MORPHOSYNTACTIC VARIATION IS PRESERVED, NOT REGULARIZED, WHEN AN OPTIONAL FORM IS RARE

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Morphological systems containing unconditioned variation often evolve, becoming more regular over time. This regularization may arise, at least in part, from learning biases that favor low entropy, more learnable systems (see Smith et al. 2017 for review). However, not all such variation is regularized. In natural language, optional marking systems — differential argument marking or optional plural, for example — do not appear to undergo rapid simplification or regularization over time. While social or grammatical context may license probabilistic variation in these systems, we propose that optionality itself may play a role. Optional marking systems are common in many languages and are typologically more frequent than variation between alternating forms (Chappell & Verstraete 2019). Does variation between one form and its lenited version license stable variation, while two distinct alternating forms tend to regularize?

In Experiment 1, we asked whether a variable plural marking system with a single optional form (*-ka*) is more stable — quantified as less likely to be regularized — than one with two alternating forms (*-ka* and *-po*). We exposed 60 adults to an artificial language with either optional or alternating plural markers.

Table 1. Singular and plural markers for all experimental conditions.

Experiment	Condition	Singular	Plural	
			67%	*33%*
1	Optional	−∅	-ka	−∅
	Alternating	−∅	-ka	-po
	Alternating (same as singular)	-po	-ka	-po
2	Optional frequent	−∅	-ka	−∅
	Optional rare	−∅	−∅	-ka

On each of 72 exposure trials — three singular and nine plural for each of six novel nouns — learners saw an image (e.g. one or two pigs) and heard the corresponding sentence. Plurals were more frequently marked with *-ka* (six of nine plural trials per noun), but marker choice was not predicted by noun (or any other context). At test, participants saw 18 plural images and selected which of the two possible plural sentences was best.

Since optional marking systems are more typologically frequent than alternating, we predicted optionality would be more stable. But, contrary to our prediction, optional learners regularized significantly more (see Figure 1).

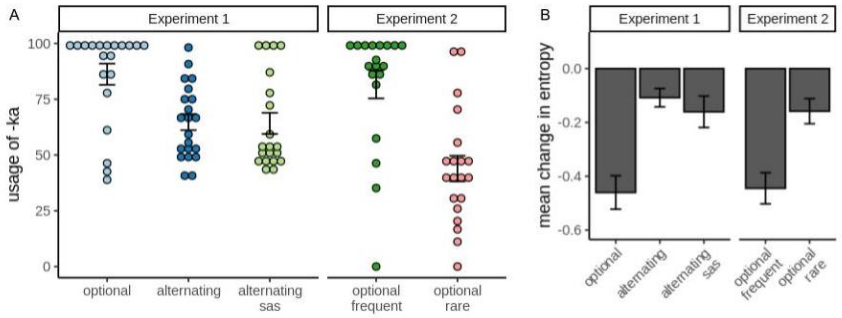

Figure 1. (A) Individual usage of *-ka* and sem. (B) Mean change in entropy from input and sem. Regression analysis showed a significant effect of condition on entropy in Experiment 1 (Est=0.35, SE=0.07, $p<0.0001$) and Experiment 2 (Est=0.29, SE=0.07, $p<0.001$).

Why might our artificial language results conflict with what we observe in natural language? One possibility is the frequency of the optional form in our input. Across languages, persistent variable forms appear more rarely in their optional contexts and rates of language change tend to slow down as a form becomes more sparse (e.g. Song 1975). Perhaps optional forms can license stable variation, but only when they are rare?

To test this, in Experiment 2, we exposed another 40 adults to either the optional language from Experiment 1 (here called optional frequent) or a language with a rarely attested optional plural marker (33% of plurals; see Table 1). The optional frequent language was regularized as expected. But, when the optional form was rare, adults regularized significantly less (see Figure 1).

Our results suggest that, while optionality alone is not inherently more stable, optional forms used rarely may resist regularization, perhaps reflecting a bias for salience or against regularizing to null.

References

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