Intonation patterns of double subjects in Mandarin: Evidence in support of a possessive structure

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Researchers argue whether double subjects in Mandarin (e.g., [*tùzi* 'rabbit'] and [*ěrduo* 'ear'] in the sentence [*Tùzi ěrduo cháng* 'Rabbits have long ears']) are topic-subject sequences (e.g., [topic *Tùzi* 'rabbit'] [subject *ěrduo* 'ear'] [*cháng* 'long'] 'As for rabbits, they have long ears') or possessive subjects without a genitive marker (e.g., [possessive subject *Tùzi ěrduo* 'rabbit's ear'] [*cháng* 'long'] 'Rabbits' ears are long'). This study examined the role that three acoustic cues play in double subjects: F0 reset, final lengthening, and pause frequency, to determine if these cues can be used to identify the syntactic nature of double subjects in Mandarin.

Two male and three female native speakers read Mandarin sentences headed by (i) a double subject, (ii) a topic-subject sequence, or (iii) a possessive subject (e.g., [double subject *Hēi.māo yǎnjing* 'Black.cat eyes'], [topic-subject sequence *Hēi.māo Wǎn.Jīng* 'Black.cat Wan.Jing'], or [possessive subject *Hēi.māo de yǎnjing* 'Black.cat GENITIVE-MARKER eyes']). Acoustic analysis of these productions showed that the topic constituent of double subjects has different prosodic properties than other topics. Compared to topic-subject sequences, double subjects on average have a significantly greater negative F0 reset, shorter final lengthening, and fewer pauses. However, there was no significant difference between double subjects and possessive subjects for final lengthening and frequency of pauses.

A supervised neural network trained to identify the prosodic correlates of topic-subject sequences and possessive subjects classified double subjects as possessive subjects more frequently than topic-subject sequences. Thus, prosodic cues indicate that double subjects should be classified as possessives, rather than topic-subject sequences.

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