



Variable and Exceptional Assimilation of the Definite Article l- in Moroccan Arabic

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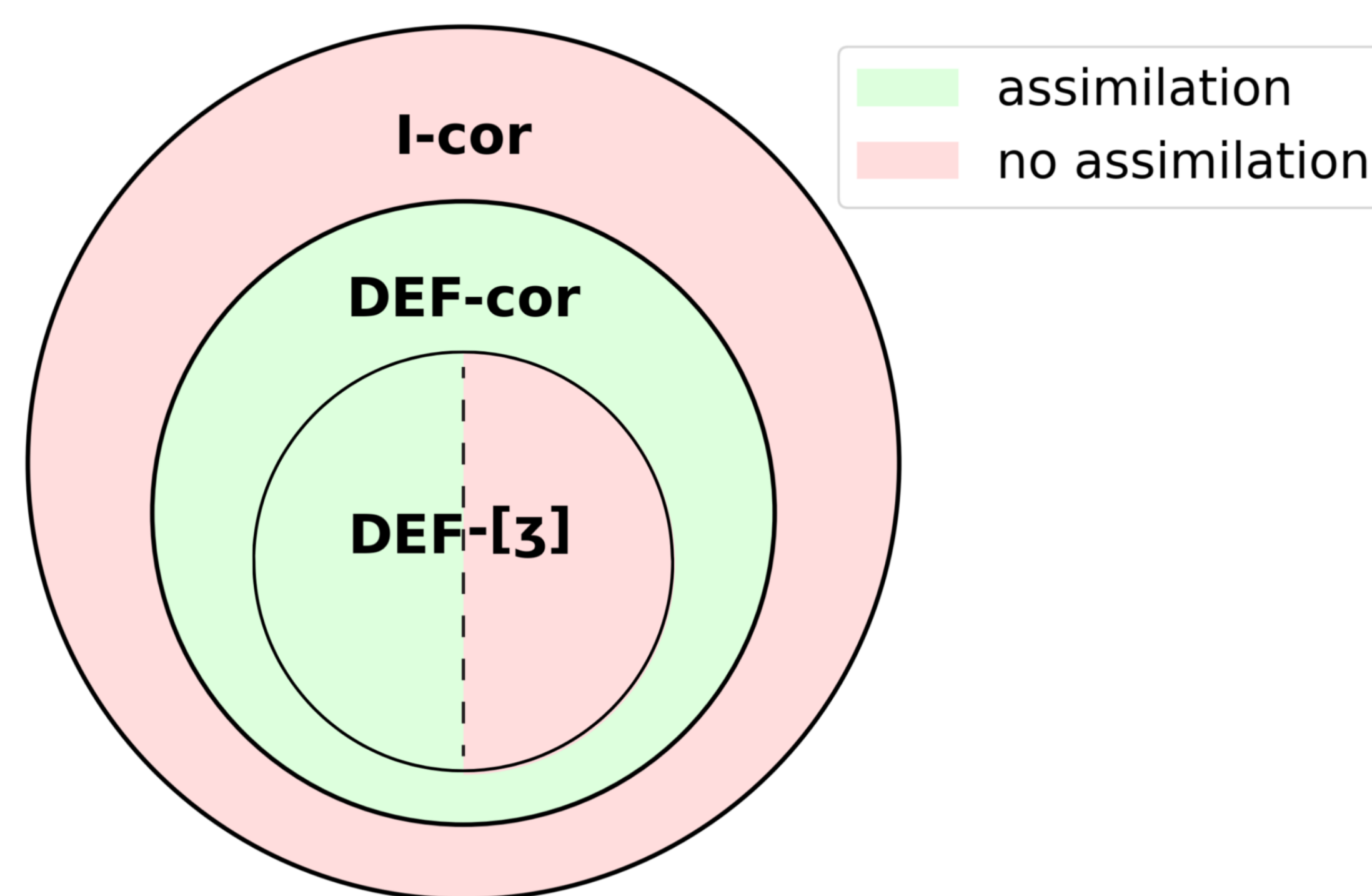


Introduction

- When the definite article [l] is followed by a coronal, total assimilation occurs, except for some words beginning with [ʒ], where assimilation is variable:

PREP-cor	no assimilation	darɔ	l-darɔ	'to house'
DEF-cor	assimilation	dar	d-dar	'the house'
DEF-[ʒ]	assimilation	ʒoqa	ʒ-ʒoqa	'the gathering'
	no assimilation	ʒomhor	l-ʒomhor	'the audience'

- I show that the variation of [ʒ] words is conditioned by the segment that follows [ʒ].
- I propose a MaxEnt model that learns the entire grammar, predicting exceptionality for both assimilated and non-assimilated [ʒ] words.



Corpus Study

- I created and examined a corpus of 120 [ʒ]-initial nouns, 76 of which assimilate and 44 do not.
- Sources of data:** author, other native speakers, Darija Open Dataset (Outchakoucht & Es-Samaali, 2021), Moroccan Arabic-English dictionary (Harrell & Sobelman, 1966) and other previous work.

→ Assimilation is phonologically conditioned by the following context: full vowel, schwa, or consonant.

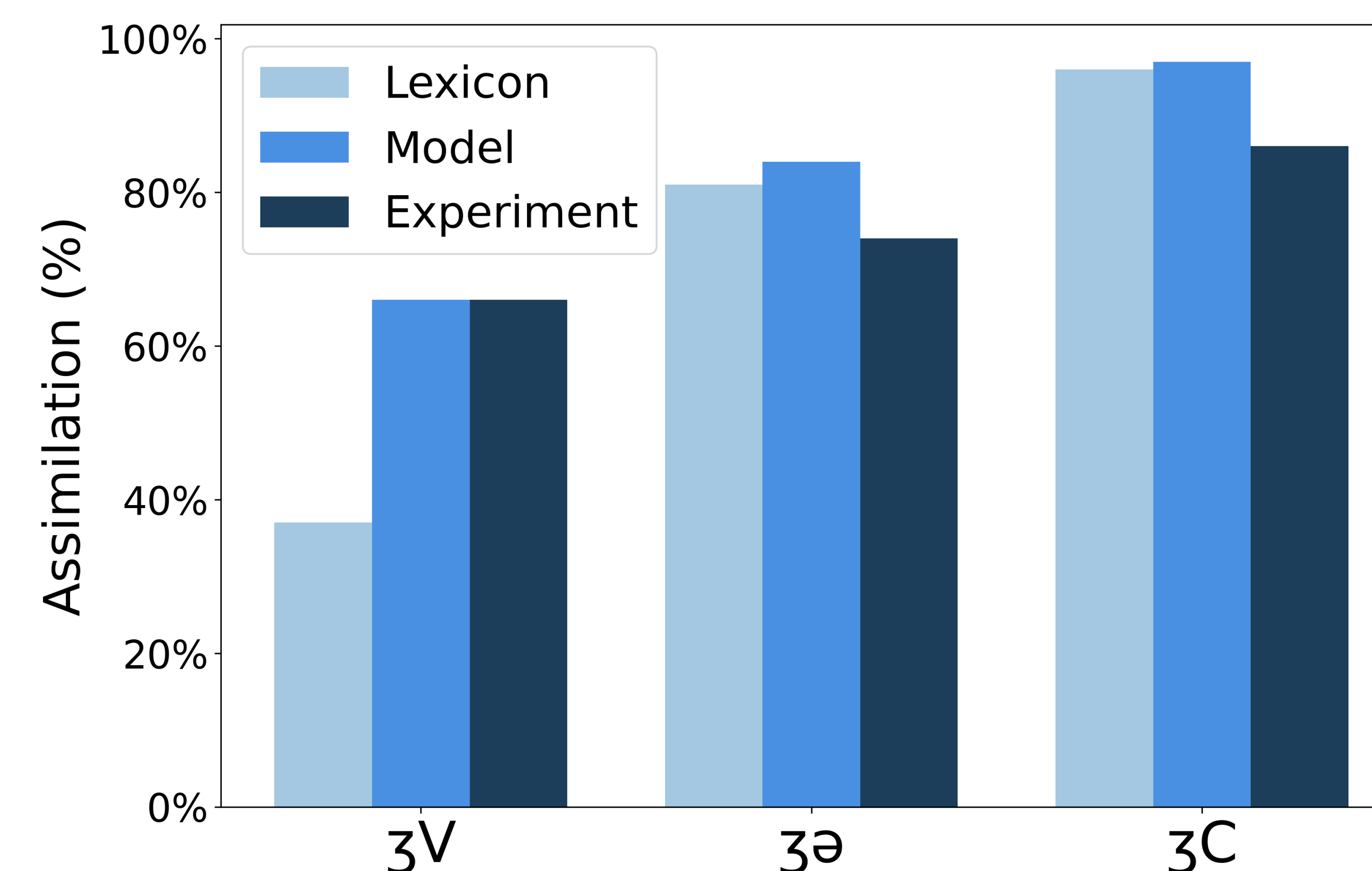
Learning

Learning model: MaxEnt, specifically Harmonic Grammar in R (Staubs, 2011) implementation, incorporating lexically-indexed constraints (Pater, 2000).

Training Data: 104 items, 34 of which were [ʒ]-initial words.

General constraints: *l[cor], Max(lat), Dep, *CCC, *ə_σ....

Indexed constraints for each lexical item: *l[cor]_L, Max(lat)_L.



Results: the model gave weight to the indexed constraints depending on the following context and assimilation pattern, e.g.:

Context	Assimilates	Weights	
		*l[cor]	Max(lat)
ʒV	Yes	7.3	0
	No	0	8.1

→ Predictions for nonce words aligned with lexicon, except for [ʒV] context.

Nonce-word experiment

- A forced-choice acceptability judgment experiment.
- Participants:** 32 adult Moroccan Arabic speakers.
- Materials:** 42 words (6 real words and 36 nonce words).

Context	non-cor	non-[ʒ]-cor	[ʒ]-initial
CV	ħan	sak	ʒin, ʒas
Cə	bərx	dənt	ʒərq, ʒəht
CC	kfax	ʃruf	ʒmir, ʒbuq

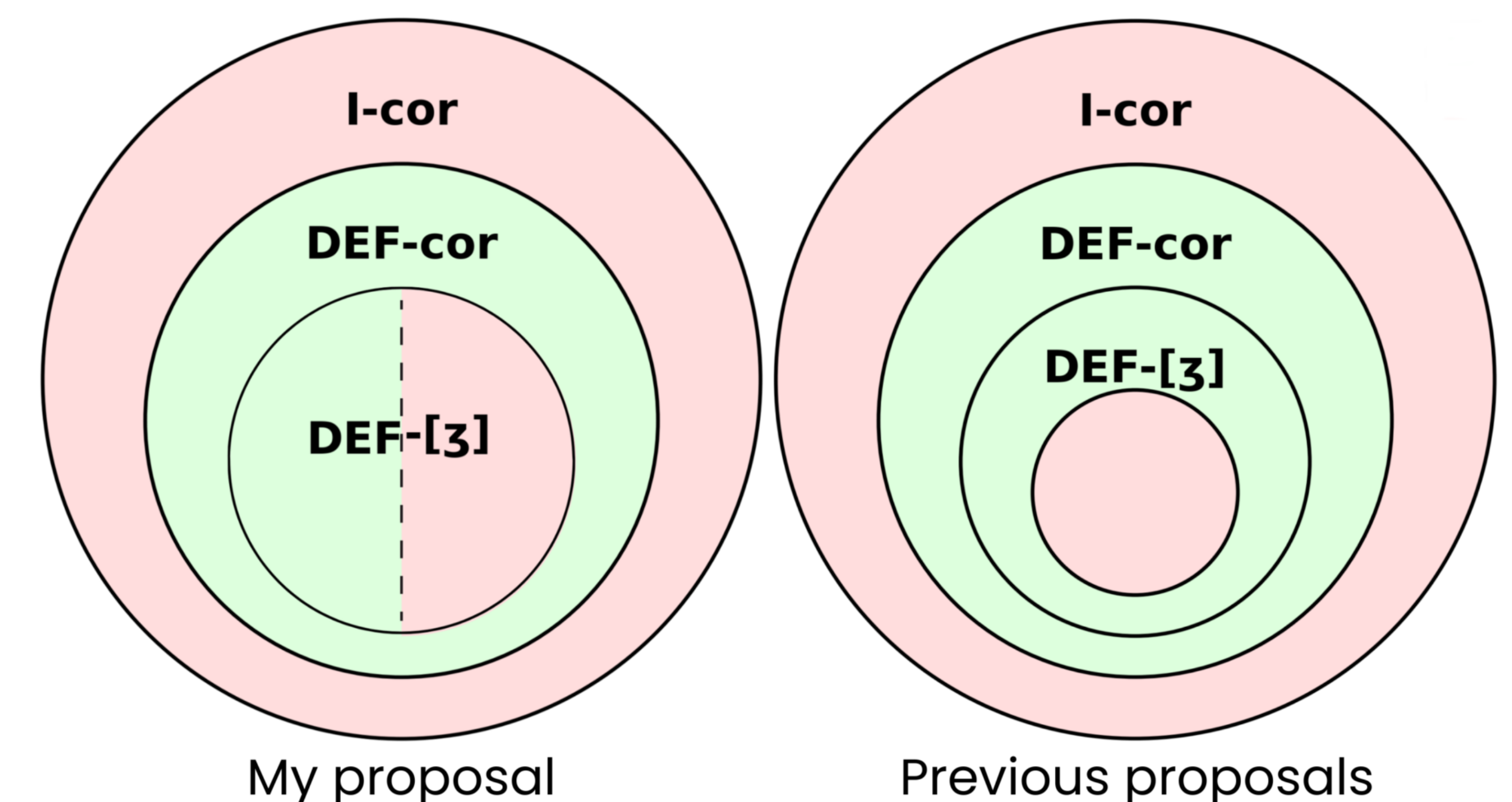
- Procedure:** listening to assimilated and non-assimilated versions of each item and selecting their preference.

→ The results aligned with the model predictions.

Conclusions

→ The proposed MaxEnt model with indexed constraints learned the entire grammar of [l] followed by a coronal.

→ Assimilation of the definite article to [ʒ] words displays patterned exceptionality where both assimilated and non-assimilated [ʒ] words can be exceptional, contrary to previous proposals (Harrell, 1962; Heath, 1987; Freeman, 2016).



→ The results support the view that processes are gradient and driven by lexical statistics.