

The aim of this study was to investigate the relationship between compensatory shortening and coarticulation in German tense and lax vowels in trochees and iambs and to determine whether this relationship was influenced by prosodic accentuation.

In a production experiment, speakers produced near minimal pairs differing in vowel tensivity in monosyllabic and disyllabic words (both trochees and iambs) in accented and deaccented contexts. We found significant effects of polysyllabic shortening, but only in nuclear-accented target words with tense vowels. Furthermore, both stress patterns (trochaic and iambic) showed equal effects of polysyllabic shortening.

In a perception experiment a 12-step /a:/ - /a/ continuum was spliced into accented and deaccented monosyllables and disyllables in both trochaic and iambic conditions. Listeners participated in a 2AFC experiment in which minimal pairs varying only in target vowel duration were presented. Both words in each minimal pair were real German words and listeners were told to identify which of the two words they heard. Listeners' perception of vowel duration was not influenced by prosodic accentuation or stress pattern. Syllabicity influenced the perception of vowel duration in deaccented trochees and accented iambs, but not of any other conditions.

Thus, while the (non-)effect of stress pattern on lengthening/shortening seems to be matched in production and perception, it appears that accentual lengthening and polysyllabic shortening in production is not aligned with listeners' perception of these phenomena. If listeners are not sensitive to the different types of coarticulatory overlap in speech production, this might be a breeding ground for sound change.