3. Results

3.1 Vowel durations

(a) Word-final vowels (V2) are longer, e.g. word-final phrase lengthening

(b) Vowel durations are not significantly different between Mandarin and English L1 groups: (p>0.05).

3.2 Tonal alignment and syllable boundary

Tonal time lag = Time (end of 1) - Time (end of 2)

End of V1

End of V2

<1+H> production

I. Mandarin group

- Speech rate seems to affect the F0 alignment pattern of H (but not L).
- L target is stable (V1 end).
- H is earlier at a slower speech rate.

II. English group

- Speech rate does not affect F0 alignment.
- L and H targets are stable (L within V1 and H at the beginning of V2).

4. Conclusion

- Mandarin group produce “rising” contour that is proper in listing words. (L*+H)
- However, the production results suggest that each of the two tonal components of a bitonal pitch accent (L*+H) follows the alignment pattern in L1 (Mandarin): L1 prosody is transferred in L2 production.
- Speech rate has a weak effect on the alignment pattern: if occurs, only in the second syllable (that undergoes lengthening at prosodic boundary).

References


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