Multilingual Sentence Processing: Armenian-Russian-English

AMLaP

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Research Question:

- Are native and non-native speakers equally sensitive to certain types of linguistic information?

  - structural effect of the matrix verb
    - *eventive complement is the first parsing hypothesis (Pozniak et al., 2019)*

  - social conventions triggered by lexical information
    - *certain activities are most often assigned to be performed by certain social groups*

Participants:

- adult sequential multilinguals
  - native language:
    - *L1-Armenian*
  - non-native languages:
    - *L2-Russian*
    - *L3-English*

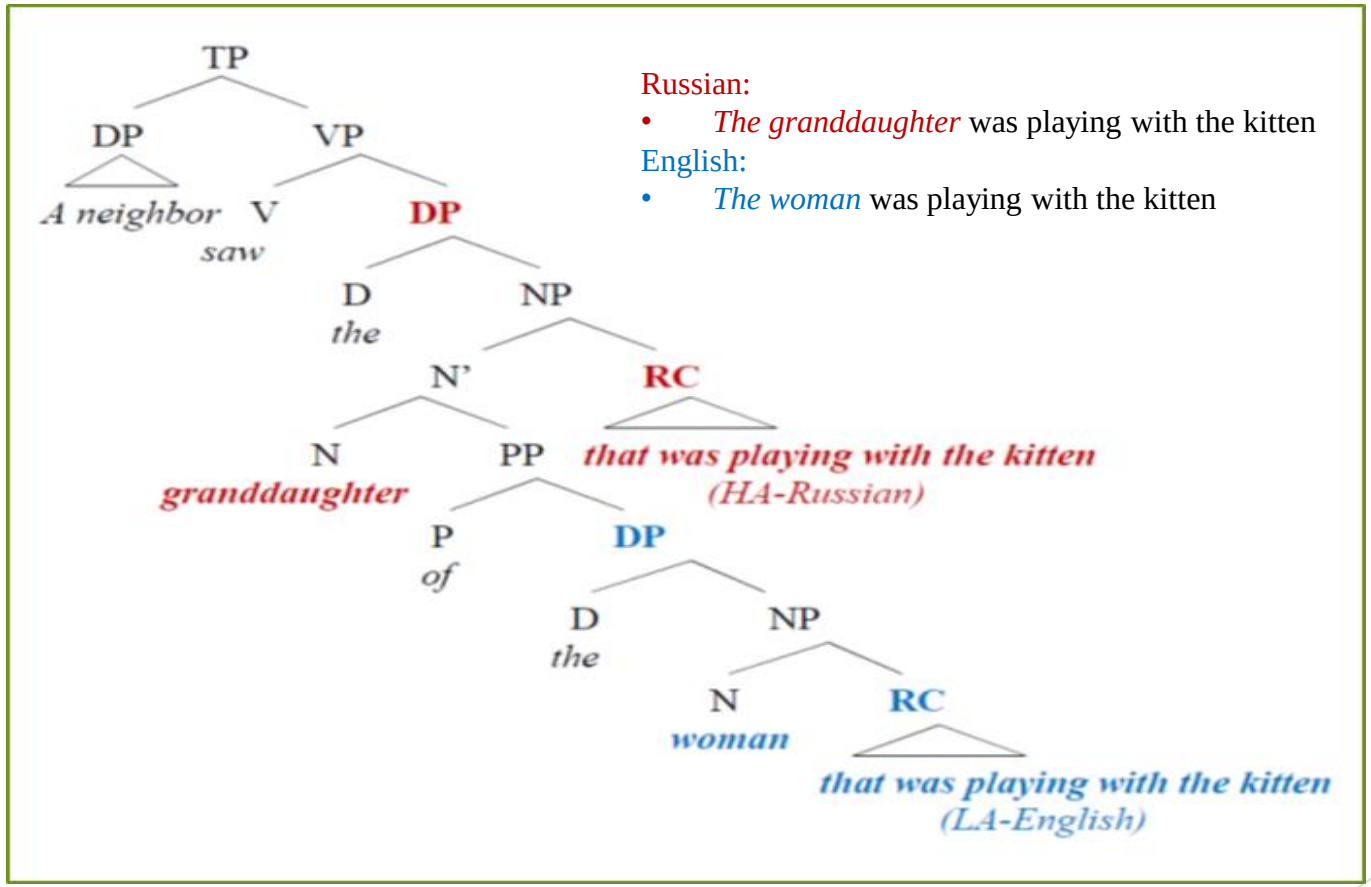
Total number of participants	***Tested in L1-Armenain***	***Tested in L2-Russian***	***Tested in L3-English***
N = 36	N = 12	N = 9	N = 15
C-test score *(proficiency in the language of testing)*	99% range 98%–100%	49% range 34%–64%	67% range 42%–90%
Age *(at the time of testing)*	41 range 34–57	37 range 32–44	47 range 33–76
Daily use of Armenian	67% of time, range 50%–90%	74% of time, range 50%–90%	30% of time, range 25%–50%

Linguistic Target:

Maria saw the granddaughter of the woman [*RC* that was *playing with the kitten*…]

Who was playing with the kitten?

(a) the granddaughter (b) the woman



Russian:

- *The granddaughter* was playing with the kitten

English:

- *The woman* was playing with the kitten

Our previous results:

Monolinguals:

Rus: HA – 70%

Eng: LA – 70%

L2ers tested in their L1s:

Rus: HA – 70+%

Eng: LA – 70%

L2ers tested in their L2:

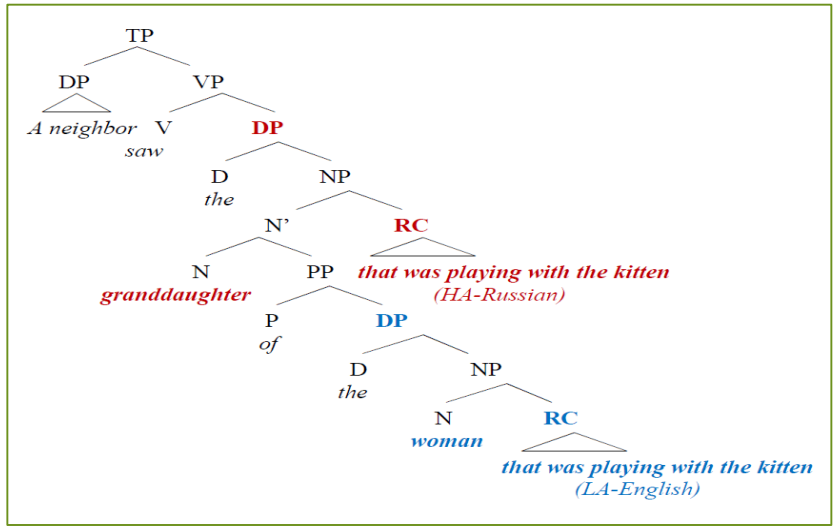
Rus (L2): HA – 51%

Eng (L2): LA – 43%

L3ers tested in their L3:

Rus-German-Eng: HA – 51%

Rus-French-Eng: LA – 40%



***non-native languages for the participants**:

- Russian (L2)
- English (L3)

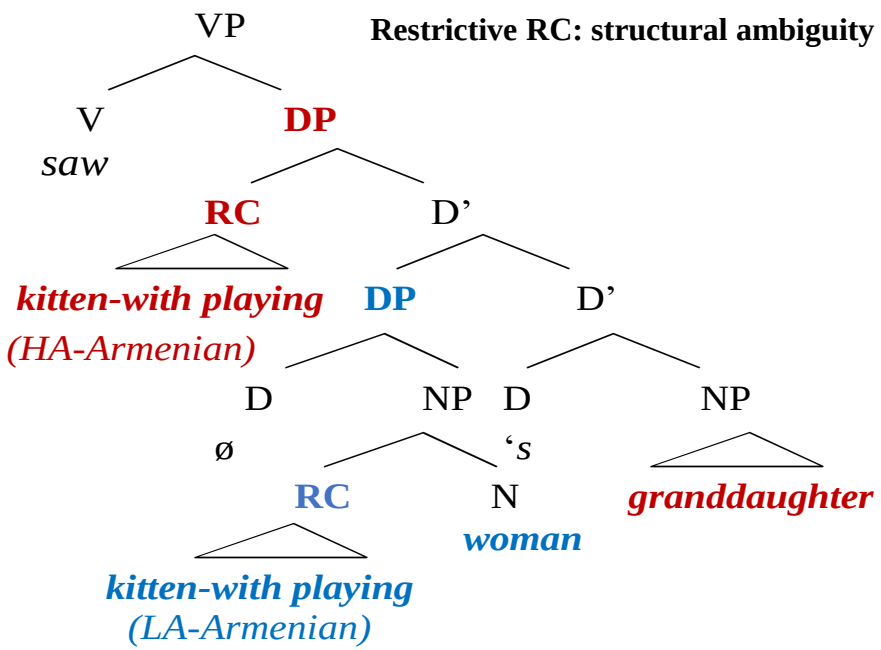
Armenian is expected to attach the RC to the head of the complex DP *(Grillo & Costa, 2014)*

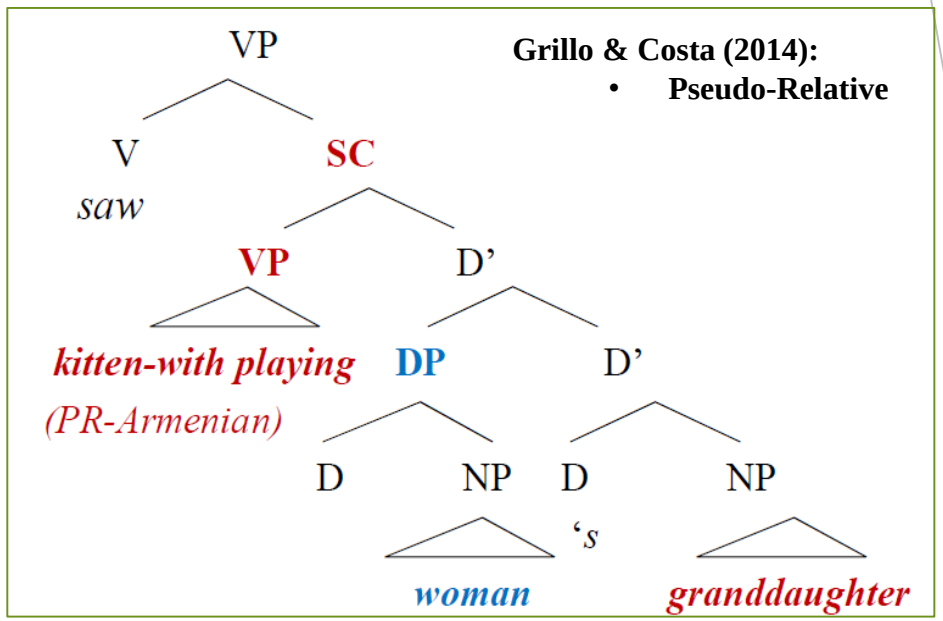
Armenian:

- *The granddaughter* was playing.

Armenian:

Kharevanukhin tecel e [RC bakum pisoi het hahacoh] knodž tornikin
Neighbor-NOM see-Past aux yard-PREP kitten-DAT prep play-PART woman-GEN granddaughter-ACC
'The neighbor saw the granddaughter of the woman playing with a kitten in the yard'





The neighbor saw (the event of) paying performed by the woman's granddaughter

Pozniak et al. (2019):

- eventive complement is the initial parsing hypothesis after a perception verb

Prediction 1: perception verb in the matrix clause has a different processing effect in Armenian, Russian and English

Armenian:

Eventive: A neighbor saw [SC [VP in the yard with the kitten playing] [DP the woman's granddaughter]]

Restrictive: A neighbor saw [DP [RC in the yard with the kitten playing] the woman's granddaughter]

Russian:

Eventive: A neighbor saw [CP (that) [DP the granddaughter-NOM of the woman] [VP was playing with the kitten]]

Restrictive: A neighbor saw [DP the granddaughter-ACC of the **woman**] [RC that was playing with the kitten]]

English:

Eventive: A neighbor saw [CP ***(that)*** [DP the granddaughter of the woman [VP was playing with the kitten]]

Eventive: A neighbor saw [SC [DP the granddaughter of the woman] **xxxxxx** [VP playing with the kitten]]

Restrictive: A neighbor saw [DP the granddaughter of the woman] [RC *that* was **playing** with the kitten]]

Prediction 2: social conventions shape RC resolution in native and non-native languages

(see Trueswell & Tanenhaus (1994); MacDonald et al. (1994); Felser (2019); Clahsen & Felser (2018) for relevant discussion)

Condition	Favoring HA	Favoring LA	Neutral
perception	Maria **saw** ***the granddaughter*** *of the woman* that was playing with the kitten.	Maria **saw** *the grandmother of* ***the girl*** that was playing with the kitten.	Maria **saw** *the sister of the neighbor* that was participating in a social project.
non-perception	The police **arrested** ***the granddaughter*** *of the woman* that was playing with the kitten.	The police **arrested** *the grandmother of* ***the girl*** that was playing with the kitten.	The police **arrested** *the sister of the neighbor* that was participating in a social project.

The analysis used Mixed Linear Effect model in R

Results: Matrix Verb

Condition	L1 Armenian	L2 Russian	L3 English
Matrix verb (perception)	HA of RC (71%)	HA of RC (71%)	HA of RC (47%) **PercVerb (53/40), *p* < .05**
Matrix verb (perception)	faster RT mid-sentence **PercVerb, *p* < .05**	slower RT mid-sentence	slower RT mid-sentence **$p < .05$**
Matrix verb (perception)	slow RespTime in ***LA bias***, **$p < .05$**	no effect on RespTime	no effect on RespTime

Results: Social Bias

Condition	L1 Armenian	L2 Russian	L3 English
Social bias	***for HA***: 78% ***for LA***: 57% ***Neutral***: 79% within the range of HA, ***p* < .05**	***for HA***: 78% ***for LA***: 61% ***Neutral***: 72% within the range of HA, ***p* < .05**	***for HA***: 63% ***for LA***: 33% ***Neutral***: 44% within the range of LA, ***p* < .05**
Social bias	slower RT mid-sentence in ***LA bias*, *p* < .05**	slower RT mid-sentence in ***LA bias*, *p* < .05**	slower RT mid-sentence in ***Neutral*, *p* < .05**
Social bias	slow RespTime with PercVerb, ***p* < .05**	no effect on RespTime	no effect on RespTime

Discussion

Multilingual parser is sensitive to the linguistic properties of individual languages

•*Perception verb influences sentence processing differently in Armenian, Russian and English*

Besides:
•*Non-syntactic information is considered in the course of sentence processing in L1, L2 and L3*

• *Social Bias does* ***not*** *override the default preference for RC resolution in a given language*

Processing in L1, L2 or L3 is governed by similar psycholinguistic mechanisms or by an integrated psycholinguistic mechanism

Main studies on RC processing

Monolingual studies:

- *Pozniak, Hemforth, Haendler, Santi & Grillo (2019); Grillo, Costa, Fernandes, Santi (2015); Grillo & Costa (2014); Gibson (1998); Cuetos & Mitchell (1998); Gibson, Pearlmutter, Canseco-Gonsalez & Hichock (1996)*

L2 studies:

- *Sokolova (2020); Sokolova and Slabakova (2019); Witzel, Witzel & Nicol (2012); Dekydtspotter, Donaldson, Admonds, Fultz & Petrush (2008); Clahsen & Felser (2006); Rodriguez, 2004; Felse, Marinis, & Clahsen, 2003; Felser, Roberts, Gross, & Marinis, 2003; Fodor, 2002; Frenck-Mestre, & Pynte, 2000; Fernandez, 1999;*

L3 studies:

- *Sokolova & Slabakova (2019); Llama (2017); Rothman (2010); Rah (2010)*


THANK YOU
FOR YOUR
ATTENTION