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## Conceptualization in process: Motion event processing in English and French

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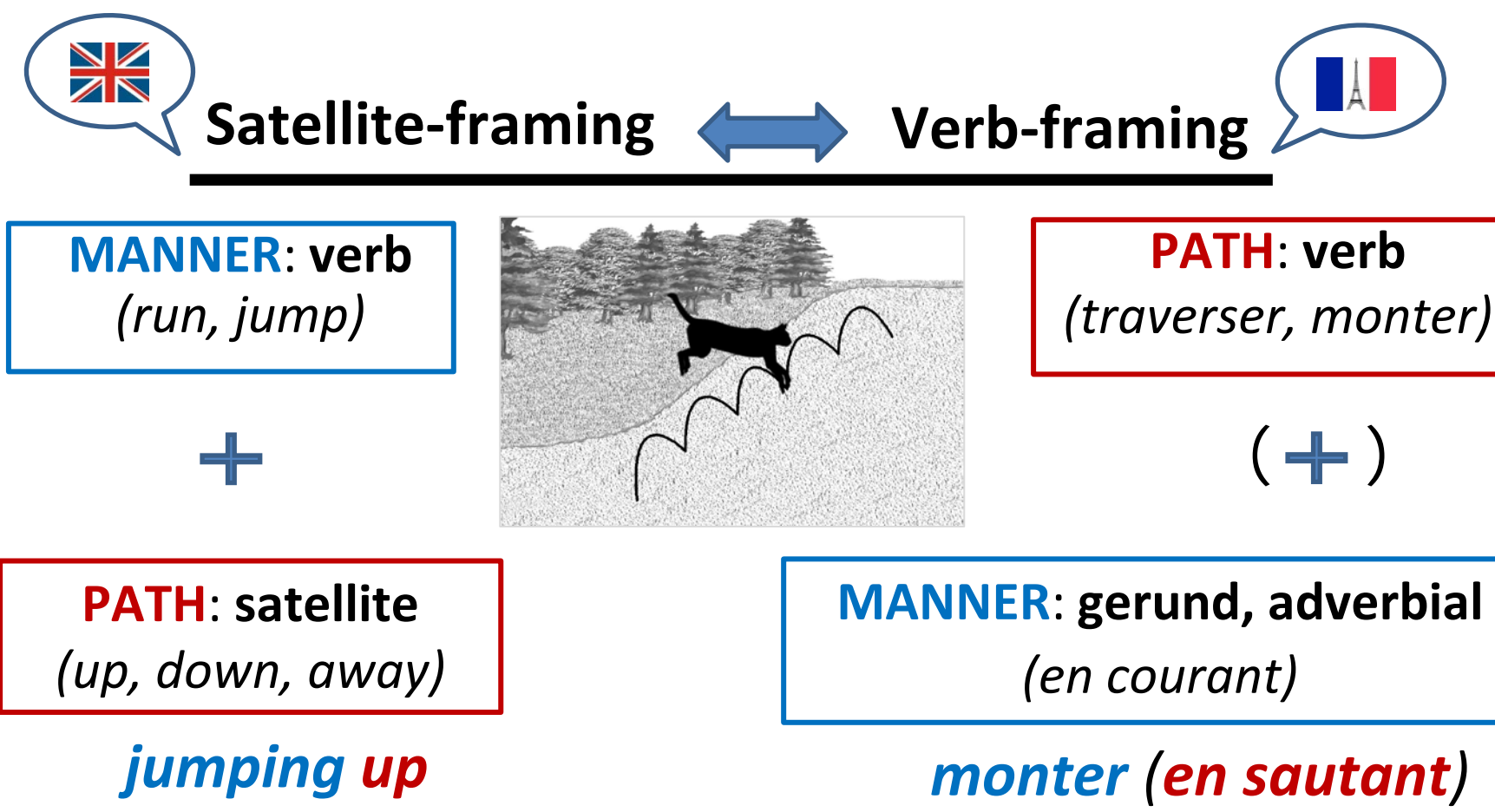
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### Introduction

#### Thinking-for-speaking hypothesis [1,2]

- Language as filter on event construal
- Language-specific encoding patterns affect attention allocation during online speech processes
- Routinely encoded aspects of reality are more salient to speakers
- Effect on children's conceptual and linguistic development [3,4]

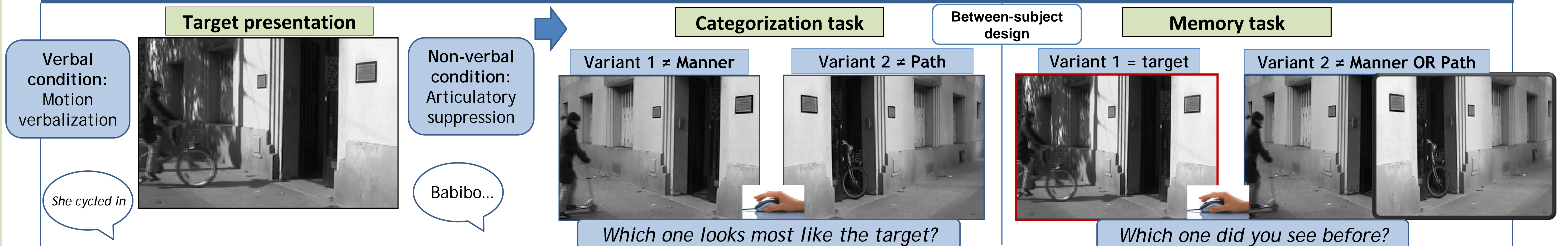
### Motion Event Typology [5]



### Research Questions

- ❖ Q1: Do cross-linguistic differences in motion expression affect motion event processing?
- ❖ Q2: Which domains of cognition are affected and in what condition (verbal and/or non-verbal)?
- ❖ Q3: Does typology impact children's linguistic and conceptual development of motion representation?

### Materials & Procedure



### Eye-tracking: Dynamic AOIs



Fig 1. Definition of dynamic zones of interest

- Tobii X120 head-free binocular remote desktop eye-tracker (120 Hz)
- Dynamic AOIs hand-drawn for each stimulus, allowing precise monitoring of fixations

### Hypotheses

- **Categorization:** Manner criterion EN > FR
- **Memory:** Manner recognition errors FR > EN
- **Gaze pattern:** Total fixation duration on Manner-relevant AOI EN > FR

### Participants

Adults	NV English	VE English	NV French	VE French
<b>Categorization</b>	22	19	18	19
<b>Memorization</b>	19	20	19	18

### Results eye movements [6,7]

#### Fixation duration during viewing for production

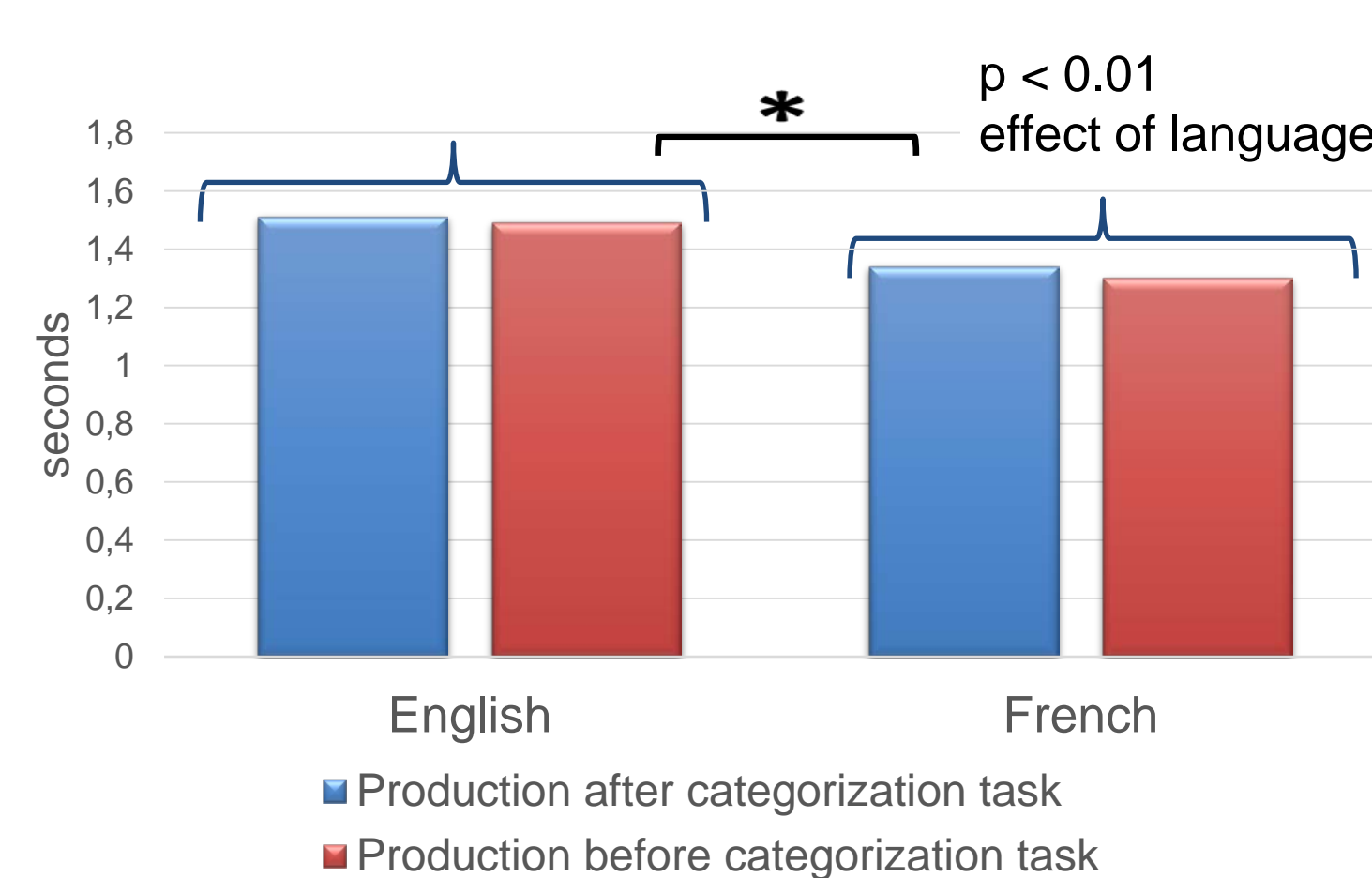


Fig 2. Total fixation duration (means) on Manner-AOI (Legs)

#### Fixation duration during categorization

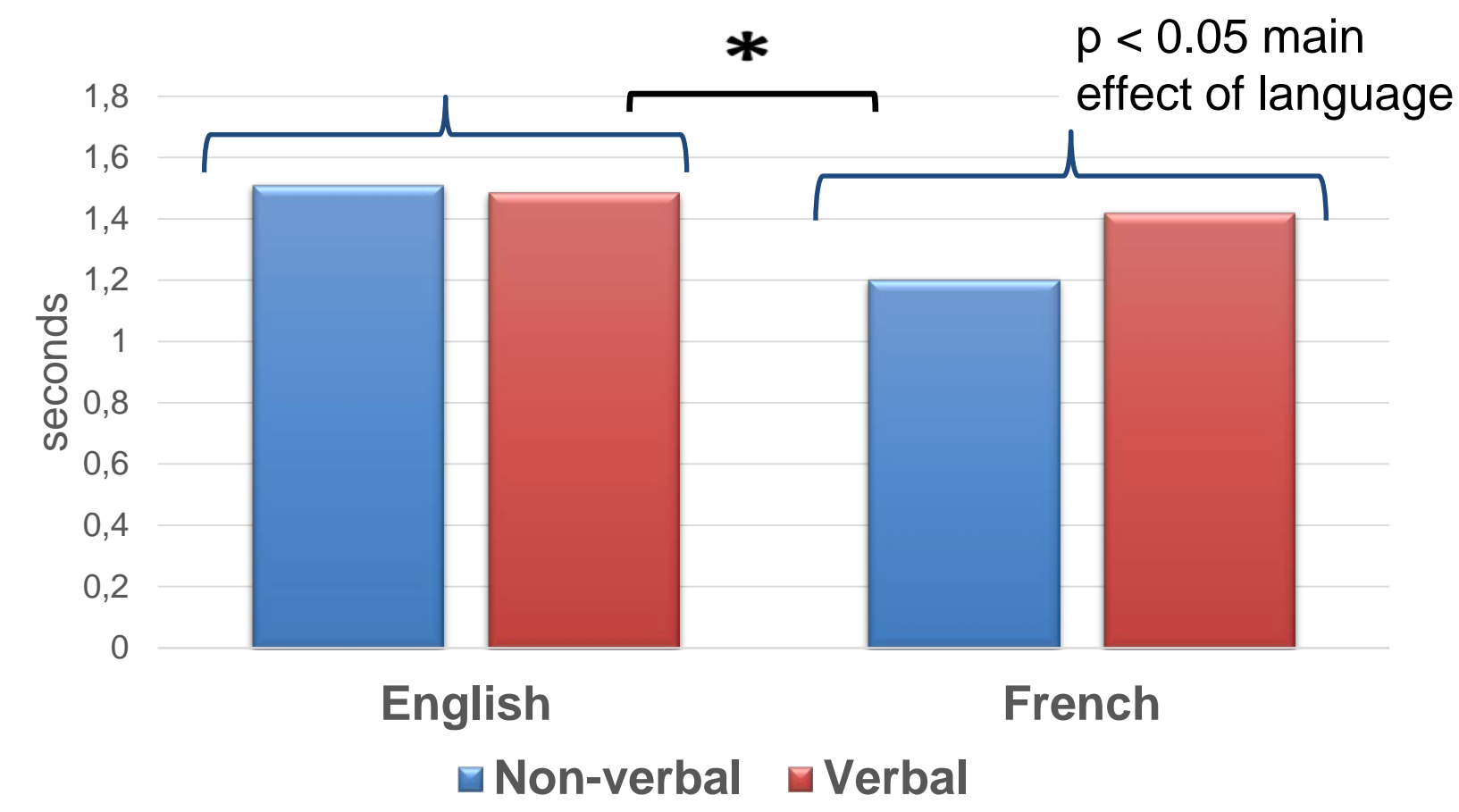


Fig 3. Total fixation duration (means) on Manner-AOI (Legs)

#### Fixation duration memorization: No sig. differences

### Results offline measures

#### Categorization: Manner responses

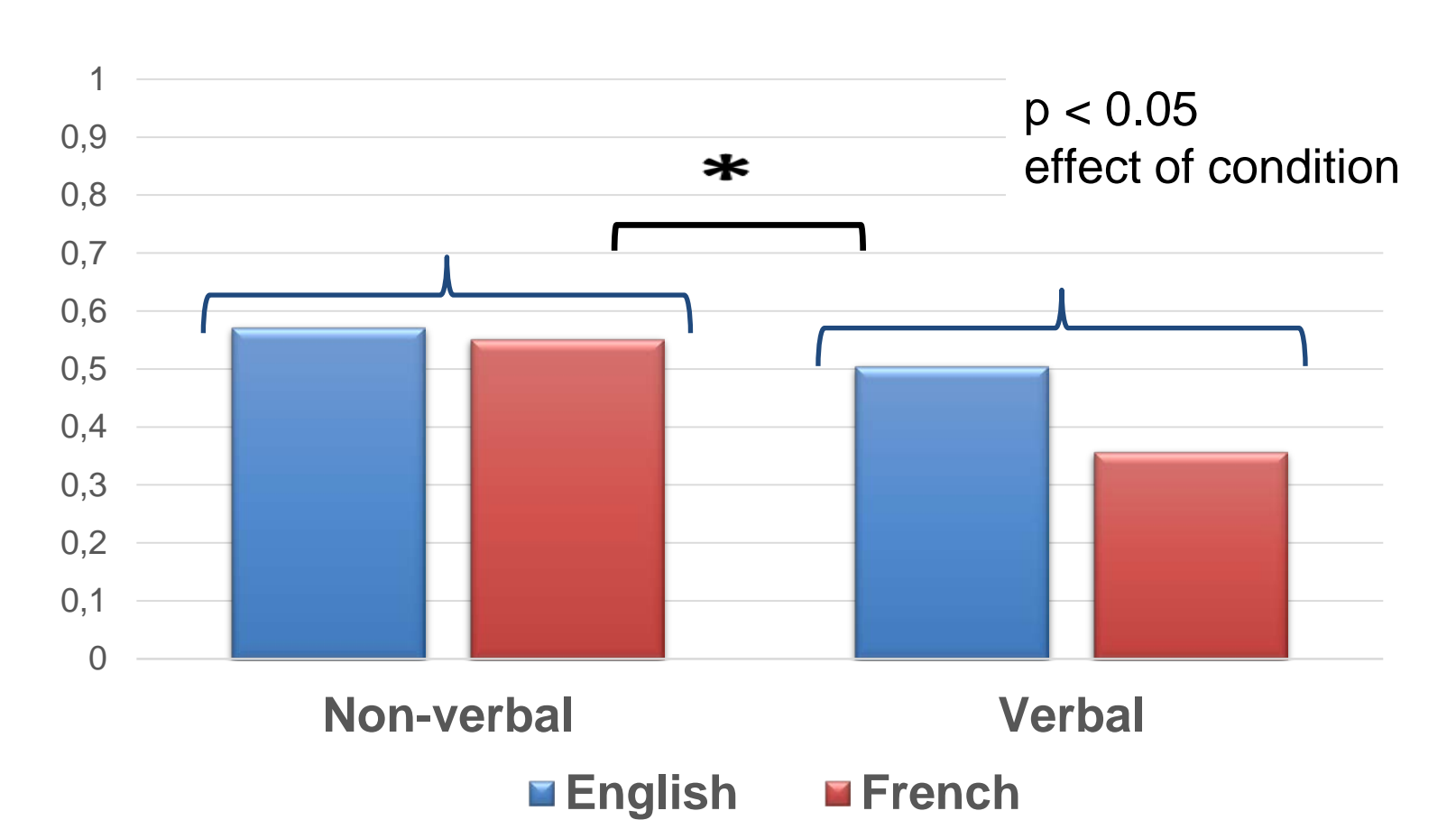


Fig 4. Categorization: Proportions of Manner choices

#### Memory: types of recognition error

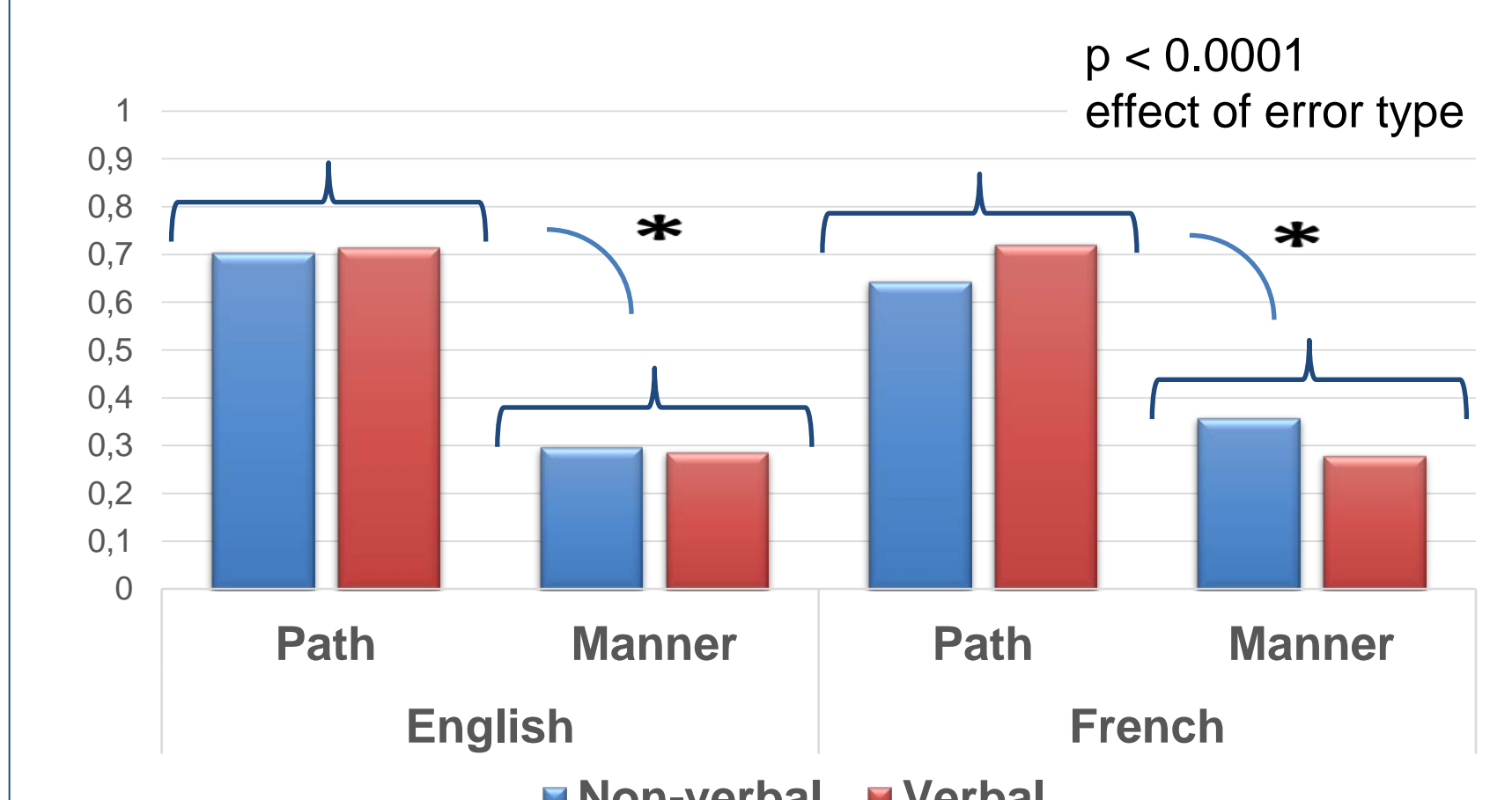
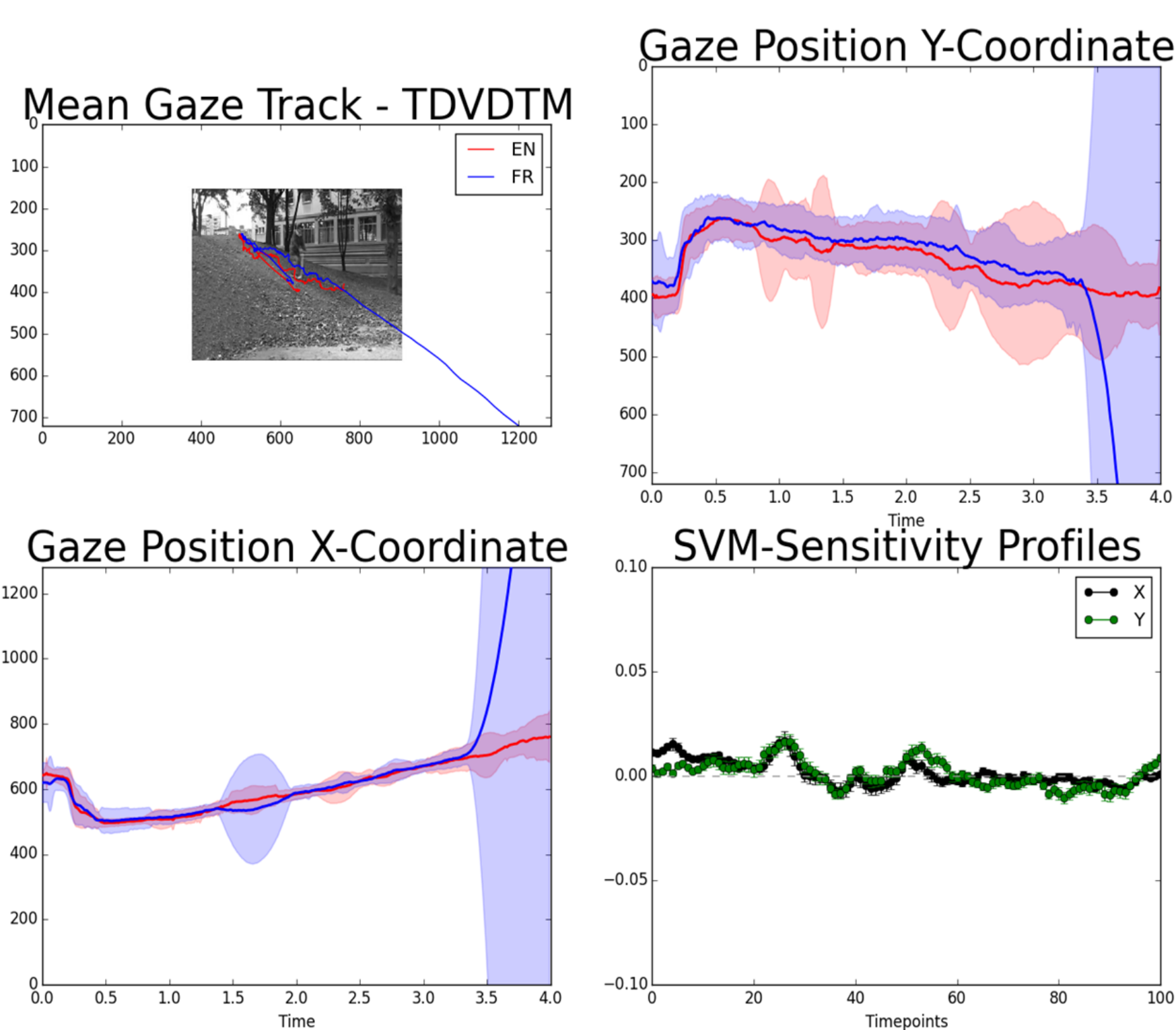


Fig 5. Error types as proportion of total recognition errors

### Exploratory gaze analysis [8]

#### Classification using PyMVPA algorithm



predictions\targets	1	2	Summary \ Means:	CHI <sup>2</sup>	19.09
p=0.00026			ACC	0.5	
1	32	30	ACC%	50	
2	12	10			

- Offline measures show effects of condition (NV vs. VE)
- Eye movements reveal significant language-specific processing differences, also in non-verbal conditions
- Not all cognitive processes affected alike: impact on fixations during categorization, but not memorization
- No meaningful results with classification analysis
- Future directions: Investigating motion processing in children's development and in bilingual speakers

### Discussion & future directions

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