The role of asymmetric alignment in linguistic simplification

Human languages differ in their complexity (Wray & Grace, 2007; Sinnemäki, 2009; Lupyan & Dale, 2010; Trudgill, 2011), and those differences correlate with differences in social structure. Languages spoken in small groups, where contact with strangers and speakers of other languages is limited, are structurally more complex, have more irregular forms, less transparent form-meaning mappings, and greater levels of syntagmatic and paradigmatic redundancy; languages spoken in larger groups, with more complex social networks and more contact with outsiders, tend to have simpler, more regular and more transparently compositional grammars.

Adult learners (who form a larger proportion of complex social groups) have difficulty in acquiring morphological complexity, redundancy, and irregularity, and have been identified as drivers of linguistic simplification (e.g. Wray & Grace, 2007; Lupyan & Dale, 2010; Trudgill, 2011). But how do the simplifications these learners make spread to influence the complexity of whole languages? We present two experiments using artificial language learning to explore the consequences of interaction between individuals with linguistic systems which differ in complexity. Specifically, we test the hypothesis that alignment during interaction (the process by which speakers adapt to their interlocutors) is inherently *asymmetric*: speakers of more complex languages adapt to the simpler language use of their interlocutor. Asymmetric alignment provides a mechanism by which the simplifications of a small number of individuals can spread through a population.

In Experiment 1 we trained pairs of participants on miniature languages which featured a (potentially) variable grammatical marker, and then had them use that language to communicate with each other. One participant in each pair was trained on a relatively complex language in which multiple markers were used to fulfil a single grammatical function; their partner was trained on a simpler, categorical system featuring a single marker. Results were consistent with the asymmetric alignment hypothesis: variably-trained participants accommodated to their categorically-trained partners, who did not change their behaviour. Furthermore, these effects outlasted the interaction: variably-trained participants did not fully return to their complex pre-interaction behaviour.

In Experiment 2, we used similar techniques to test asymmetric alignment in morphology. One participant in each pair was trained on a paradigm featuring irregular forms, while their partner was trained only on the simpler regular part of the paradigm. During interaction we found that the participant trained on the more complex language accommodated to their partner, avoiding irregulars and producing over-regularizations instead; a control condition featuring interaction between two participants trained on the full language showed no such simplification. Again, these simplifications persisted: participants who simplified during interaction carried on producing over-regularizations in a post-interaction recall test.

These experiments help us understand how a small proportion of individuals using a simplified version of a language can have a disproportionate effect on the complexity of a population's language: simplifications spread because individuals with more complex language 'accommodate down' during interaction, and remain simpler afterwards. More generally, this work shows how experimental techniques for studying learning and interaction can be used to test hypotheses about the link between language processing and linguistic diversity.

References

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