UiT The Arctic University of Norway

AcqVA Aurora Lab

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Cross-Linguistic Influence in Multilinguals:

Do dominance and recency play a role?

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Agenda

Dominance and recency: A background	The study	Participants	Design
Dominance scores	Hypotheses	Analysis	Discussion

Dominance in CLI

Models

Dominance may override structural similarity in CLI

- Scalpel model (Slabakova 2017)
- Linguistic Proximity Model (Westergaard 2021)

Findings

Dominance plays a role in CLI

- Rah 2010
- Fallah & Jabbari 2016
- Angelovska 2020

Dominance does not play a role in CLI

- Puig-Mayenco et al 2018
- Lloyd-Smith et al 2018

*instruction language

Recency* in CLI

Findings

- Stevens 2021
  - Language of instruction (Norwegian or English) **does not** significantly affect the rate of V2 construction selection (explored in their study.
  - However: the interaction between the phase of the experiment (pre- and post-exposure to syntactic rules of the Mini Artificial Language) and language of instruction **is** significant
    - Before receiving training in syntactic rules of the MAL, groups did perform significantly differently in rate of V2 construction selection

Primary question:

Do dominance* and recency** play a role in CLI at the initial stages of language acquisition?

*Dominance = use/activation of one language more of the time
**Recency = experiment instructions and the language participants learn through

Participants

Polish-English bilinguals living in Poland and England

Recruited via Prolific

71 participants

Groups for analysis:

- Dominance
  - LSBQ score
  - Continuous scale for dominance
- Recency
  - Polish-recency vs English-recency group

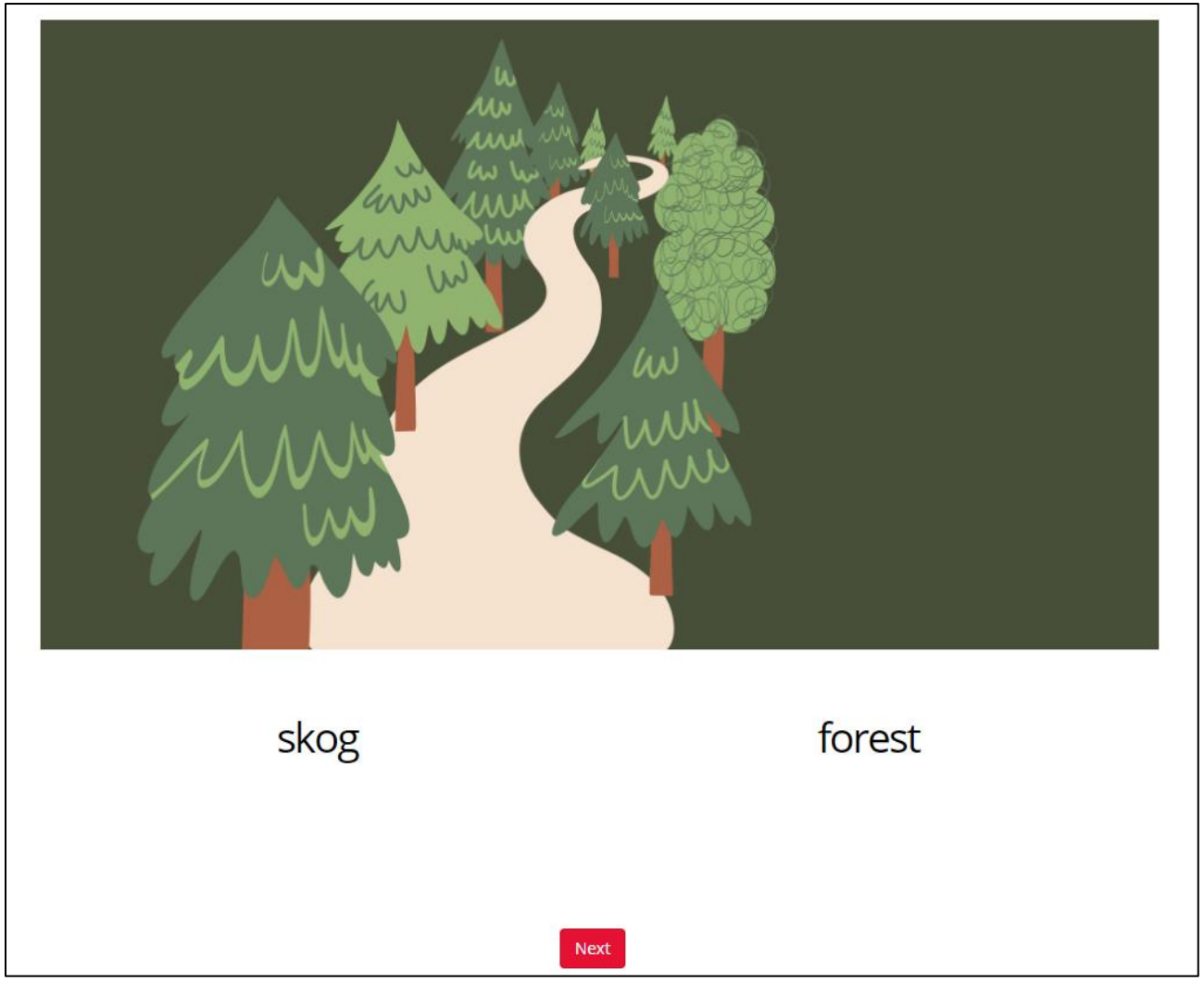
Study design

Two groups for recency:

- English-instruction version of the experiment
- Polish-instruction version of the experiment

1. Vocabulary exposure of 36 lexical items
2. Picture-label matching task
3. **Main experiment – forced-choice judgement task**
4. Mini post-experiment task questionnaire
5. Proficiency task English
6. Proficiency task Polish
7. Language background questionnaire

Vocab exposure



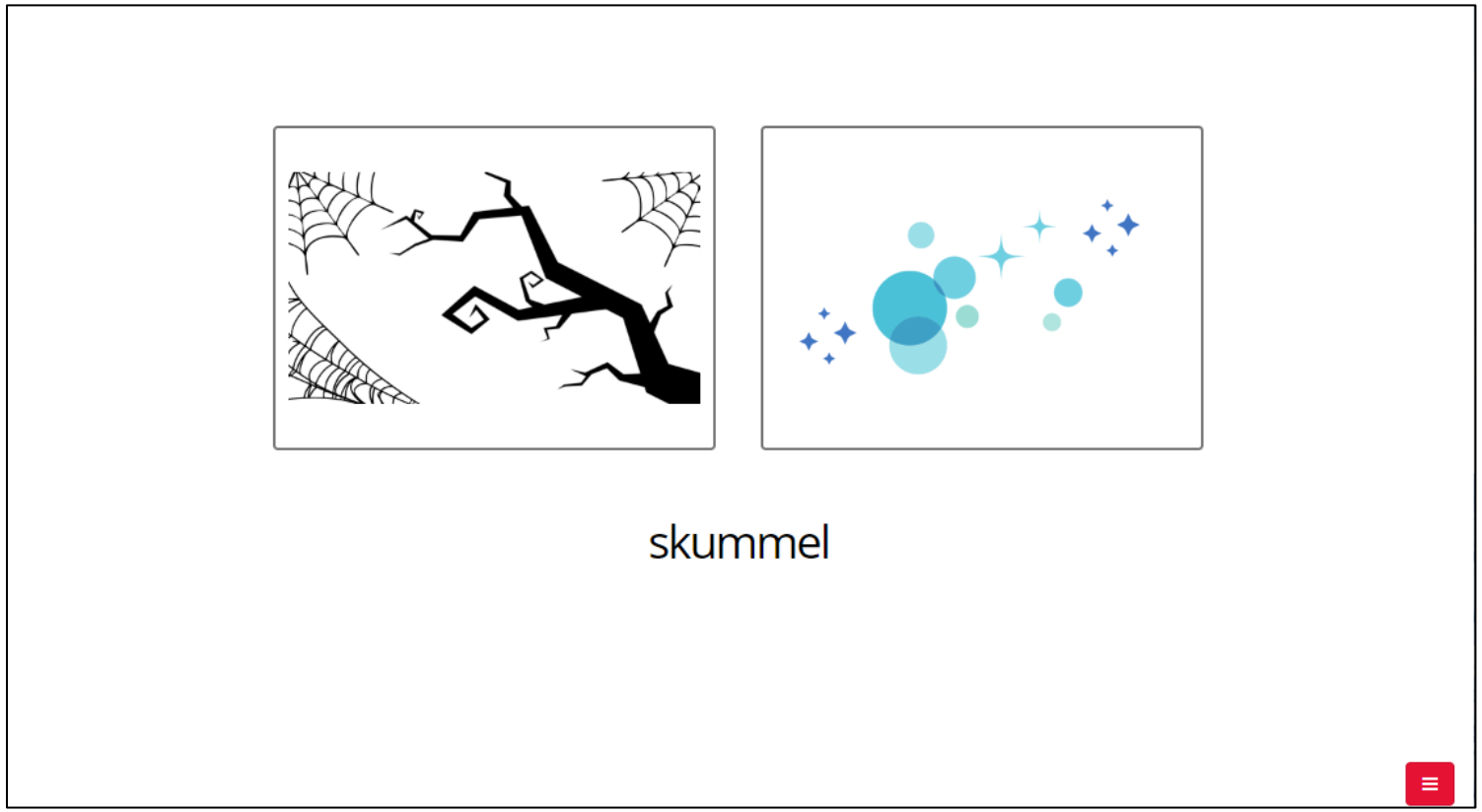
- All lexical items were chosen very carefully **to avoid lexical similarities** between:
  - Norwegian and English
  - Norwegian and Polish
  - Norwegian and German (disguising the language so no choice can be made based on lexical similarity)

- Gender of nouns are the same in Polish and Norwegian

- No auditory stimuli – avoiding choices based on phonological similarity

- Mandatory to do twice, can do as many times as desired after this

Picture label matching task



- The same pictures that they learned a concept with in exposure are used in this task

- Given two chances at this, if they get at least 80%, move on, if not, finish experiment there (Puig-Mayenco et al 2018; González Alonso et al 2020)

Main experiment

- Forced-choice judgement task
- Four constructions:
  - Polish-like:
    - Number agreement
    - Semantic gender
  - English-like:
    - Articles
    - Ditransitives
- 54 sentence pairs per person, 2 lists

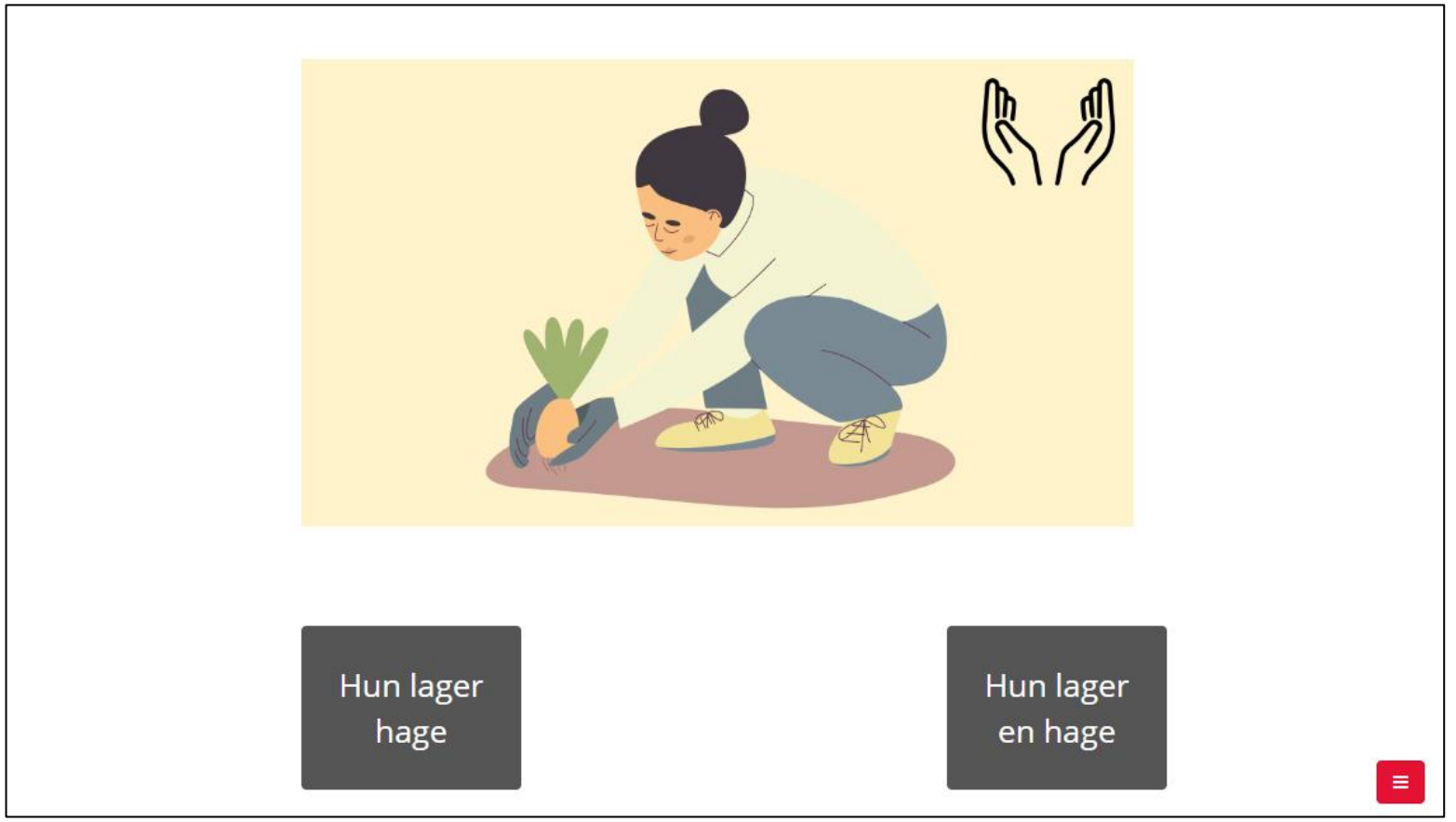
Key idea: Assessing dominance and recency based on the number of **Polish-like choices** they made, NOT on their accuracy in Norwegian – they have only just learned 36 words in Norwegian.

Looking closer: Constructions

Polish-like	**English-like**
Semantic gender [garden image] **Han er vakker.*** He is beautiful. 'He is beautiful' Det er vakker. It is beautiful. 'It is beautiful'	**Ditransitives** [Man showing a pencil to Simon] **Han viser blyant-en til Simon** He shows pencil-ART to Simon 'He shows a pencil to Simon' Han viser blyant-en Simon He shows pencil-ART Simon 'He shows a pencil Simon.'
Number agreement [Lucas and Adam] **Lucas og Adam er stor-e.** Lucas and Adam are big-PL 'Lucas and Adam are big.' Lucas og Adam er stor. Lucas and Adam are big.SG 'Lucas and Adam are big'	**Articles** [Woman discovering a car] **Hun oppdager en bil** She discovers ART car 'She discovers a car.' Hun oppdager bil She discovers car 'She discovers car.'

*this is used in some Northern Norwegian dialects only

Main experiment – forced choice judgement task



- 18s to choose a sentence (mean + 2SD of pilot RT)
- 12 sentences for each construction
- Also semantic gender controls – for exclusion purposes (6 sentences)

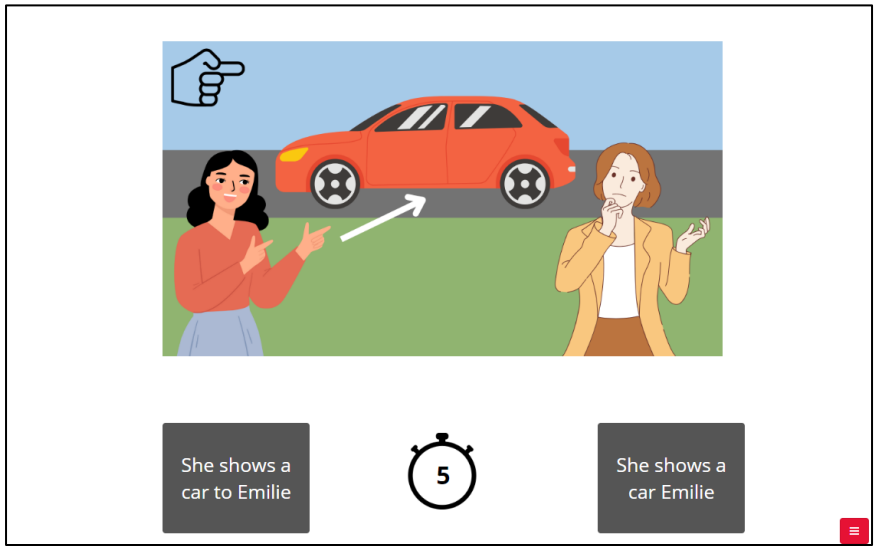
Mini post-experiment task questionnaire

- Which language they thought it was
- Which language they were thinking in
- What they think was being assessed
- Whether they think the new language is more similar to Polish or English

‘Proficiency tasks’ English and Polish

English

- Same as the main task, with the English-like constructions (ditransitives and articles), 8s (mean +2SD)
- Expect a high score – to show they know these constructions in English



Polish

- Same as the main task, with the Polish-like constructions (number agreement and semantic gender), 8s (mean + 2SD)
- Expect a high score – to show they know these constructions in Polish

Dominance scale - LSBQ

- Language and Social Background Questionnaire: a measure of degree of bilingualism

  - Assumption here that, e.g., more monolingual on the scale = more dominant in Polish (as L1), more bilingual = more dominant in English
  - Questions about language use in different domains
  - Can be used as a continuous variable (increased power)
  - Recognises that language use is dynamic
  - Addresses deficiencies of self-report through multiple questions that are demonstrated through factor analysis to be reliably related

Hypotheses

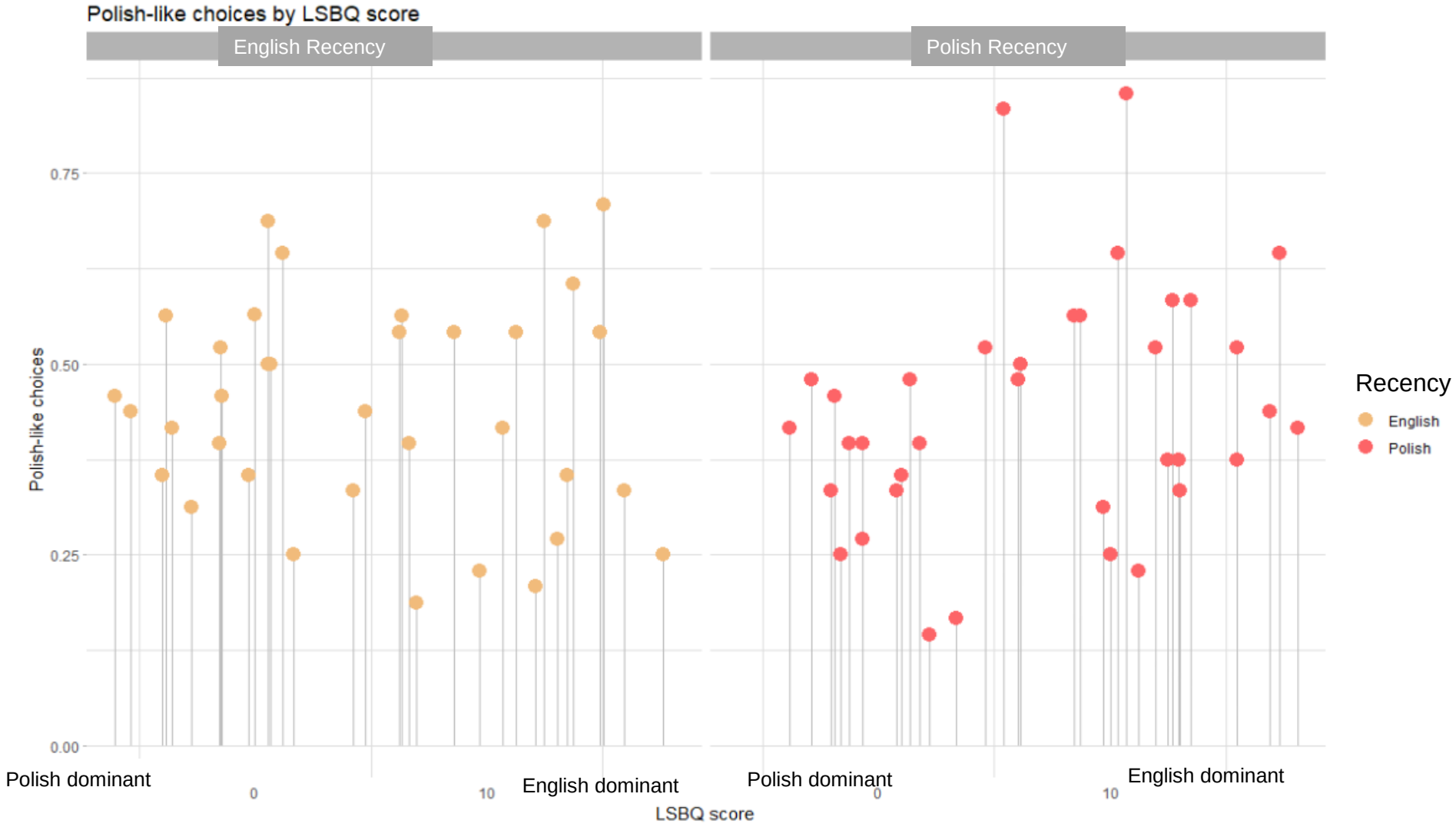
Key idea: Assessing dominance and recency based on the number of **Polish-like choices** they made, NOT on their accuracy in Norwegian – they have only just learned 36 words in Norwegian.

H1: Those in the Polish recency group will select more Polish-like constructions than those in the English recency group.

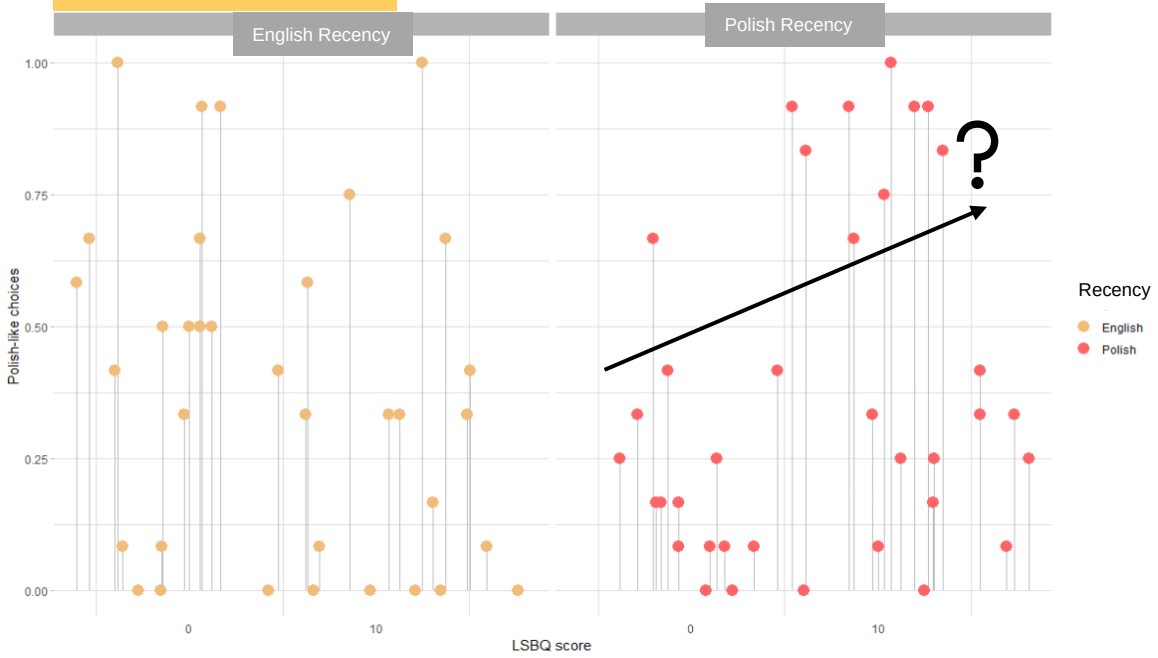
H2: Participants more dominant in Polish will choose more Polish-like constructions, and participants more dominant in English will choose more English-like constructions.

H3: Participants dominant in Polish in the Polish recency group will choose the most Polish-like constructions, and participants dominant in English in the English recency group will choose the most English-like constructions.

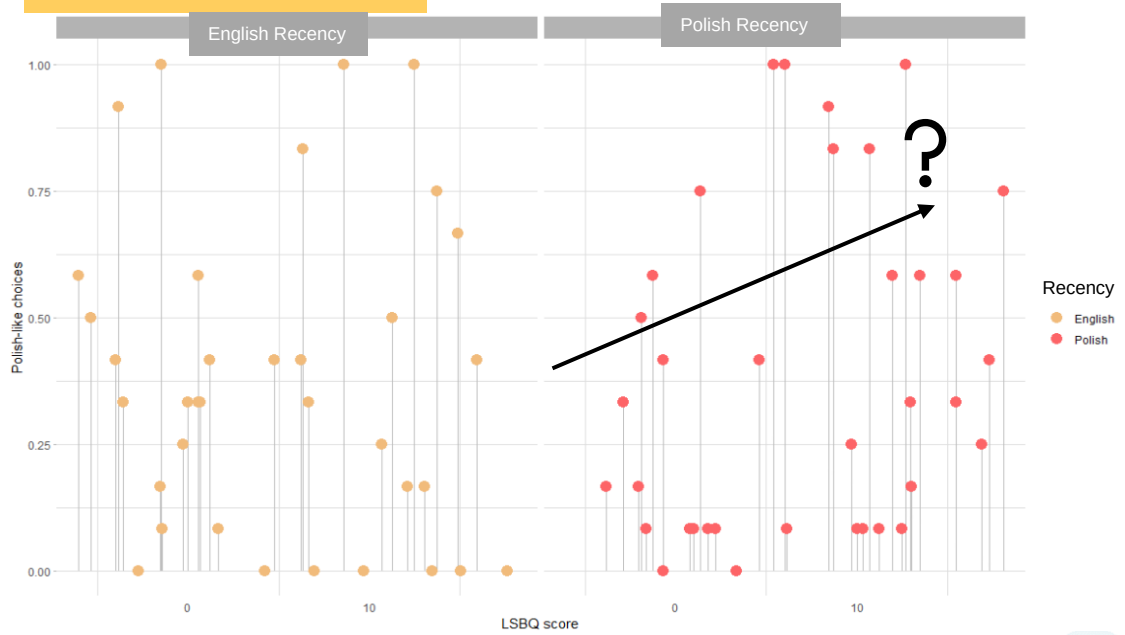
Exploring the data



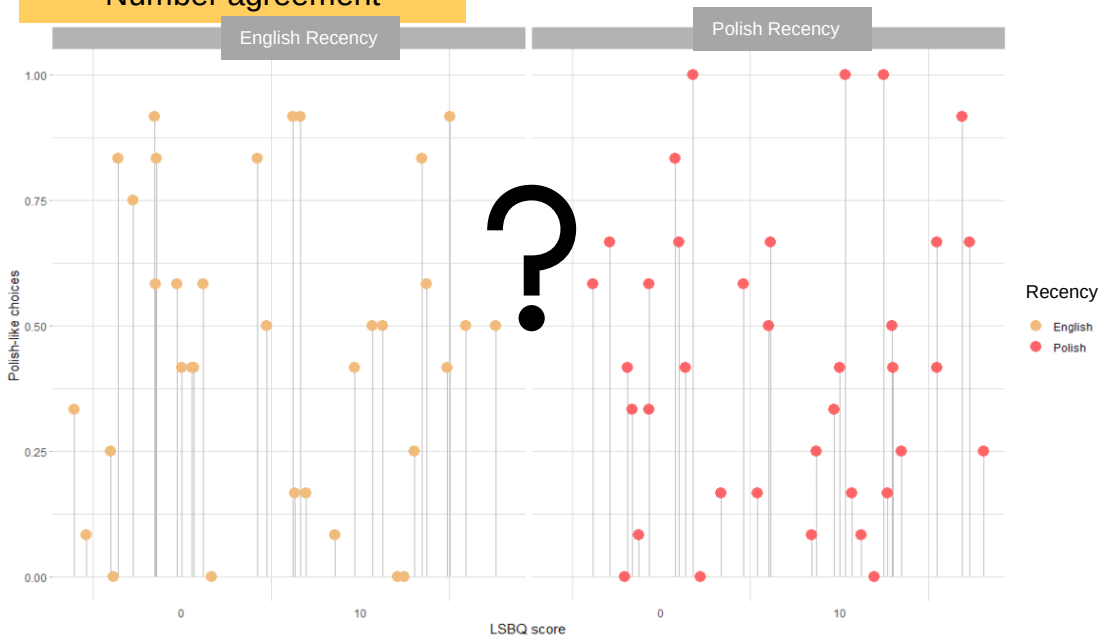
Article



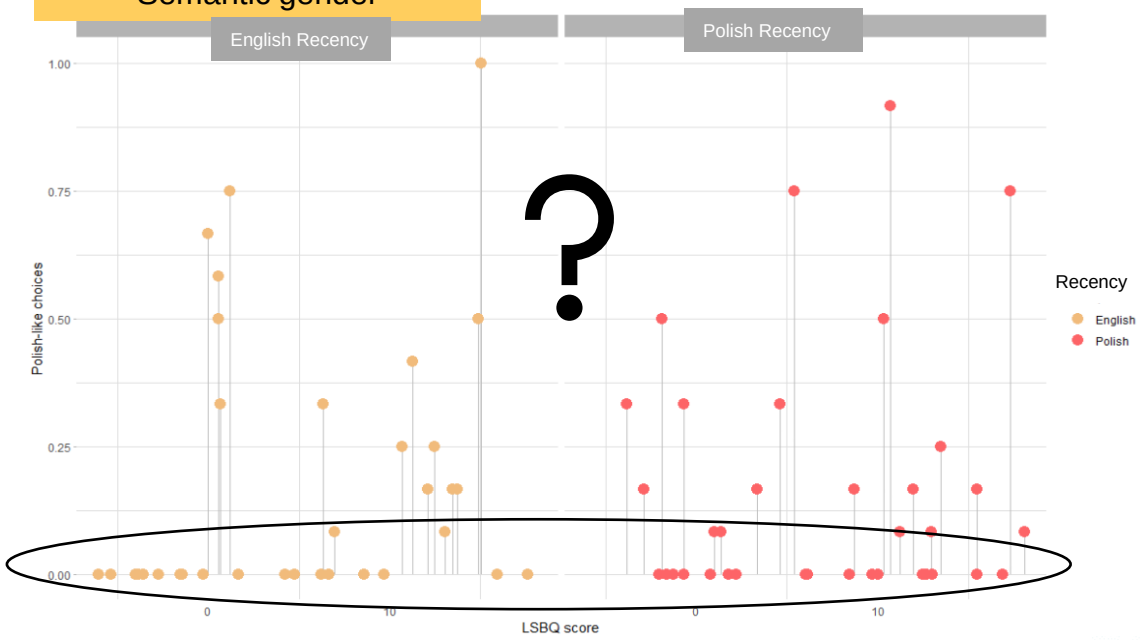
Ditransitive



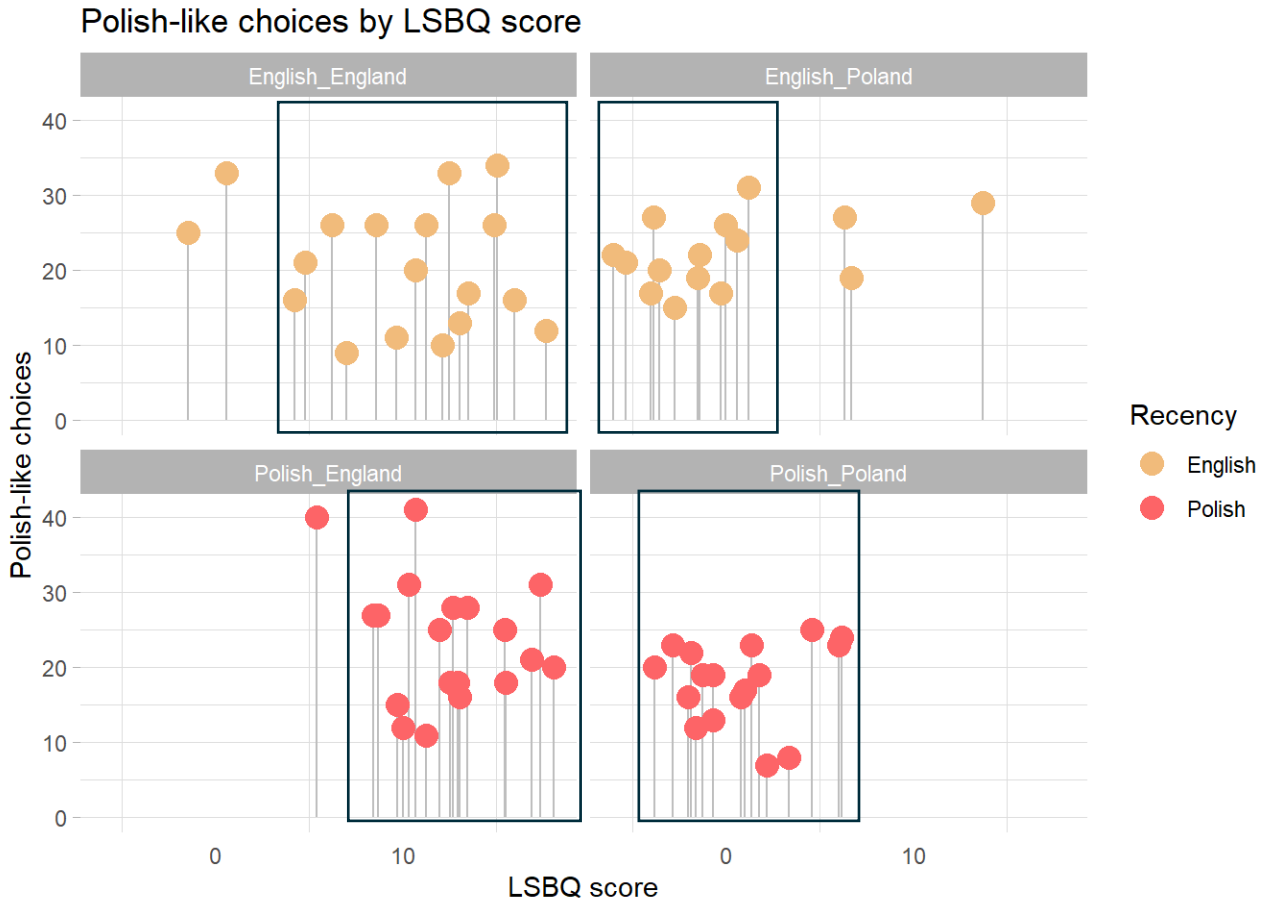
Number agreement



Semantic gender



Is something occurring with the LSBQ score?

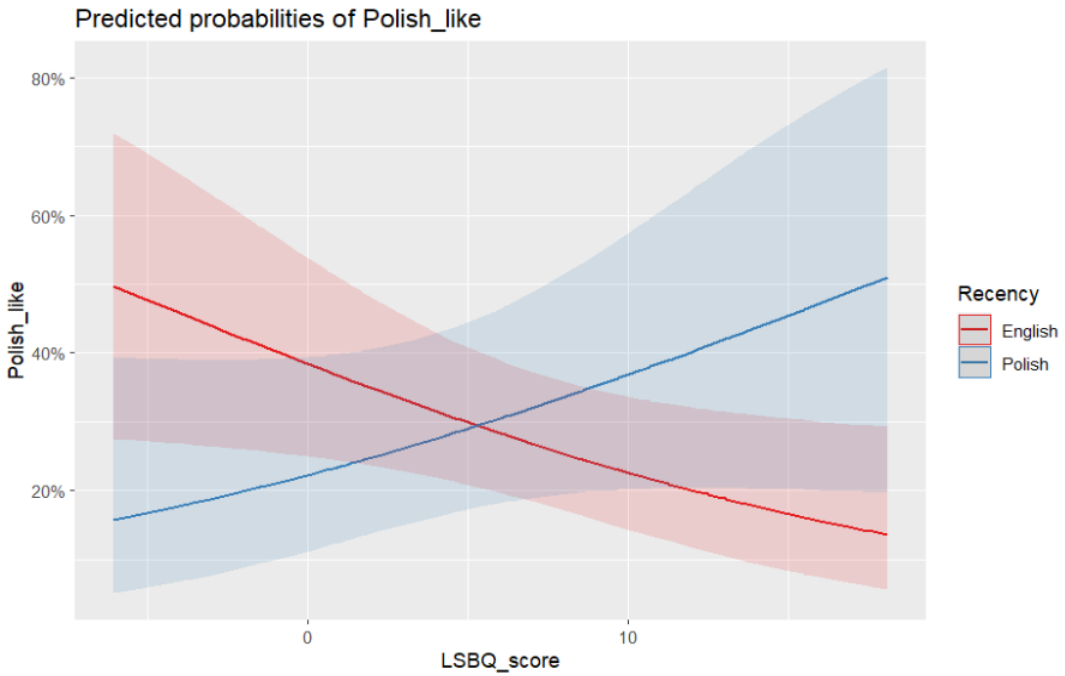


Group	Mean	Range
English_England	9,256285	19,12467
Polish_England	12,07136	12,70089
English_Poland	-0,13696	19,75554
Polish_Poland	1,068763	9,028083

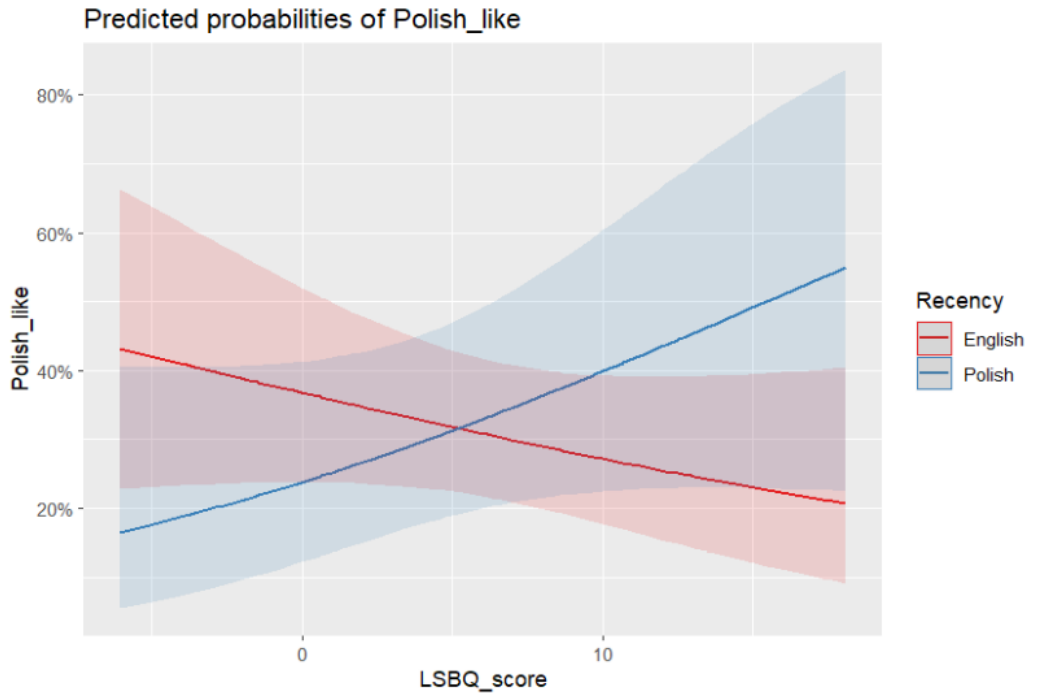
- Those living in England seem to have generally higher LSBQ scores than those living in Poland, as is expected

Analysis & Discussion

- Article construction model
  - mdl_art <- glmer(Polish_like ~ Recency*LSBQ_score + (1|Participant_No), family=binomial, data=dat_art)
  - Recency p = 0.119
  - LSBQ p = 0.1208
  - **Recency:LSBQ = 0.04003***



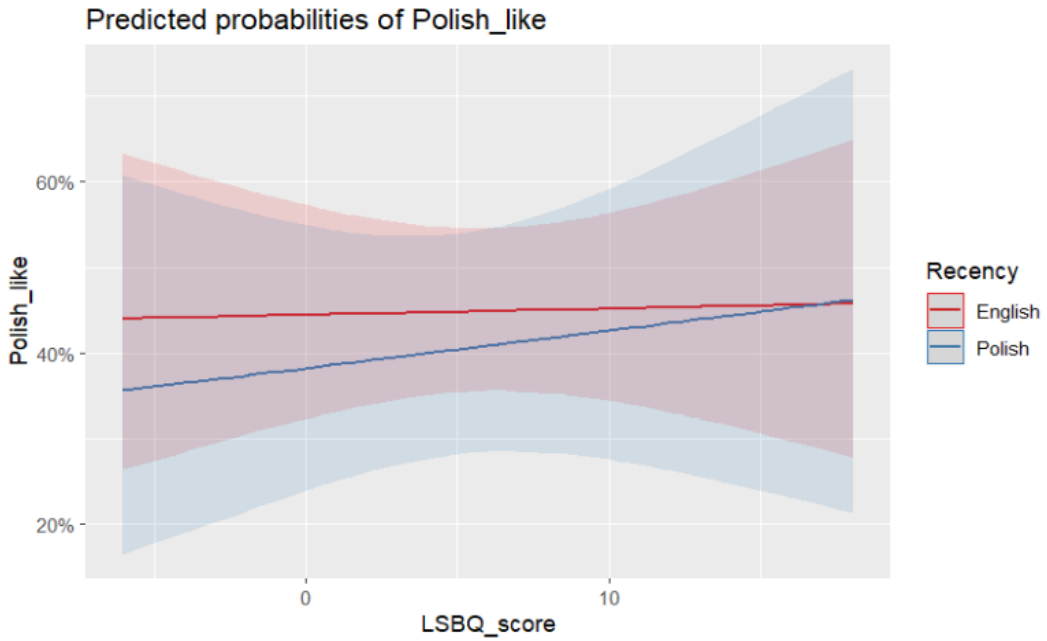
- Ditransitive construction model
  - mdl_dit <- glmer(Polish_like ~ Recency*LSBQ_score + (1|Participant_No), family=binomial, data=dat_dit)
  - Recency p = 0.2343
  - LSBQ p = 0.2203
  - Recency:LSBQ = 0.09034.

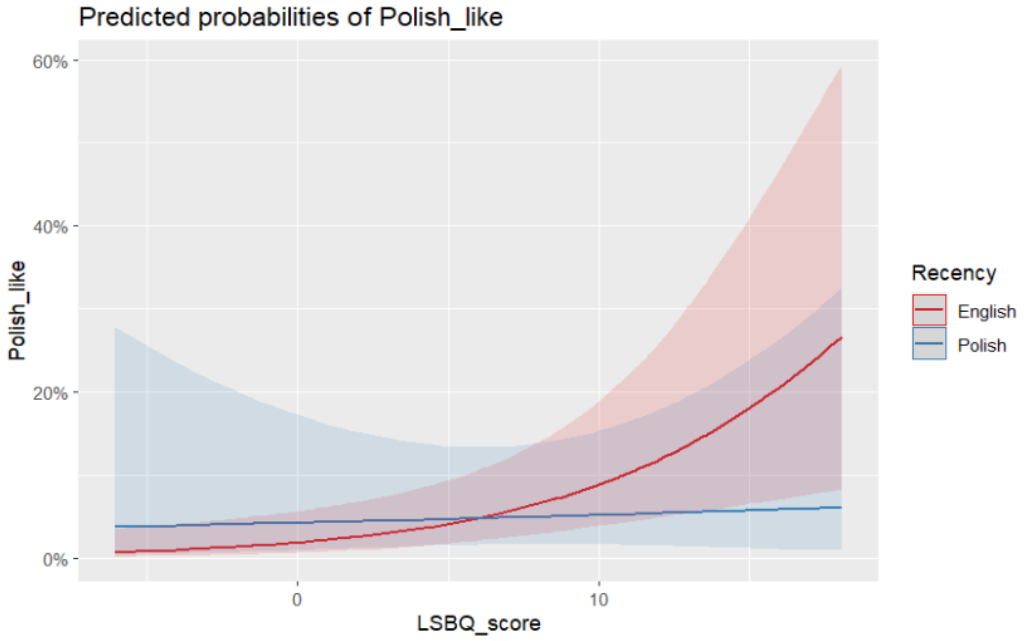


Analysis & Discussion

- Number agreement construction model
  - mdl_num <- glmer(Polish_like ~ Recency*LSBQ_score + (1|Participant_No), family=binomial, data=dat_num)
  - Recency p = 0.8861
  - LSBQ p = 0.9076
  - Recency:LSBQ = 0.7924

- Semantic gender construction model
  - mdl_sg <- glmer(Polish_like ~ Recency*LSBQ_score + (1|Participant_No), family=binomial, data=dat_sg)
  - Recency p = 0.3895
  - LSBQ p = 0.08434 .
  - Recency:LSBQ = 0.1707





Discussion

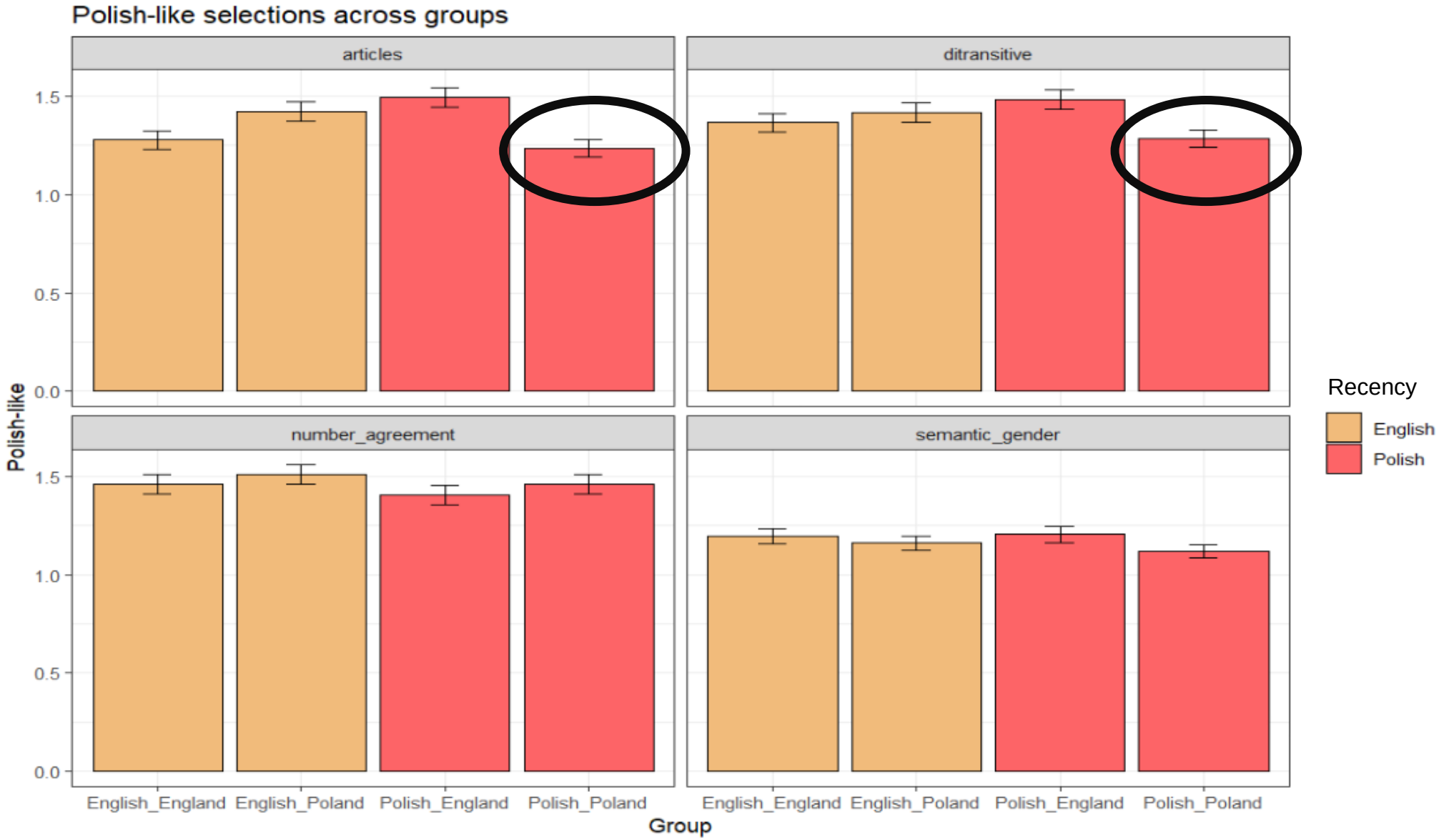
✖ H1 Those in the Polish recency group do not select significantly more Polish-like constructions than those in the English recency group.

✖ H2 Those more dominant in Polish do not choose significantly more Polish-like constructions, and participants more dominant in English do not choose significantly more English-like constructions.

½ ✓ H3 Partially correct –

- Participants more dominant in English with English recency select more English-like choices – for the article construction
- BUT: Participants more dominant in English with Polish recency select *more* Polish-like choices – for the article construction

An underlying variable?



Conclusions

- Dominance and Recency alone do not play a role in CLI
- Dominance and Recency together *do* play a role, for 1 English-like construction
  - Participants behave differently in different constructions
  - Ease of using L1 (Polish) in the experiment as L1-dominant speakers – focus on experiment content
  - Use of Polish-like forms by HS or L1 Polish speakers taking the experiment in Polish, living in England.

Dziękujemy!
Thank you!
Tusen takk!

We thank Kamil Kaźmierski for his comments on data analysis.

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