UiT The Arctic University of Norway

Studying crosslinguistic influence in L3 by means of artificial language learning experiments

Chloe Castle, Isabel Nadine Jensen, Yulia Rodina,
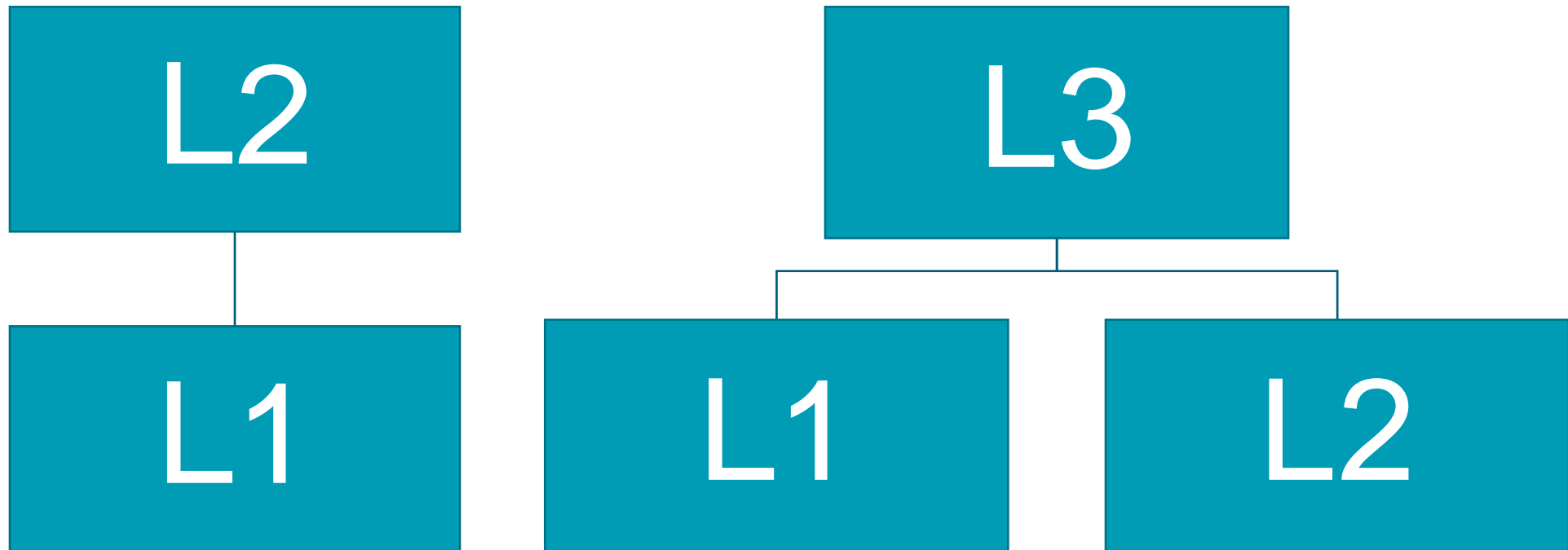Marta Velnić, Marit Westergaard & Natalia Mitrofanova

Presentation structure

1. Background: Crosslinguistic influence
2. Planned replication studies
3. Research questions
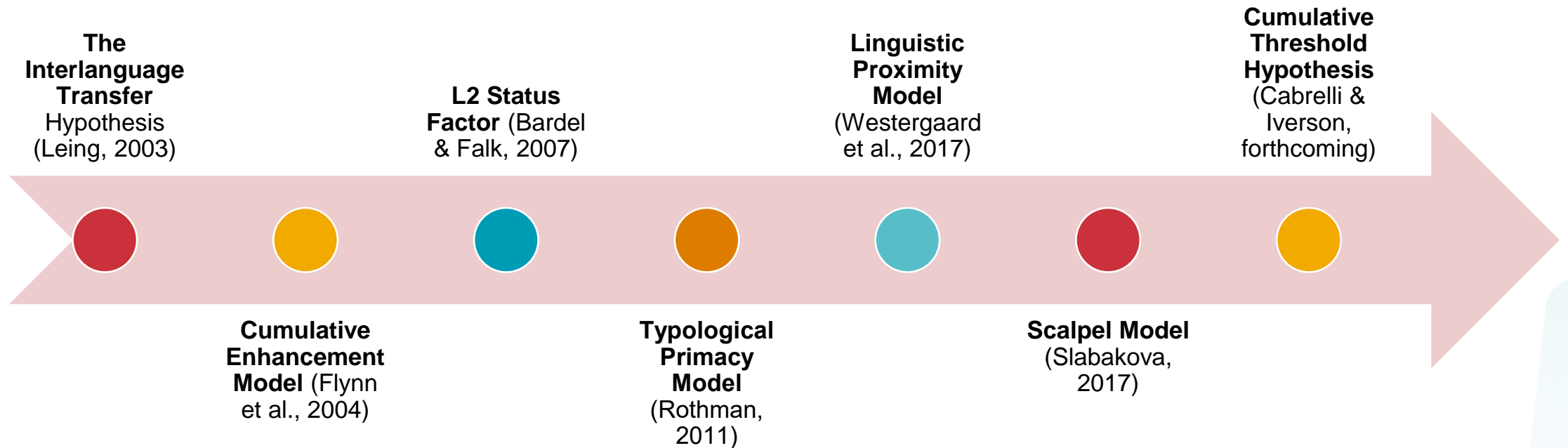4. Study design
5. Predictions

Crosslinguistic influence in L2 acquisition

- The Full Transfer/Full Access (FT/FA) Hypothesis (Schwartz & Sprouse, 1996): Wholesale transfer of the L1.

- The Full Transfer Potential (Westergaard, 2019): Any property from the L1 *may,* but does not *have to*, be shared with the L2.

Key issue: Assuming that crosslinguistic influence happens, where does it come from?

A timeline of L3 models

The Interlanguage Transfer Hypothesis (Leing, 2003)

Cumulative Enhancement Model (Flynn et al., 2004)

L2 Status Factor (Bardel & Falk, 2007)

Typological Primacy Model (Rothman, 2011)

Linguistic Proximity Model (Westergaard et al., 2017)

Scalpel Model (Slabakova, 2017)

Cumulative Threshold Hypothesis (Cabrelli & Iverson, forthcoming)

Main points of **disagreement**:
- The source(s) of crosslinguistic influence.
- The factors that contribute to the source selection.

Linguistic similarity?
Wholesale transfer?
L2 status effect?
Non-facilitation?

4

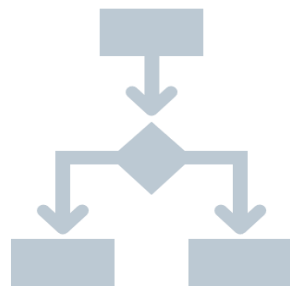# Wholesale versus property by property

Interlanguage Transfer Hypothesis and the Typological Primacy Model

- **Wholesale transfer** at the initial state/stages (cf. FT/FA) from the language that is typologically closer to the L3.

The Linguistic Proximity Model and the Scalpel Model

- Both preexisting languages may affect L3; cross-linguistic influence is property-specific and based on structural similarity (Westergaard et al. 2016, cf. Slabakova 2016).

Wholesale transfer, cf., the TPM

L3 input

Source selection process:

Lexicon

Phonotactics

Syntax

Morphology

"The big decision"

Property-by-property CLI, cf., the LPM

- Rejects the idea of wholesale transfer
- Rejects the idea of a hierarchy of linguistic cues.
- CLI is a result of co-activation, not copying of linguistic representations.
- Learners have access to both previously acquired languages throughout the acquisition process.

Planned replication studies

Aliensk (Mitrofanova, Leivada & Westergaard, 2022)

4 artificial languages (Jensen & Westergaard, in press)

Aliensk (Mitrofanova, Leivada & Westergaard 2022)

- Subtractive language group design.
  - Norwegian/Russian-Norwegian/Greek-Norwegian.

- ALs designed to show similarities/differences with previously acquired languages.

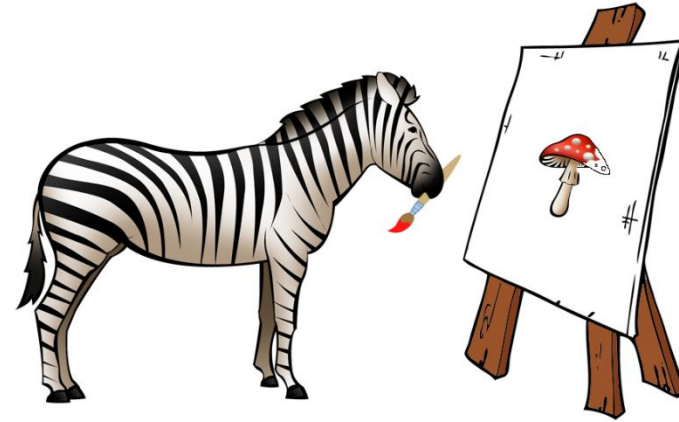- Case recognition in a sentence-picture verification task.

Test: Incorrect SVO

Training: correct SVO
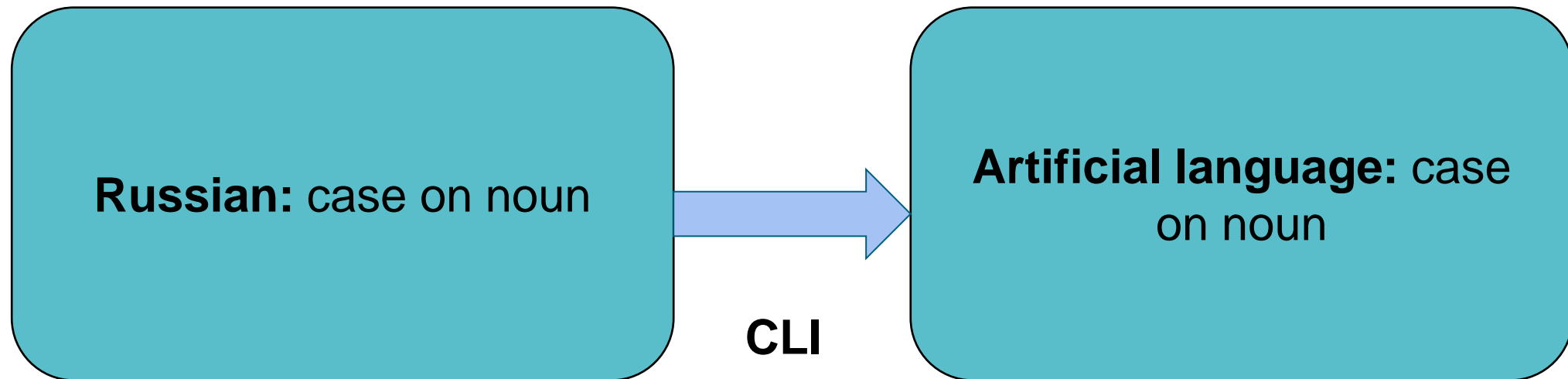
Baker-su spiser suppe-il

Sebra-il tegner sopp-su

Baker-ACC eats soup-NOM

Zebra-NOM draws/is drawing mushroom-ACC

Mitrofanova, Leivada & Westergaard (2022)

Results

- Speakers of a language with a case system on the noun (Russian) are better at recognising case in an AL than speakers of a language without a case system (Norwegian).
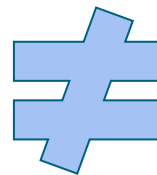
Russian: case on noun → CLI → **Artificial language:** case on noun

Mitrofanova, Leivada & Westergaard (2022)

Results

- Speakers of a language with a case system on the article (Greek)

Greek: case on article ≠ **Artificial language:** case on noun

No CLI

Research questions

Overarching research question:

- How do previously acquired languages influence the acquisition of new linguistic properties in the very beginning of the acquisition process?

More specifically:

- How do lexical and syntactic similarities between the L3 and previously acquired languages affect CLI? **(Studies 1 and 2)**
- Does speaking a language with structural but not superficial morphological similarity to a new language facilitate CLI? **(Study 1)**

Methodology

Existing paradigms and types of L3A studies

o   Single group methodology

o   Mirror-image groups design

o   **Subtractive language groups design ← Study 1**

o   **Multiple L3 groups design   ← Study 2**

Participants

Subtractive language groups design

Norwegian–Polish–English

Polish–English

Norwegian–English

Subtractive language groups design

- Allows us to isolate the role of individual languages

- The experimental group is compared to the control group(s)

- If we find a significant difference between the control group(s) and the experimental group, we can attribute it to the influence of the subtracted language

Properties under investigation

- Norwegian: No case marking.
- Polish: Case marking on the noun.
- Two artifical languages, **both lexically similar to Norwegian**:

1) Case on nouns (cf., Mitrofanova et al., 2022)
- AL = Polish ≠ Norwegian.

1) Case on articles
- Abstract similarity between AL and Polish (≠ Norwegian).

Method

1. Exposure phase.
2. Training phase.
3. Testing phase.
   1. Sentence-picture verification task.
   2. Test knowledge about the Polish case system for the heritage speakers.

Sentence-picture verification task (Mitrofanova, Leivada & Westergaard, 2022).

Participants view pictures on a screen, listen to test sentences and reply by clicking "**Yes**" or "**No**".

Accuracy and RTs.

Wholesale predictions

L3 learners should copy the language that is lexically more similar to the L3.
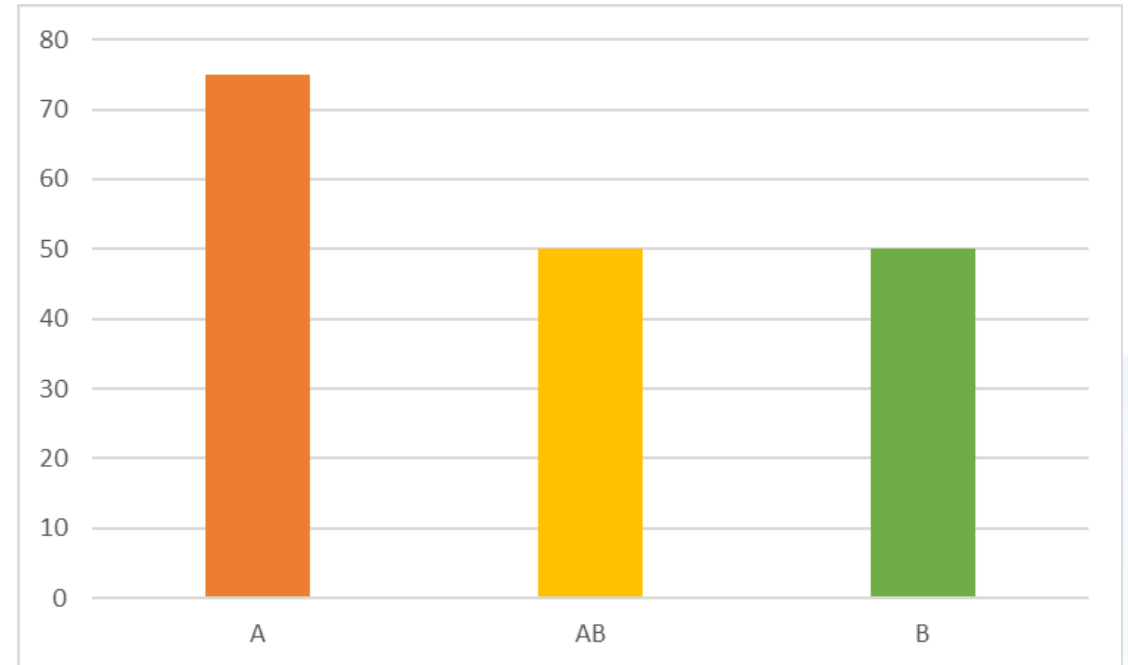
Polish ≠   Polish-Norwegian = Norwegian
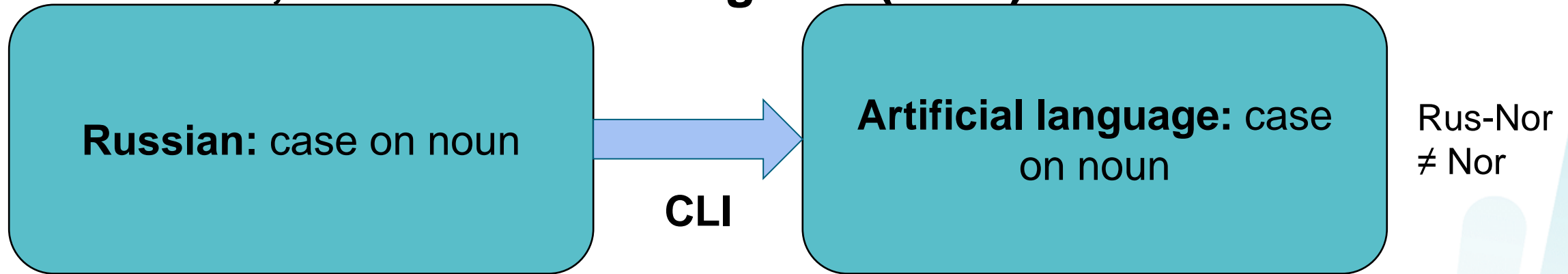
LPM predictions for case on nouns

L3 learners should score in between the L2 groups: co-activation of competing related structures in both previously-acquired Ls.
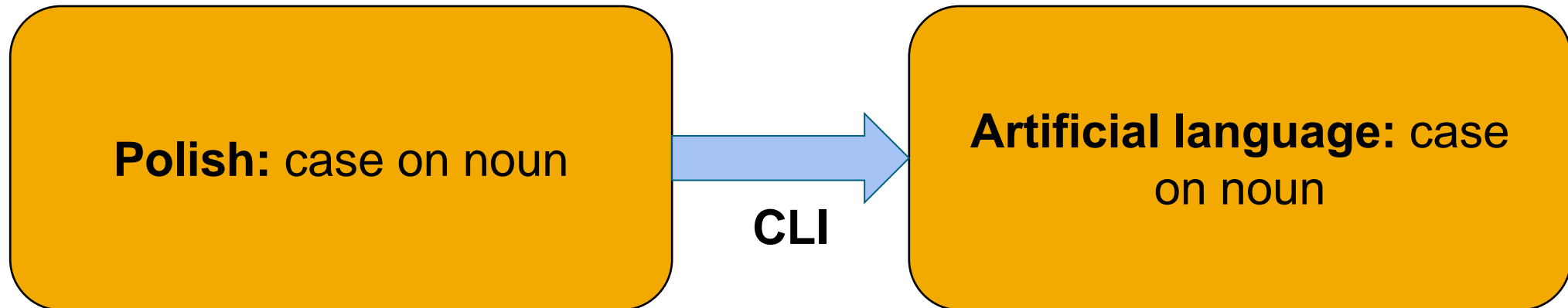

Polish ≠ Polish-Norwegian ≠
Norwegian

Predictions for case on nouns

Mitrofanova, Leivada & Westergaard (2022)

Russian: case on noun → **CLI** → **Artificial language:** case on noun

Rus-Nor ≠ Nor

Replication study:

Polish: case on noun → **CLI** → **Artificial language:** case on noun

LPM predictions for case on articles

Is it easier to learn a case system if the target language has properties from a pre-existing language (case), although they are not identical (case on the article and not the noun)?
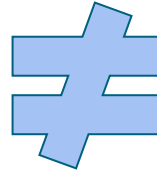

Polish ≠ Norwegian

Polish-Norwegian ≠

Predictions for case on articles

Mitrofanova, Leivada & Westergaard (2022)

Greek: case on article ≠ **Artificial language:** case on noun

Greek-Nor = Nor

No CLI

Replication study:

Polish: case on noun **?** **Artificial language:** case on article

No CLI

Summary

- 2 replication studies of artificial language learning experiments
- Study 1
  - Subtractive language groups design
  - Sentence-picture verification task
  - 2 artificial languages
    - 1. Case on nouns
    - 2. Case on articles
  - Do the structural cues in the input matter?
  - Abstract versus superficial structural similarities

Dziękuję!
Takk!
Thank you!

- chloe.castle@outlook.com
- isabel.n.jensen@uit.no
- marta.velnic@ntnu.no
- yulia.rodina@uit.no
- marit.westergaard@uit.no
- natalia.mitrofanova@uit.no

References

- Mitrofanova, N., Leivada, E. & Westergaard M. (2022) Crosslinguistic influence in L3 acquisition: Evidence from artificial language learning. GASLA 16 Trondheim, May 13-15.