

When morphology fails: what paradigm gaps can tell us about gradient productivity

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Over the past decade, work on semi-productive morphological processes has repeatedly demonstrated that speakers are sensitive to gradient patterns at many different levels of generality, and can readily generalize these patterns to low-frequency, unknown, and novel words. The main focus of such studies has been cases in which multiple competing processes, at varying degrees of strength and specificity, all achieve semi-productive status. For example, for the hypothetical verb 'spling', English speakers are willing to entertain past tense forms 'splinged' (following the general and most productive pattern of suffixation), 'splung' (employing the $i \rightarrow \Lambda$ change characteristic of words with voiced coronal onsets and velar codas) or 'spling' (employing the $i \rightarrow \text{æ}$ change often found in words with coronal onsets and η in coda position) (Bybee and Moder 1983; Prasada and Pinker 1993; Albright and Hayes 2003). Such competition is not merely an artifact of experimental settings, and in fact semi-productive minority patterns are also often evident in historical change. A number of English verbs have "irregularized" over time; a prominent example is 'dive', which has acquired the "irregular" past tense 'dove' in many varieties of American English, based on a strong $ai \rightarrow ou$ pattern in verbs with voiced coronals in both the onset and coda (drive, rise, ride, strive, stride). However, a parallel change from (older) 'dived' to (innovative) 'diven' is not observed in the past participle. Instead, many American English speakers find that this verb surprisingly has no usable past participle: "I have *diven/*doven/*dived/*dove". Parallel difficulty is observed for the similar verbs 'stride', 'strive', and 'smite'. Such failures are striking, given that speakers generally show such a robust ability to extent multiple patterns to create novel forms.

In this talk, I examine two cases of paradigm gaps in English, in which speakers fail to employ otherwise productive processes for certain words. I contrast two different approaches to how such gaps arise. On the one hand, the productive process might be blocked by irregularly non-existing output forms—that is, speaker simply learn that certain forms irregularly do not exist (Halle 1973; Daland et al. 2007). I argue that this approach not only fails to explain how such gaps arise in the first place, but it also does not appear to offer a workable model of how these gaps are maintained and have spread in the English case. I suggest instead that such gaps are the combined result of the architecture of how morphological relations are encoded and the way that learners evaluate the strength of different morpho(phono)logical processes in different contexts. In particular, I argue that grammar employs only a subset of the logically possible morphological rules: in the case of English, past participles are derived from past tense forms, and not from present tense or infinitive forms. Although this restriction is irrelevant for most verbs (since in the usual case, the past tense and past participle forms are identical), for irregular verbs like 'dove' or 'strode', it requires finding a rule that can relate simple pasts in [ou] with their corresponding past participles. As it turns out, there are rather few relevant verbs in the input to a typical child, and they have conflicting patterns ('driven', 'risen' vs. 'frozen', 'stolen' vs. 'shone'). I argue that in these cases, the available fall below a critical threshold of data needed to make a process semi-productive.