



**ADAM MICKIEWICZ UNIVERSITY IN POZNAŃ**

**Faculty of English**

# **Does cross-linguistic similarity play a role in reading? A self-paced reading study with Polish-English-Norwegian multilinguals**

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**Norway  
grants**

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# Presentation outline

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- Aims
- Constructions under investigation / hypotheses
- Study design:
  - Participants
  - Stimuli
  - Procedure
- Preliminary results (descriptive stats, statistical analyses)
- Discussion points (feedback welcome!)



# Aims

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- Testing the influence of cross-linguistic similarity (L1=L2=L3 vs. L1=L3 / L2=L3) on sentence comprehension in L3 using the self-paced reading task



# Constructions

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- 1. Lexical-syntactic** (present in three languages)
  - prepositional verbs and adjectives
  - reflexive verbs
- 2. Syntactic** (present in two languages)
  - gender agreement (neuter noun + adj)
  - articles



# Prepositional verbs and adjectives

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1. **NO = EN ≠ PL** (same preposition in NO & EN, different in PL)

NO: Disse rommene er nok **for** / **\*på**  
**konferanser** og møter.

EN: These rooms are enough **for** / **\*on** conferences  
and meetings.

PL: Te pomieszczenia są wystarczające **\*dla** / **na**  
konferencje i spotkania.



# Prepositional verbs and adjectives

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2. **NO = EN = PL** (same preposition in all languages)

NO: Direktøren deres betalte **for** / **om** blyanter og papir.

EN: Their director paid **for** / **about** pencils and paper.

PL: Ich dyrektor zapłacił **za** / **o** ołówki i papier.



# Prepositional verbs and adjectives

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- **Hypothesis:** RTs shorter for NO = EN = PL than for NO = EN  $\neq$  PL, both for correct and incorrect sentences
- negative influence/interference from L1 Polish when Polish is different
- L1 facilitation for NO = EN = PL: comparison of PL-EN-NO with EN-NO groups



# Reflexive verbs

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1. **NO = PL ≠ EN** (reflexive in NO & PL, non-reflexive in EN)

NO: Søsteren hans føler **seg** / \***Ø** ofte dårlig.

EN: His sister ofte feels \***herself** / **Ø** bad.

PL: Jego siostra często czuje **się** / \***Ø** źle.





# Reflexive verbs

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## 2. NO = PL = EN (reflexive in all three languages)

NO: Den unge gutten skadet **seg** / \***∅** kraftig i fingeren.

EN: The little boy hurt **himself** / \***∅** badly in the finger.

PL: Mały chłopiec mocno skaleczył **się** / \***∅** w palec.



# Reflexive verbs

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- **Hypothesis:** RTs shorter for NO = EN = PL than for NO = PL  $\neq$  EN, both for correct and incorrect sentences
- negative influence/interference from L2 English when English is different
- L2 facilitation for NO = EN = PL: comparison of PL-EN-NO with EN-NO groups



# Gender agreement

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## 1. NO = PL (neuter in NO & PL)

NO: Dette dyret er **sultent** / \***sulten** om vinteren.

PL: To zwierzę jest **głodne** / \***głodny** w zimie.

## 2. NO ≠ PL (neuter in NO but masculine or feminine in PL)

NO: Dette kjøleskapet er **tomt** / \***tom** hele tiden.

PL: Ta lodówka jest cały czas \***puste** / **pusta**.



# Gender agreement

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- **Hypothesis:** RTs shorter for NO = PL than for NO  $\neq$  PL, both for correct and incorrect sentences
- positive influence from L1 Polish when NO = PL



# Articles

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## 1. NO = EN (indefinite articles)

NO: Denne filmen er **en** / \***Ø** tegnefilm om to prinsesser.

EN: This film is **a** / \***Ø** cartoon about two princesses.

## 2. NO ≠ EN (definite articles)

NO: Denne parken er **skogen** / \***skog** hun jogget i.

EN: This park is **the** / \***Ø** forest in which she was jogging.

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# Articles

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- **Hypothesis:** RTs shorter for NO = EN than for NO  $\neq$  EN, both for correct and incorrect sentences
- positive influence from L2 English when NO = EN



# Participants

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- 34 Polish-English-Norwegian multilinguals (Szczecin: 23, Poznań: 11)
- English proficiency – Cambridge General English placement test (max. 25 points;  $M = 19.65/25$ ;  $SD = 3.00$ )
- Norwegian proficiency – UiT placement test (max. 36 points;  $M = 27.85$ ;  $SD = 5.64$ )



# Stimuli

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- Key words: no cognates between Norwegian, English and Polish; frequency 3-6 on Zipf scale (NoWaC corpus, [https://tekstlab.uio.no/glossa2/nowac\\_1\\_1](https://tekstlab.uio.no/glossa2/nowac_1_1))
- Key word position: 4<sup>th</sup> - 2<sup>nd</sup> word from the end of the sentence
- Length of sentences: 6-8 words
- 192 sentences: 12 sentences per condition x 2 grammatical variations (grammatical vs. ungrammatical) x 4 grammatical constructions





# Procedure

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1. Non-cumulative self-paced reading task in Norwegian
    - Sentences appearing word by word
    - Pressing the space bar to see the next word (one word is replaced by another one)
    - Each sentence followed by a binary choice grammaticality judgement question
  2. Binary-choice grammaticality judgement task in English
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# Preliminary results: mean RTs

construction	grammaticality	condition: similar	condition: different	outcome
prepositions	grammatical	638.2576	801.4520	😊
	ungrammatical	671.5354	824.7803	😊
reflexives	grammatical	647.4672	733.2247	😊
	ungrammatical	731.8207	759.0404	😊
gender	grammatical	966.7121	928.851	😞
	ungrammatical	1037.5732	1021.333	😞
articles	grammatical	856.6187	1056.0884	😊
	ungrammatical	931.2955	958.6086	😊



# Preliminary results

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- Except for gender, in all constructions:  
shorter RTs for conditions similar between  
NO and PL and/or EN than for conditions  
differing across languages
- Definite articles: longer RTs for correct than  
for incorrect sentences (in NO the definite  
article is a suffix)

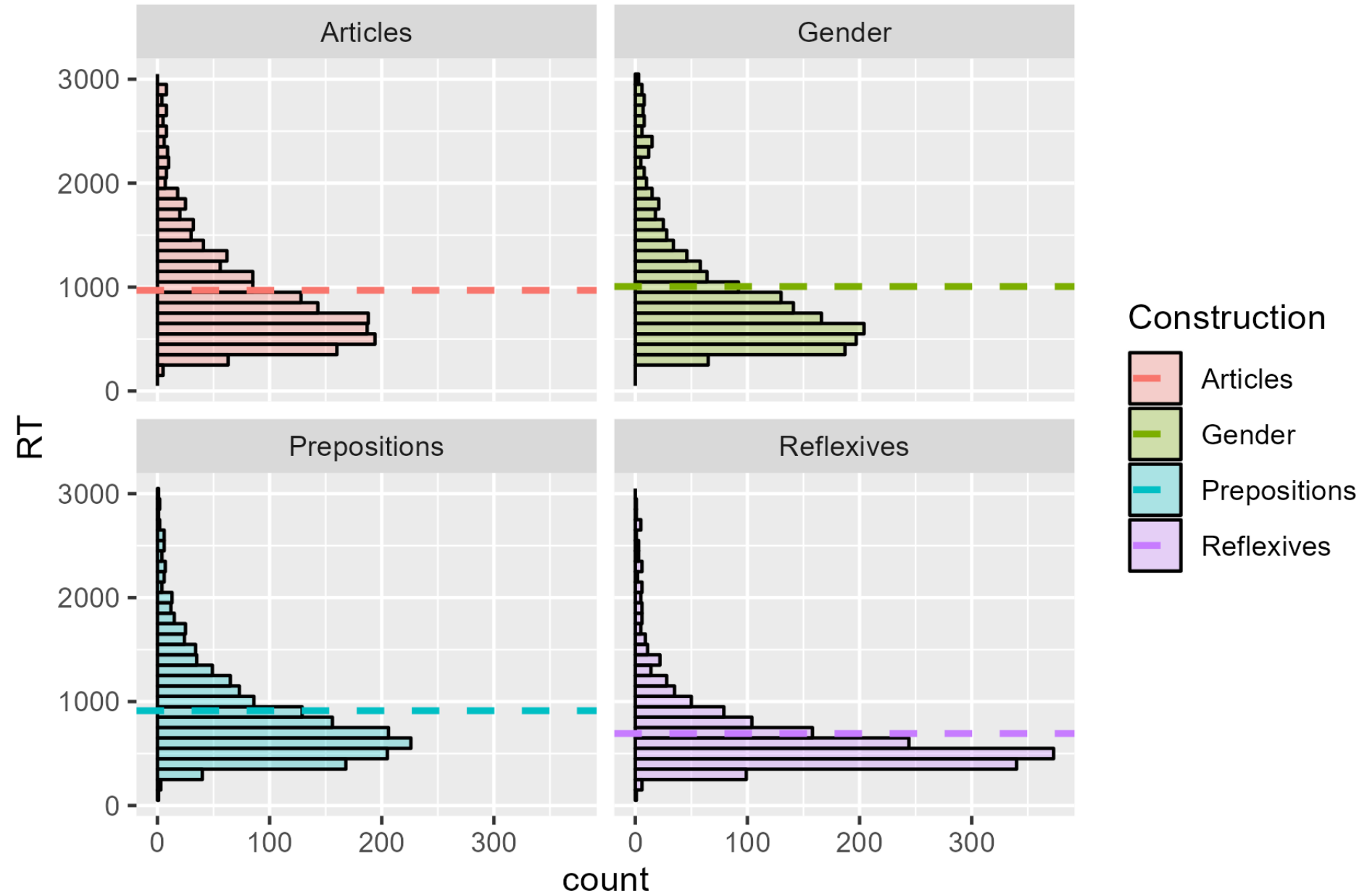


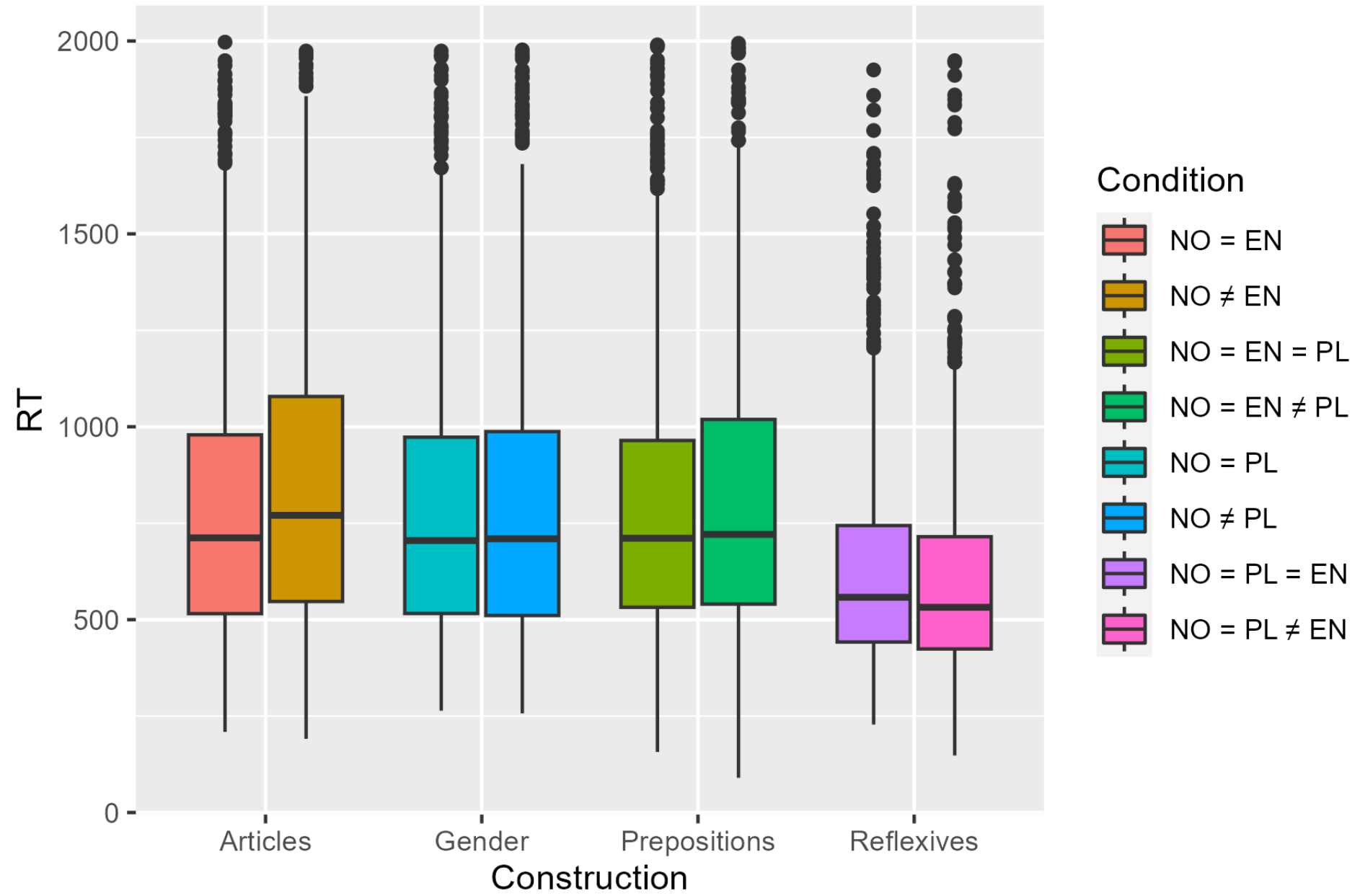
# Statistical analyses

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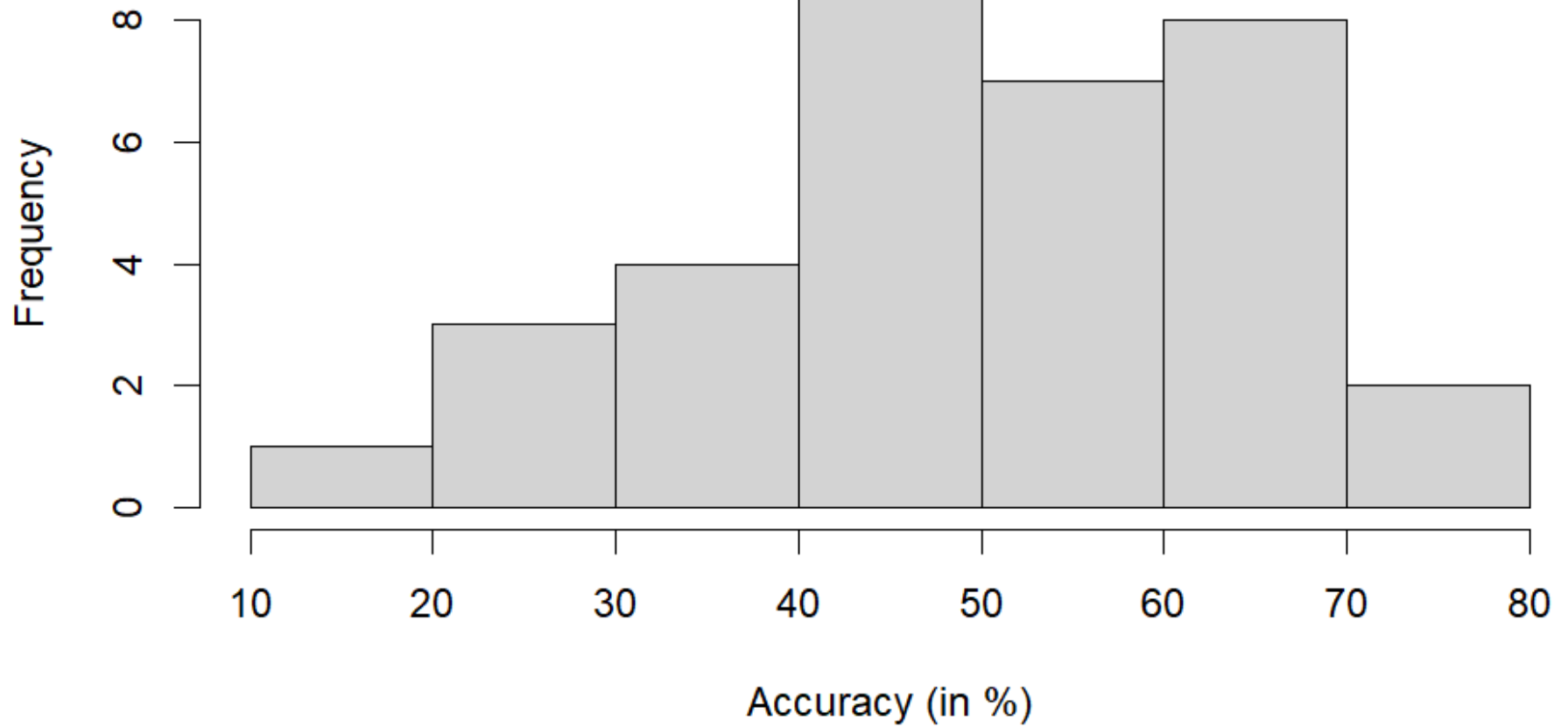
- linear mixed-effects model

$RT \sim \text{condition} * \text{grammaticality} + (1 + \text{condition} * \text{grammaticality} | \text{participant}) + (1 + \text{condition} * \text{grammaticality} | \text{sentence})$



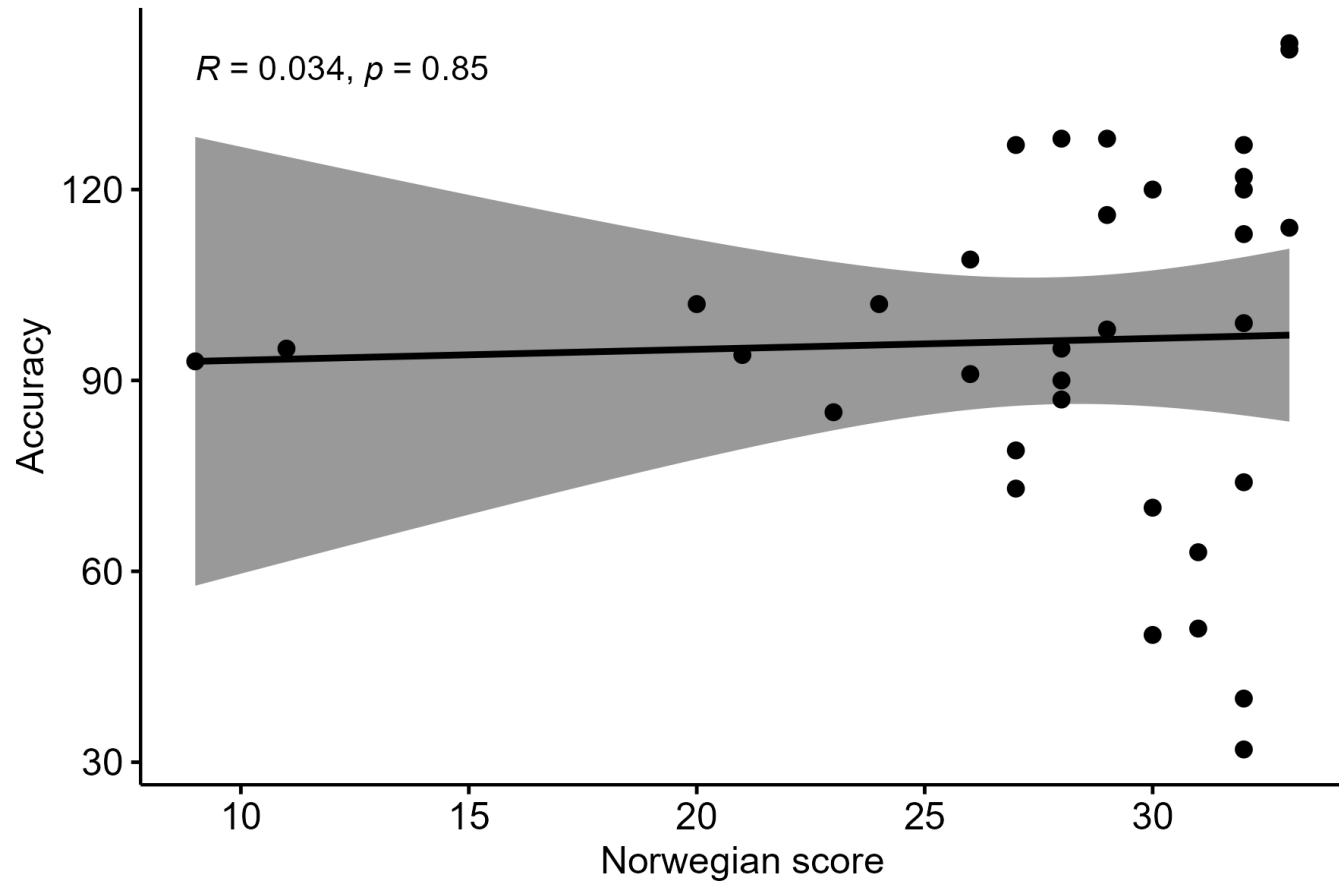


## Accuracy data





# Correlation between Norwegian proficiency and accuracy







# Discussion points: data for analysis

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- Data inclusion criteria?
  - a. All data, irrespective of accuracy
  - b. Cut-off point for discarding participants and items
  - c. Only data points with correct accuracy (L1 NOR control group data collection in progress for comparison)



Thank you!

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