

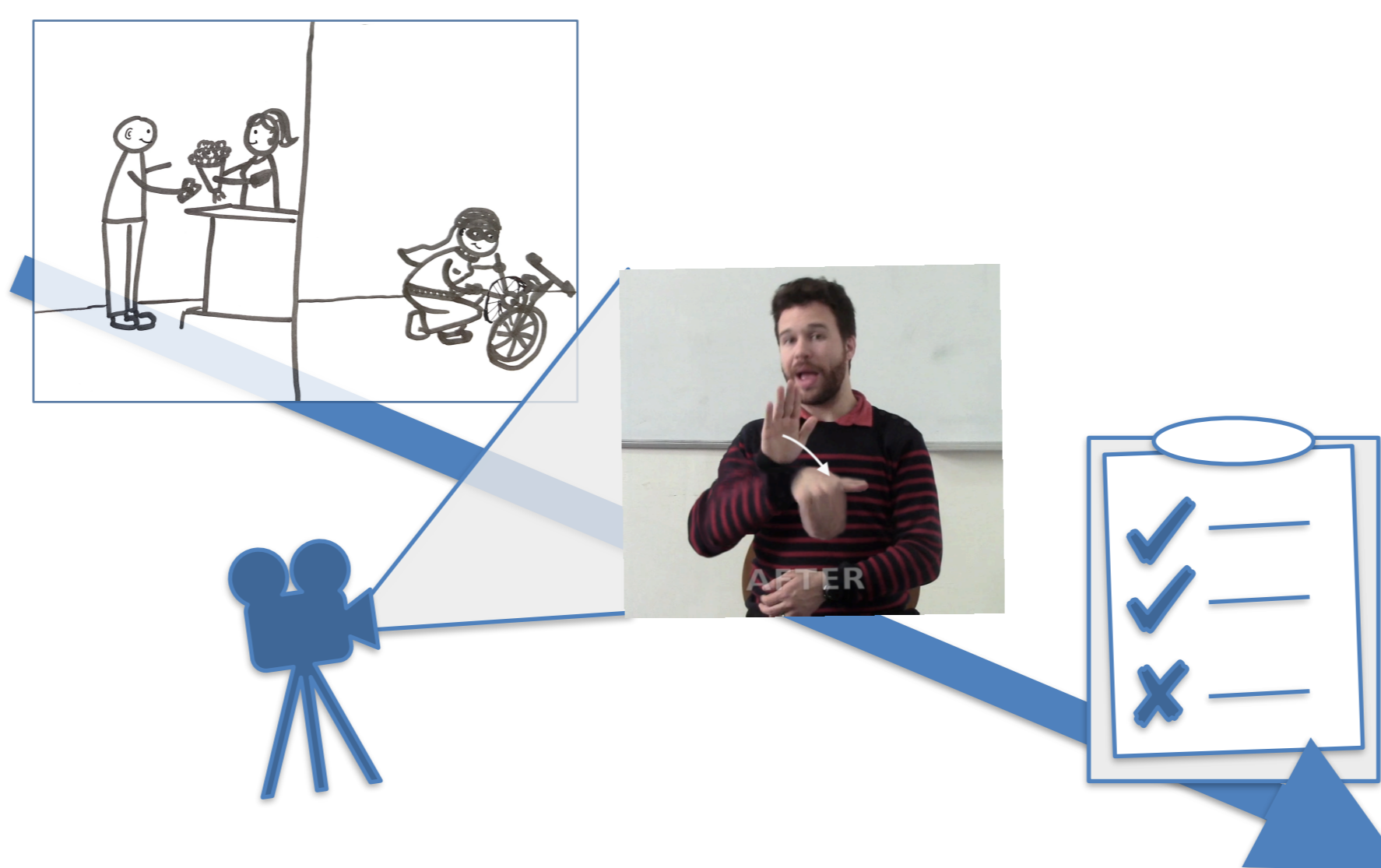
Introduction

- While we know from spoken languages research that temporal constructions can be expressed through a variety of syntactic strategies^[1] such as : a) subordination, b) juxtaposition or c) coordination^[2].
- Finding their equivalent in sign languages is often a challenge due to the absence of overt complementizers and other function words such as coordinators.

Goal

- This study explores temporal constructions in LSF and compares it directly with Italian Sign language^[3] (LIS).
- We show that LSF temporal clauses are very different from LIS since the latter are subordinate while the former are coordinated clauses.

Methodology



Picture-Based elicitation

- Elicit the baselines for each strategy
- No written language interaction
- No sign language Interaction

Syntactic and Semantic Survey

- Identify the core properties of each strategy
- Based on scientific literature

Playback Method

- Allow to obtain positive and **negative** evidence
- Allow cross-validation and generalization

LIS baselines

- a. BOSS STOCK SELL ^{re} AFTER ^{NMM} SECRETARY STAMP BUY
 'The secretary bought the stamps after the boss sold the stocks.'
- b. BOSS STOCK SELL NOT-YET/MUST^{future} BEFORE SECRETARY STAMP BUY
 'The secretary bought the stamps before the boss sold the stocks.'
- c. BOSS STOCK SELL MOMENT PI/SAME, SECRETARY STAMP BUY
 'The secretary bought the stamps when the boss sold the stocks.'



From Aristodemo (2017)

LSF baselines

- a. [left JEAN BUY FLOWER] ^{re} AFTER [right MARIE BUY VASE]
 'Jean bought flowers and after Marie bought a vase.'
- b. [left JEAN BUY FLOWER] BEFORE [right MARIE BUY VASE]
 'Jean bought flowers and before Marie bought a vase.'
- c. [left JEAN BUY FLOWER] ^{re} SAME TIME [right MARIE BUY VASE]
 'Jean bought flowers and at the same time Marie bought a vase'



Data : Syntactic and semantic survey

Isolation test

- A. * BOSS STOCK SELL AFTER LIS
 'After the Boss sold the stock.'
- A. AFTER MARIE STEAL BIKE LSF
 'After, Marie stole a bike.'

Inversion test

- B. * SECRETARY STAMP BUY BOSS STOCK SELL AFTER LIS
 'Lit. The secretary bought the stamps, after the boss sold the stocks.'
- B. BEFORE MARIE BUY VASE JEAN BUY FLOWER LSF
 'Before (now), Marie bought a vase and Jean bought flowers.'

Extraction tests

- C. BOSS/**t*_{who} STOCK SELL AFTER, *t*_{who}/ *SECRETARY STAMP BUY WHO LIS
 'Who bought stamps after the boss sold the stocks?.'
- D. *t*_{who} STOCK SELL AFTER *t*_{who} STAMP BUY WHO LIS
 'Who bought stamps after selling the stocks?.'
- C. * WHO/JEAN BUY FLOWER AFTER MARIE/WHO STEAL BIKE ? LSF
 'Who bought stamps after the boss sold the stocks?.'
- D. WHO BUY FLOWER AFTER *t*_{who} STEAL BIKE ? LSF
 'Who bought flowers after stealing a bike?'

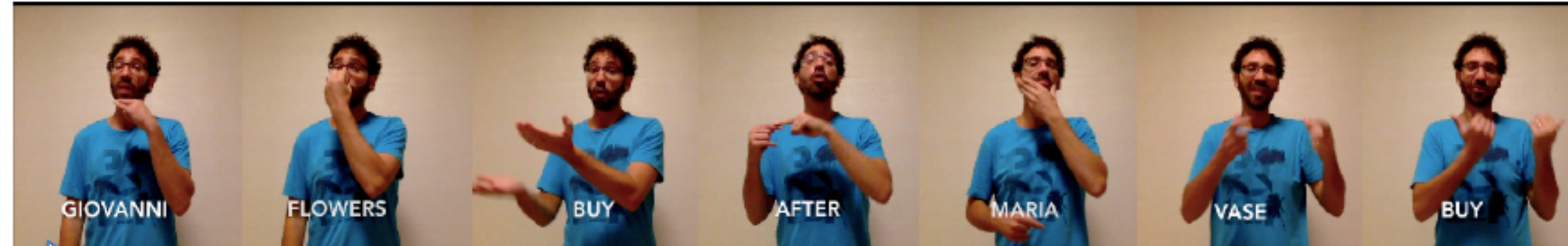
	Isolation	Inversion	Symmetric extraction	Extraction 1st clause	Extraction 2nd clause
Juxtaposition	✓	# pragmatic	✗	✗	✗
Coordination	✗	Change Meaning	✓	✗	✗
Subordination	✗	✗	✓	✗	✓
LIS	✗	✗	✓	✗	✓
LSF	✓	Change Meaning	✓	✗	✗

LIS DISPLAYS THE BEHAVIOR OF SUBORDINATED CLAUSES

LSF DISPLAYS THE BEHAVIOR OF COORDINATED CLAUSES

Data : Non-manual Marking

GIOVANNI FLOWER BUY ^{re} AFTER ^{nmm} MARIA VASE BUY



NMM typical of subordination : raised eyebrows on the 1st clause only

[left JEAN BUY FLOWER] ^{re} AFTER [right MARIE BUY VASE]



NMM typical of coordination : spatialization of the two coordinate clauses

Conclusion

Typological perspective

- In this paper we investigated the syntax of temporal constructions in French Sign Language, concluding that they involve an asymmetric coordination. Evidence for this analysis comes from morpho-phonological and syntactic properties.
- We observed that temporal constructions in LSF display the typical non-manual marking of coordinated structures, that inversion of the two clauses provokes a change of meaning and that wh-extraction is only possible from both clauses at the same time.
- We compared our results to those of a previous study on temporal clauses in Italian Sign Language (LIS) concluding that, despite a *prima facie* similarity between LIS and LSF constructions, a deep and detailed syntactic investigation reveals that the syntactic structure used in LSF is different from the one used in LIS, which involves subordination.
- These results confirm that temporal constructions in the visual modality exploit the same typological categories available in spoken languages.