Systematic morphology is efficient, but not always used

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Linguistic research aims to correctly characterize lexical and grammatical distributions, and identify core properties which generalize across languages and speakers. One such property is systematic mapping between grammatical meanings (e.g. past tense) and specific forms (e.g. -ed for English verbs) in inflectional morphology.

I first present a computational study of verb and pronoun paradigms across typologically diverse languages, which finds that systematic encodings optimize competing cognitive pressures toward simplicity in production and accuracy in comprehension. In other words, systematic morphology supports efficient communication, and recurs across languages.

I then present a case study of a particular systematic relation: grammatical gender and plural class in German nouns. Both theoretical and computational analyses predict that German speakers should reliably condition plural class on gender; however, across three behavioral experiments, most speakers ignore it. These findings raise a cognitive puzzle: how does systematic structure persist across languages without reliable use by speakers?