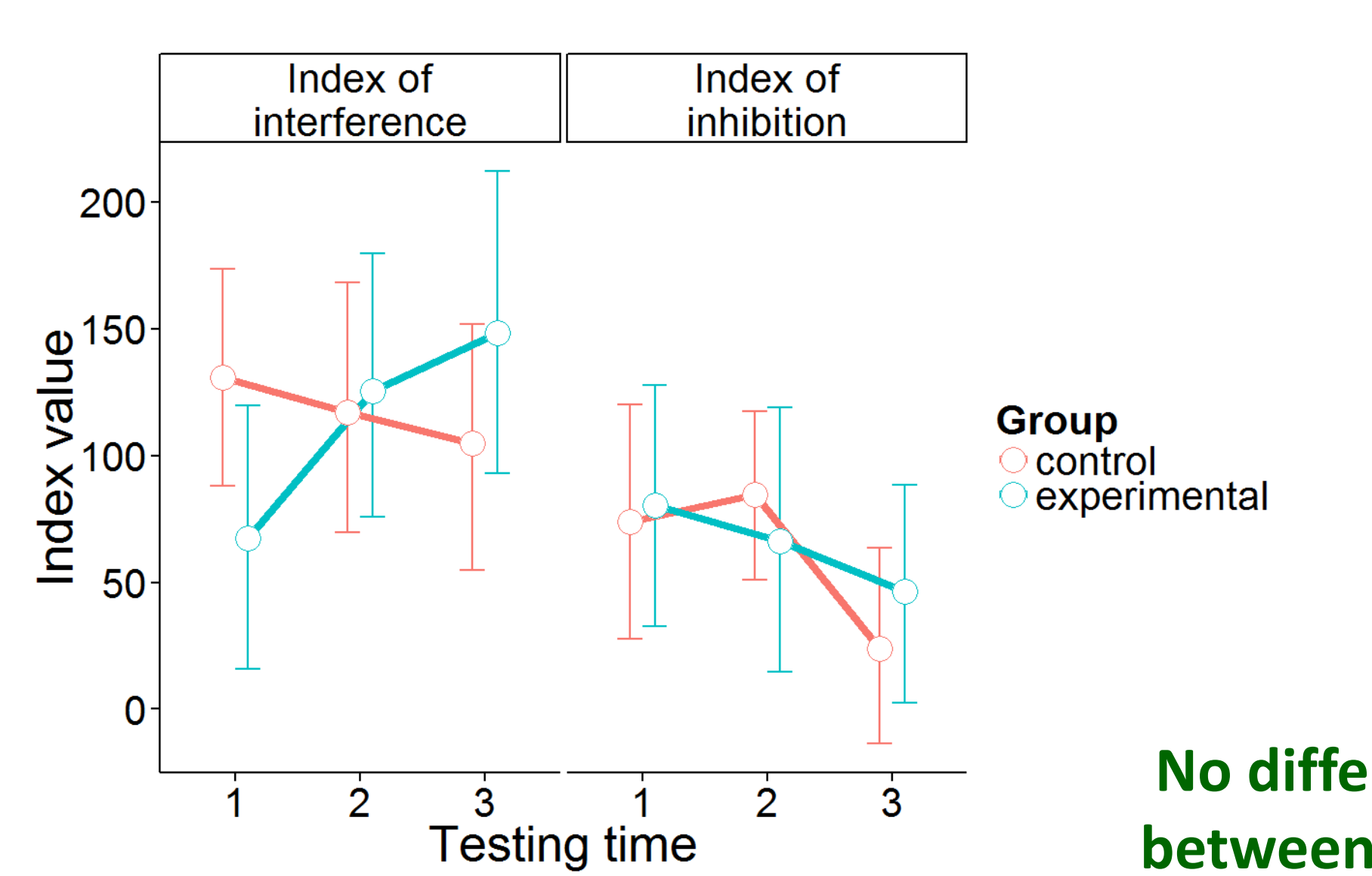
Homo NoHomo Homo NoHomo

Condition of the first pair

Condition of the second pair: NoTrans (black), Trans (grey)

**No interaction between first and second pair conditions**

#### Interference & inhibition effects in both groups in three testing times



Index of interference Index of inhibition

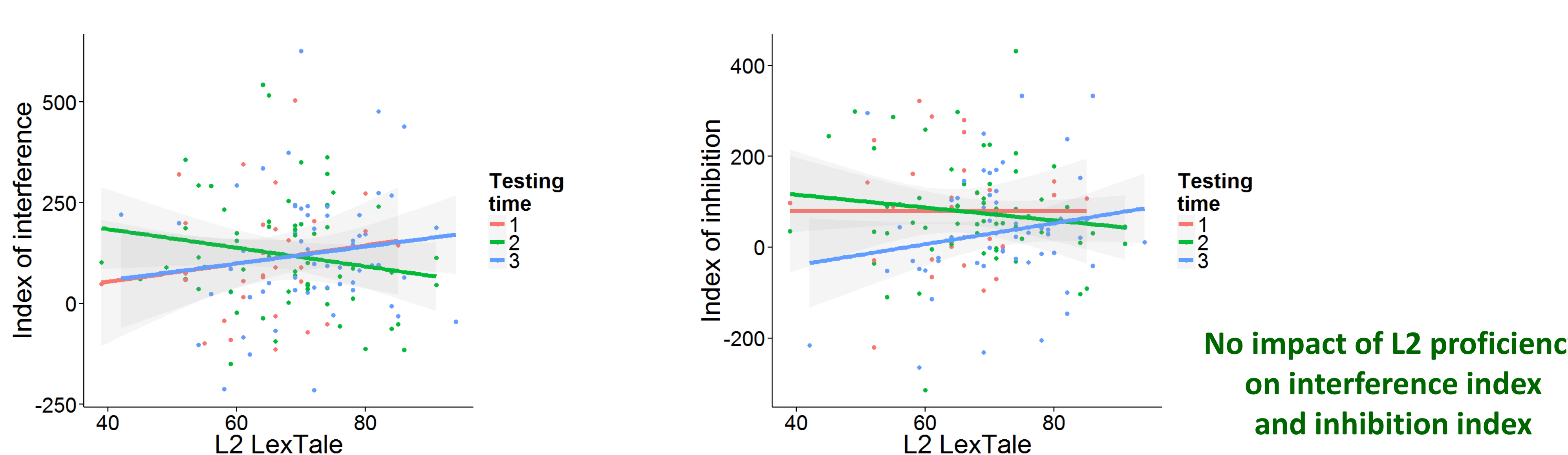
Index value

Testing time

Group: control (red), experimental (blue)

**No differences between groups**

#### Interference & inhibition effects and L2 proficiency in three testing times



Index of interference Index of inhibition

L2 LexTale

Testing time: 1 (red), 2 (green), 3 (blue)


**No impact of L2 proficiency on interference index and inhibition index**

### Conclusions

- The semantic verification task provides:
  - evidence for **nonspecific activation** of L1 & L2 IHs meanings
  - lack of clear evidence for **inhibition** of irrelevant IHs meanings
  - lack of expected interaction between conditions in the 2nd and 1st pair suggests **wider scope of inhibition** than expected: of a whole semantic category rather than of a single concept
- Time and group effects:
  - No differences between groups: possibly due to too small difference in L2 exposure between groups
  - No differences between stages: possibly due to too low L2 exposure and too small increase of L2 proficiency in both groups
- Cross-language interference as a robust phenomenon not easily modified by increasing L2 proficiency or L2 exposure.

### Acknowledgements

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