

A dynamic analysis of the diphthong-hiatus contrast in naturalistic Spanish and Portuguese
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According to phonological accounts, the vowel sequence /ia/ is always classified as a hiatus (i.e., two full vowels) in Portuguese whereas it can be either a diphthong (i.e., a semi-vowel /j/ followed by a vowel) or a hiatus in Spanish. The actual realization of this vowel sequence, however, can be subject to adaptations due to factors such as stress or an informal speech style. Using large corpora of naturalistic speech, we investigate the acoustic configuration of /ia/ to test 1) whether the two languages differ from each other in accordance with the respective phonological status of /ia/, and 2) which impact the proximity of /ia/ to the stressed syllable has on its acoustics. For almost 40,000 tokens of /ia/, we measured F1, F2, and the duration of the vowel sequence, submitted the signals to FPCA, and ran LMERS on the resulting PC scores. First, we find that Portuguese maintains the hiatus in tonic position, while Spanish shows a preference for diphthongal sequences independently of stress. Secondly, when /ia/ is unstressed, there are significant reduction processes which mainly affect duration and the dynamics of F1 in both languages. The most reduced sequence is post-tonic /ia/ in Portuguese which shows additional reduction in the dynamics of F2 and, thus, a trend towards monophthongization. Beyond demonstrating that both variation and reduction are often more severe in naturalistic than in laboratory speech, these results contribute to our understanding of the diphthong-hiatus contrast in Romance languages.