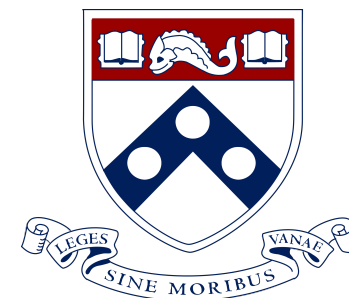


The Role of Gender in the Acquisition of the Serbian Case System



Stefan Pophrastic, Kathryn D. Schuler
The Child Language Lab, University of Pennsylvania
LSA 2021 Annual meeting Poster



	Case	Class I	Class II	Class III
Singular	Nominative	-ø/-o/-e	-a	-ø
	Genitive	-a	-e	-i
	Dative	-u	-i	-i
	Accusative	-ø/-o/-e // -a	-u	-ø
	Locative	-u	-i	-i
	Instrumental	-om/-em	-om	-ju/-i
	Vocative	-e/-u	-o	-i
Plural	Nominative	-i	-e	-i
	Genitive	-a	-a	-i
	Dative	-ima	-ima	-ima
	Accusative	-e	-e	-i
	Locative	-ima	-ama	-ima
	Instrumental	-ima	-ama	-ima
	Vocative	-i	-e	-i

Brown & Alt (2004)
Weisser (2006)



√CAT

-a

√DOG

-u

√DOLL

-e

-i

√CHAIR

-om



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Plural	Nominative	-i	-e	-i
	Genitive	-a	-a	-i
	Dative	-ima	-ima	-ima
	Accusative	-e	-e	-i
	Locative	-ima	-ama	-ima
	Instrumental	-ima	-ama	-ima
	Vocative	-i	-e	-i

Brown & Alt (2004)
Weisser (2006)



We propose the use of gender

- Externally motivated and salient
- Clear categorization of nouns
- We hypothesize that
 - they are productively correlated with noun classes
 - And that children utilize this correlation in their acquisition



We use the TP to test this

The Tolerance Principle quantifies the number of exceptions a productive rule can tolerate before its formation becomes computationally inefficient.

Let R be a rule that is applicable to N items, of which e are exceptions. R is productive if and only iff (Yang 2016):

$$e \leq \theta_N \text{ where } \theta_N := \frac{N}{\ln N}$$

Yang (2006)
Schuler et al. (2016)
Kostić (1999)



1. Is gender a productive indicator of nominative singular suffixes?

TP applied with following parameters:

- N = number of nouns with a specific gender
- N – e = number of N nouns that have a given nom. sg. suffix, i.e. follow the rule
- e = number of N nouns that have another nom. sg. suffix, i.e. don't follow the rule

gender	N	θ_n	suffix	N-e	e	Productive?
feminine	121	25	-a	110	10	yes
masculine	112	23	-C	107	5	yes
neuter	38	10	-o	22	16	no
			-e	16	22	no
Neuter	38	10	-o/-e	38	0	yes

Gender is a productive indicator of noun class.



2. Are nominative singular suffixes productive indicators of gender?

- TP applied with following parameters:
- N = number of nouns taking on a specific nominative singular ending
- N – e = Number of N nouns that take on a specific gender, i.e. follow the rule
- e = number of N nouns that take on another gender, i.e. don't follow the rule

Nom. Sg. suffix	N	θ_n	gender	N-e	e	Productive?
-a	110	23	fem	110	0	Yes
			masc	0	110	No
			neut	0	110	no
-C	117	24	fem	9	108	no
			masc	107	10	yes
			neut	0	117	no
-o	28	8	fem	0	28	No
			masc	5	23	No
			neut	22	5	yes
-e	16	5	Fem	0	16	No
			Masc	0	16	No
			neut	16	0	yes

Nominative singular ending is a productive indicator of gender.



3. Is belonging to a specific noun class a productive indicator of gender?

- TP applied with following parameters:
- N = number of nouns belonging to a single noun class
- N – e = number of N nouns that have a specific gender, i.e. follow the rule
- e = number of N nouns that have a different gender, i.e. don't follow the rule

Class	N	θ_n	gender	N - e	e	Productive ?
Class I	150	29	Fem	0	150	no
			Masc	112	38	No
			Neut	38	112	No
			Not fem	150	0	yes
Class II	111	23	Fem	112*	0	yes
			masc	0	112	No
			Neut	0	112	no
Class III	10	4	Fem	10	0	yes
			Masc	0	10	No
			neut	0	10	no



Conclusions

- Gender and noun class are productively correlated
 - Nominative singular endings productively predict gender
 - **Gender productively predicts noun class (via nom. sg. endings)**
 - Noun classes II and III productively predict gender
- Meaning children may use and exploit these correlations to acquire complex case systems.



Next steps: a Wug test

- We plan to run Serbo-Croatian speaking 2-3 year olds in a wug test to elicited case suffixes and gender marking (Berko 1958)
- We will use this to determine whether children's gender marking patterns can predict the cases the know.
- Thus far, we've conducted a pilot wug test with 30 Serbian-speaking adults (find me later to hear more)



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Questions?



Children acquiring Serbo-Croatian and other Slavic languages must acquire complex systems of nominal case inflection. Serbo-Croatian obligatorily marks nouns for 1 of 7 cases, 1 of 3 noun classes, and singular/plural. The inflectional paradigm is further obscured by much syncretism/homophony across the noun classes along with various phonological phenomena. Unraveling such a complicated paradigm through individual inflected word tokens poses a significant challenge for young children. We propose that children exploit a productive correlation between gender and noun class to acquire this paradigm more easily.

We first apply the Tolerance Principle (Yang 2015) on corpus data to answer:

Is there a productive correlation between gender and noun class?

We find that there is a productive correlation. Therefore, children could theoretically exploit it in their acquisition of case inflection. We then pilot a study aimed at answering our second question:

Do children use the correlation between gender and noun class to acquire the case inflectional system?

Due to the pandemic we were only able to pilot this second study with adults.