

Strong 'islands of resilience' in the weak flood. Dutch strategies for past tense formation implemented in an agent-based model.

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Since Germanic parted from the Indo-European mother tongue, the past tenses of most Germanic languages have formed the battle ground of the weak and strong inflection systems. This opposition has often been used as a case study of regular-irregular competition in both computational and statistical models of language (e.g. Hare & Elman 1995, Lieberman 2007, Pugliesi et al. 2014, Pijpops et al. 2014). However, weak and strong are not synonymous to regular and irregular (Carroll et al. 2012). In Dutch and English, one may find irregular weak forms, such as *zocht-sought* and *dacht-thought*, while some strong ablaut patterns form 'islands of resilience' (Mailhammer 2007), exhibiting clear regularity, and even incidental productivity and expansion (Salverda 2006: 170-179, Knooihuizen & Strik 2014). Our agent-based model therefore no longer means to model a regular-irregular distinction, but rather a choice between a generally available dental suffix and several vowel-dependent ablaut patterns. Agents will have to employ either strategies to communicate past events to one another, and adapt their own linguistic behavior to that of their fellows. As a starting position, the present Dutch situation is used, with forms and frequencies extracted from the Corpus of Spoken Dutch (Van Eerten 2007). The model itself is built within the Babel2-framework (Loetzsch et al. 2008), with the agents' grammars operationalized in Fluid Construction Grammar (Steels 2011). Amongst the questions we seek to answer are: What mechanisms do we need to implement to obtain realistic results? How are some ablaut patterns better able to resist the weak expansion?

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