



# COMPREHENSION OF SPATIAL CONSTRUCTIONS BY RUSSIAN-AMERICAN BILINGUALS

Anna Chrabaszcz, Olga Dragoy

Neurolinguistics Lab, National Research University Higher School of Economics, Russia

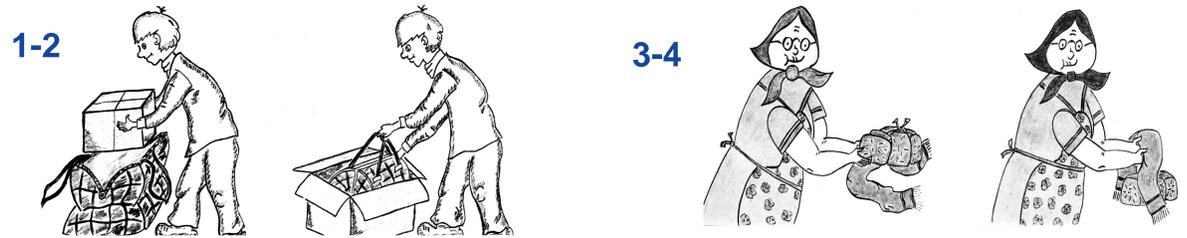


## 1. Introduction

- The language of a bilingual is a reorganized system that includes features of both L1 and L2, as well as features resulting from their interaction (Montrul, 2008)
- We examine influence of L2 on comprehension of spatial constructions in L1
- Monolinguals have been shown to rely on motor stereotypes for interpretation of spatial constructions (Chrabaszcz et al., 2017; Dragoy et al., 2016; Laurinavichyute et al., 2017; Luria, 1962)
- A **motor stereotype (MS)** is a prototypical, habitual and frequent sequence of manipulations with real-world objects (Dragoy et al., 2016)

## 4. Materials and procedure

Cond	Example	MS	WO	Construction
1	The boy is putting the bag into the box	direct	direct	prepositional
2	The boy is putting into the box the bag	indirect	indirect	prepositional
3	The grandmother is covering the hat with the scarf	indirect	direct	instrumental
4	The grandmother is covering with the scarf the hat	direct	indirect	instrumental



### Stimuli:

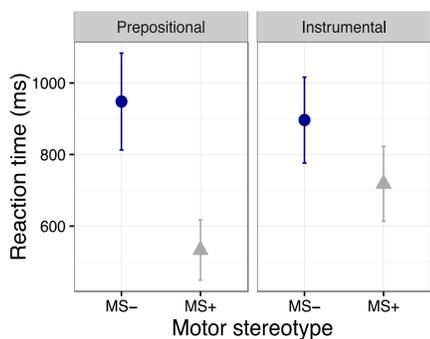
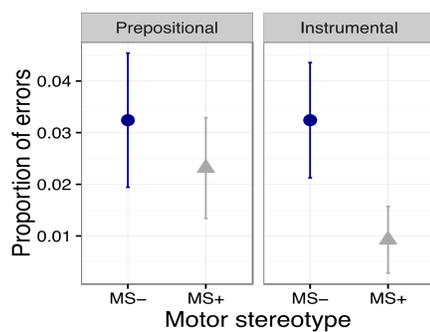
- 48 reversible sentences, 24 irreversible fillers
- 24 prepositional, 24 instrumental constructions
- 2 lists

### Procedure:

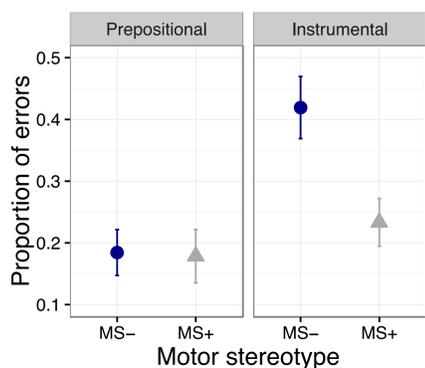
- Sentence-picture matching
- Presentation in DMDX

## 2. Previous findings

### A. Monolingual group: adults



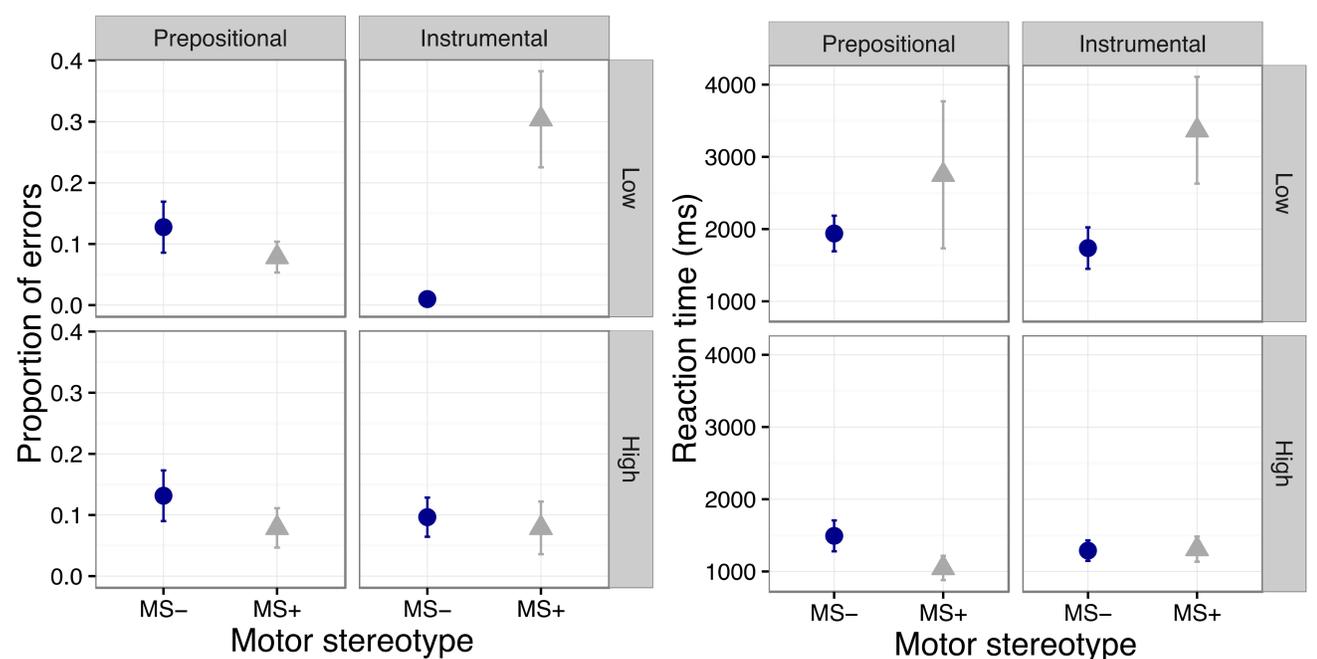
### B. Monolingual group: children



## 3. Participants

- Russian-American heritage speakers (n=36; 16 males; mean age = 21.69 (3.6)) resided in the U.S. and had at least one Russian parent
- Each participant completed a Russian cloze test (max score 25). Mean score = 20.36 (~Intermediate High level on ACTFL);
- Two subgroups formed by median split: with higher ( $\geq 21$ ) and lower ( $< 21$ ) Russian proficiency

## 6. Results



## 3. Research question

**Do Russian-American bilingual (heritage) speakers use the strategy of motor stereotype for comprehension of spatial constructions similarly to monolingual speakers?**

**YES** → reliance on MS is a universal processing strategy; resistant to change.  
**NO** → reliance on MS is language-specific; subject to change in the face of language interference

## 6. Conclusions

- Bilingual speakers made more errors in prepositional sentences with indirect WO than in instrumental sentences with direct WO when WO did not align with MS (MS-); speakers with lower Russian proficiency made more errors in instrumental sentences with indirect WO even though WO and MS aligned (MS+)
- Lower proficiency group processes instrumental constructions with indirect WO more slowly even though WO and MS aligned (MS+)
- Differences in monolingual and bilingual processing of spatial constructions
- These results suggest that linguistic processing can be shaped by sensorimotor experience during monolingual acquisition if a language makes contrast between the sensorimotor and the reversed scenarios (such as Russian). But this pattern can be abandoned or not emerged under the influence of a more dominant language, which does not encode the difference (such as English).