The phonologically exceptional continent: a large cross-linguistic survey reveals why Australia is, and is not, typologically unusual

Australian languages are known for their very low level of phonological diversity. Yet how and why just one continent should be so homogeneous is not understood. We report on results emerging from the first large scale study of Australian morphophonemics, and show that the "Australian problem" does not extend to all corners of the phonology.

Background Existing phonological surveys of Australian languages have focused on phoneme inventories, static phonotactics and stress patterns. However, to better understand the Australian problem we require more information, preferably both synchronic and diachronic, and thus a promising domain of investigation is morphophonemic alternations: synchronic phenomena which preserve a strong signal of prior changes.

Data The AusPhon-Alternations database is the first large scale survey of segmental morphophonemic alternations in Australian languages. Alternations are coded in a commensurate manner, irrespective of their description in source materials as 'allomorphy' or '(morpho)phonological rules'. In order to survey information from a wide band of time depths, we will not distinguish here between productive and nonproductive alternations, but focus instead on the alternations' content. At time of writing, 70 linguistic varieties and ca. 1600 alternations have been coded for.

Emerging findings

NO 'AUSTRALIAN TYPE' In Australia, segment inventories, phonotactic constraints and stress patterns show only minor variation across the vast majority of languages and language families. In contrast, there is no comparable, widespread sharing of segmental morphophonological alternations. The following patterns do recur across languages, but the rate of incidence is low.

1. STOP LENITION A pattern of sonority-conditioned stop lenition, identified in earlier research, is not uncommon: stops alternate with glides or zero, with stops appearing after occlusives, and glides appearing after continuants.

2. PLACE ASSIMILATION Assimilation in place of articulation is rare, however not as rare as one might expect once phonotactic factors are taken into account. Namely, since phonotactic constraints typically permit only few sonority (or manner) sequence types, and since geminates are generally not permitted, what would have been place assimilation typically results in complete deletion, as for example in /ɲn/ → /nn/ → /n/.

3. C VS V DELETION IN CLUSTERS An asymmetry arises when one examines the deletion of consonants from underlying consonant clusters versus vowels from vowel clusters: consonant clusters show no strong preference for deleting stem versus affixal material, whereas vowel deletion tends to remove vowels stem-finally, and to preserve them affix-initially. This is typologically interesting, in that it contradicts the assumption in some phonological research, that 'faithfulness' to stems universally outranks faithfulness to affixes.

Conclusions/perspective The typological homogeneity of Australian language phonologies does not extend to morphophonology. Nevertheless, our observations suggest new insights into those aspects of phonology which are highly uniform: the lenition of stops to glides is inventory-preserving; and assimilation is rare except when it feeds deletion, which preserves phonotactic patterns. Though these effects are small and infrequent, in the long run they may contribute to the temporal stability of the most widespread phonological patterns.