

## Phenomenon-Specific Sentence Processing in Native Speakers and Language Learners

The study investigates the differences and similarities in sentence processing between native speakers (NSs) and second language (L2) adult learners of Russian and English. The experiment sets two goals: to establish 1) what processing pattern NSs and L2-learners of Russian and English show when reading relative clauses (RCs) with ambiguities like “*I saw the son of the doctor that was talking over the phone*”; 2) whether NSs and L2-learners are sensitive to a specific linguistic condition that favors either high (HA) or low (LA) attachment resolution.

In a self-paced reading task, native speakers of English and Russian and L2-learners (*Table 1*) read a set of sentences and answer a comprehension question after every sentence. The flexible platform for experiments in language processing Linger measures the subjects’ reading time and records their answers to the comprehension questions.

As predicted by Fodor (1998), to answer a comprehension question like “*Who was talking over the phone?*”- NSs of Russian, French, Dutch, German, Greek, and Italian prefer – “the son” (HA), whereas NS of English, Norwegian, Romanian, and Swedish prefer – “the doctor” (LA). The 1<sup>st</sup> research question (RQ) is targeted to confirm the difference between NSs of Russian and English in RC attachment resolution. The 2<sup>nd</sup> RQ establishes what processing pattern L2-learners have. The predicted shift towards L2-like attachment resolution when the subjects are tested in the L2 is based on the results of Dekydtspotter (2008) and Dussias (2003) that show L2-like RC attachment resolution in language learners.

The 3<sup>rd</sup> RQ aims at checking whether a perception verb in the matrix clause changes the overall attachment resolution pattern towards HA, in both monolinguals and L2-learners. The expected shift to HA comes from the research by Grillo and Costa (2014) that explains overall HA in French, Spanish and Italian by a language-specific interpretation of the RC. Preserving the same syntactic structure the RC can modify the verb and create an event-oriented interpretation like “*I saw (what? – the event that) the son of the doctor (that) was talking over the phone*”. This syntactic modification is called a pseudo-relative (PR). The PR-interpretation can have only one doer of the action in the RC – *the son* – and favours HA. The semantic condition for a PR-interpretation is a perceptual verb in the matrix clause.

The present study shows that in languages like English and Russian, where the event-oriented interpretation requires a Small Clause (SC) and causes the change of an RC structure, both NSs and L2-learners are sensitive to the effect of the perception verb in the matrix clause ( $p=.001$ ). Showing significantly different attachment resolution patterns (*Chart 1*) neither NSs of Russian or English nor L2-learners of these languages rely on lexical meaning of the target nouns and don’t show gender or social biases in sentence interpretation (*Table 2*). Meanwhile, all the subjects favour HA of the RC when there is a perception verb in the matrix clause.

The results in attachment resolution between NS-groups support the findings by Fodor (1998). The shift towards L2-like RC processing goes in line with the findings by Dekydtspotter (2008) and Dussias (2003) and cannot be explained by just processing of the lexical meaning or the words in an RC. Even though neither Russian nor English allow PRs, the present study finds the overall effect of the perception verb on attachment resolution, the same as in Grillo and Costa (2014). Thus, the perception verb activates the event-oriented interpretation of an RC that is reduced to the SC in Russian and English and favours HA. L2-learners as well as NSs are sensitive to the inner syntactic structure of a sentence and follow linguistic prompts in RC attachment resolution. The overall sensitivity to the effect of the matrix verb in an RC does not change the overall attachment resolution preference in NSs but it speaks for phenomenon-specific rather than L1- or L2-like pattern of sentence processing in L2-learners.

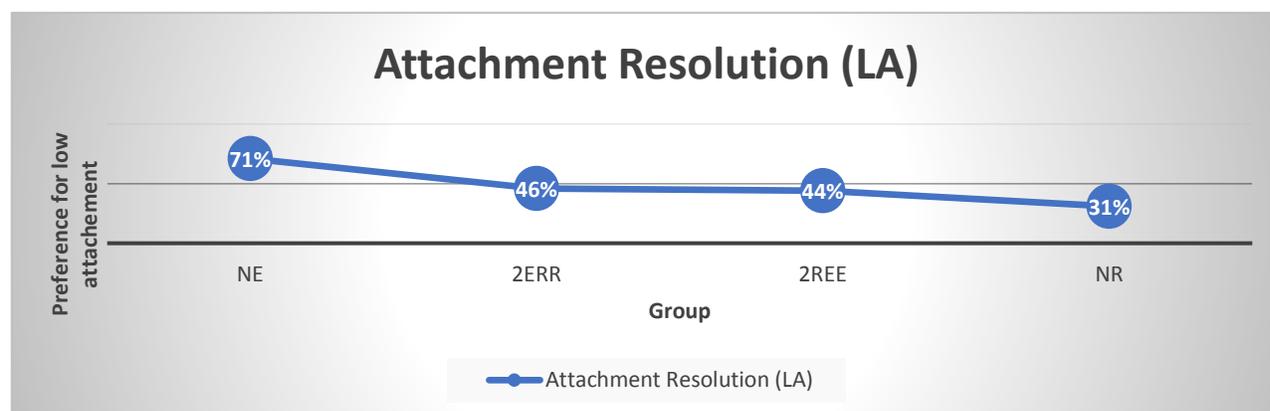
**Table 1. Background information about the subjects of the study**

group	NE (Native speakers of English)	NR (Native speakers of Russian)	2ERR (L2-learners: NSs of English / learning Russian, tested in Russian)	2REE (L2-learners: NSs of Russian / learning English, tested in English)
Native language	English	Russian	English	Russian
Language of testing	English	Russian	Russian	English
Knowledge of foreign languages	None	None	Russian (Spanish – very low)	English
Language proficiency	native	native	low-intermediate	low-intermediate
C-test , % correct	99%	99%	38%	37%
Length of exposure	throughout life-time	throughout life-time	2 years (4 classes per week)	4 years (2 classes per week)
Mean age	40	29	21	21

**Table 2. Sample stimuli quadruple that could favor gender biased RC-interpretation**

Masculine, no gender bias	I saw the nephew of the actor that was talking about cosmetics
Feminine, no gender bias	I saw the sister of the woman that was talking about cosmetics
Possible bias towards HA	I saw the mother of the boy that was talking about cosmetics
Possible bias towards LA	I saw the son of the woman that was talking about cosmetics

**Chart 1. Overall attachment resolution preference per group**



## References

1. Dekydsprotter, L., Donaldson, B., Admonds, A.C., Fultz, A.L. & Petrush, R.A. (2008). Syntactic and prosodic computation in the resolution of relative clause attachment ambiguity by English-French learners. *Studies in Second Language Acquisition*, 30, 453-480.
2. Dussias, P.E. 2003. Syntactic ambiguity resolution in L2 learners. *Studies in Second Language Acquisition*, 25 (04), 529-557.
3. Fodor J.D. (1998). Unambiguous triggers. *Linguistic Inquiry*, 29 (1), 1-36.
4. Grillo, N., & Costa, J. 2014. A novel argument for the universality of parsing principles. *Cognition*, 133 (1), 156-187.