Two languages – single parser: code-switching in relative clause attachment resolution

Human Sentence Processing 2022

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Theoretical motivation

Implicit Prosody Hypothesis

◦ prosody is implicitly used in sentence parsing and shapes attachment resolution of ambiguous relative clauses

(Fodor, 2002)

◦ in native and non-native languages

- ◦ **L1:** *Jun, S., Kim, A. (2004), Jun, S.-A., Koike, C. (2003), Jun S.-A. (2008)*
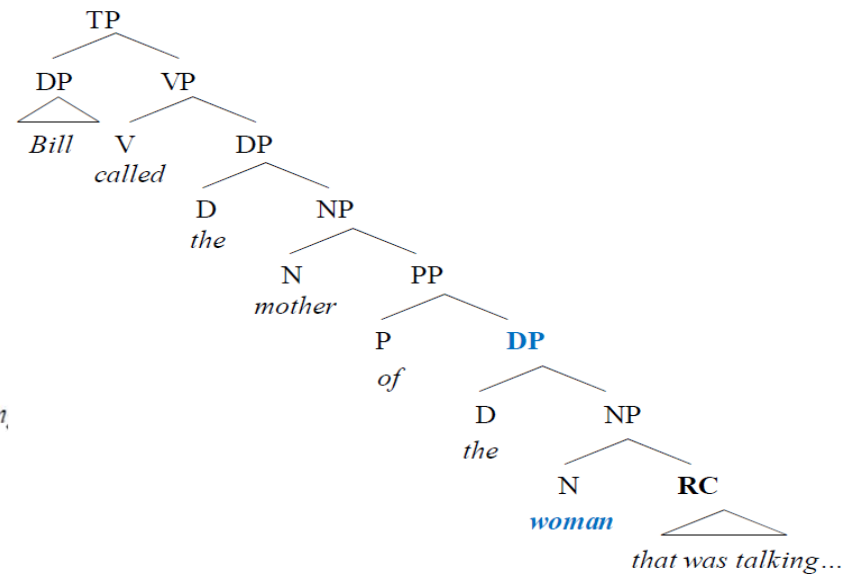- ◦ **L2**: *Dekydtspotter et al. (2008), Fromont et al. (2018), Goad et al. (2021)*
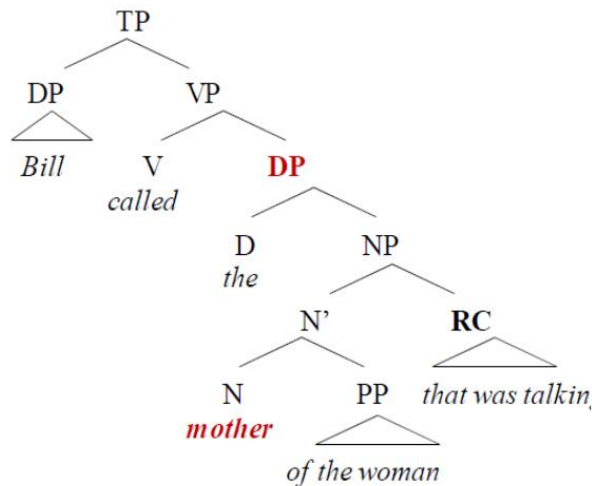
Linguistic Target

Bill called the mother of the woman [RC that was talking about cosmetics]

Who was talking about cosmetics?
a) the mother   *b) the woman*

RC parsing: Implicit Prosody Hypothesis

HA: Bill called <u>the mother</u> of the woman prosodic break that was talking

LA: Bill called the mother prosodic break of <u>the woman</u> that was talking

HA languages:
Russian, Spanish, Italian,
French, German, Greek

LA languages:
English, Norwegian,
Swedish, Romanian

Hypothesis 1

code-switching forces a prosodic break which shapes RC parsing as predicted by the IPH

Predictions

HA: Bill called the mother of the woman *that was talking about cosmetics in the yard*
LA: Bill called the mother *of the woman that was talking about cosmetics in the yard*

With any direction of code switching: Eng > Rus or Rus > Eng

Hypothesis 2

Grammar of a code-swithed sentence is defined by the matrix language
  ◦ matrix language – language of the inflecion of the matrix verb

(Myers-Scotton & Jake, 2018)

Predictions

Bill called *the mother of the woman that was talking about cosmetics in the yard*
Bill called the mother of the woman that was talking about cosmetics *in the yard*

HA: Rus > Eng
LA: Eng > Rus

Hypothesis 3

Even advanced L2 learners almost never demonstrate a complete switch to the TL-like RC resolution in thier L2

HA-reference category

	L2-Russian	L2-English	L3-English
English-Russian	50%		
Russian-English		57%	
Russian-German-English			51%
Russian-French-English			60%
Armenian-Russian-English	71%		47%

Predictions

Bill called *the mother of the woman that was talking about cosmetics in the yard*
Bill called the mother of the woman that was talking about cosmetics *in the yard*

Bill called the mother of the woman *that was talking about cosmetics in the yard*
Bill called the mother *of the woman that was talking about cosmetics in the yard*

Overall Russian-like HA

Experiment

Self-paced reading experiment administered via IbexFarm

Participants: Russian-English L2 learners

N	Age	Exposure to L2, yeas	Daily use of L2, hours	C-test, %
21	20 (19-20)	13.5 (11-17)	3.5 (1-8)	78 (63-90)

Proficiency:

63-80 % in C-test – Intermediate
80-90 % in C-test – Advanced

Data Analysis: Linear Mixed Model in R
Independent variables: Pace of CS * Direction of CS * Length of CS * Proficiency

Results:

RC attachment

Place of CS, *p* < .05

HA - reference category

	HA_pause	LA_pause	Rus_length	Eng_length
RC-resolution	22%	15%	22%	28%

Place of CS * Proficiency, *p* < .01

	Intermediate	Advanced
Eng_length	39%	17%

Results:

Processing time

Place of CS * Direction of CS, p <. 05

CS costlier: English > Russian = **into L1 (3/4)**
Matrix Language:
Bill called *the mother of the woman that was talking about cosmetics in the yard*
Bill called the mother of the woman that was talking about cosmetics *in the yard*

LA pause:
Bill called the mother *of the woman that was talking about cosmetics in the yard*

CS costlier: Russian > English = HA-L1 > LA-L2
HA pause:
Bill called the mother of the woman *that was talking about cosmetics in the yard*

Discussion

- Code-swithing forces a prosodic break which is implicitly used in RC parsing

- Matrix language does not shape RC parsing

- Minimal attachment is a preferred parsing strategy for processing of RCs with code-switching

Further steps:
◦ Russian-Spanish L2ers (HA-L1 / HA-L2)
◦ Spanish-English L2ers (HA-L1 / LA-L2)
◦ Norwegian-English L2ers (LA-L1 / LA-L2)

Thank you very much for your attention!

References

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