Abstract

This study investigates the impact of vowel space and pharyngealized consonants on V-to-V coarticulation in three Yemeni Arabic dialects: Abyani Yemeni Arabic (AYA), Hadhrami Yemeni Arabic (HYA) and Ta’izzi Yemeni Arabic (TYA). Speech data were collected from eight speakers for each dialect. The formant data of each dialect were normalized using z-score transformation. The findings of the first experiment reveal that the three dialects exhibit comparable vowel inventory and acoustic vowel space, whereas the F1 and F2 z-scores for each vowel identity, except the F1 z-score for /i:/, are not the same among the three dialects. The findings of the second experiment show that the three dialects of Yemeni Arabic exhibit different degrees of V-to-V coarticulation, though their vowel spaces are comparable. The results of the third experiment reveal that the presence of consonants with secondary articulations does not reduce or block the degree of V-to-V coarticulation in the three dialects. Based on the findings of the second and third experiment, it is observed that AYA exhibits the highest degree of V-to-V coarticulation compared to HYA and TYA. It is also observed that the vowel space and the presence of secondary articulations do not play a role in the degree of V-to-V coarticulation in the three dialects. Additionally, we measured the duration of the short vowels of the three dialects and we found that there is a significant difference in the duration of the short vowels in the three dialects. AYA speakers produced vowels with short duration compared to the speakers of the other two dialects. Hence, we argue that vowel duration is one of the main factors that affects V-to-V coarticulation in the three dialects.