

The Acquisition of Relative Clauses by Mandarin heritage bilingual children

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Studies on L1 acquisition in heritage bilingual children have shown that incomplete acquisition, L1 attrition, and protracted acquisition are all possible outcomes that can be observed during the early developmental stages^{1,2,4,5,6,7,8}. In contrast to incomplete acquisition and L1 attrition, which suggest deficient acquisition of the L1^{1,2,5,6,7,8}, protracted acquisition of the L1 means that heritage bilingual children could develop native-like L1 ability eventually, but that the whole acquisition process requires a longer timeframe⁴. Thus far, studies with child heritage-language speakers are still limited^{1,2,4,5,6} compared to those with adult heritage speakers, and few longitudinal studies have been focused on the developmental trajectory of the L1 in early childhood^{1,2}. It is unclear whether the non-target structures used by heritage bilingual children occur because they had incomplete development of the L1, or because they had full knowledge of L1 at some point but then lost that knowledge later on. It is also unclear whether they will retain incomplete knowledge of the L1 over time, or they will acquire the knowledge at a later age than their monolingual peers.

To tease apart the effects of incomplete acquisition, L1 attrition, and protracted L1 acquisition, this paper includes a cross-sectional design (study 1) and a longitudinal design (study 2). The comprehension and production of subject-type and object-type relative clauses (RCs) by twenty-nine Mandarin heritage bilingual children (age range: 6;0-9;8) were examined in these two studies. Moreover, fifteen age-matched Mandarin monolingual children were included as a comparison group. The specific questions we asked were (1) How do Mandarin heritage bilinguals compare to their monolingual peers in comprehension and production of RCs? and (2) What is the developmental trajectory of Mandarin heritage bilinguals' comprehension and production of RCs over time?

In a comprehension task, children were asked to select the target picture based on the auditory stimulus they heard. Both accuracy and response time were measured. In an elicited production task, children were asked to produce one subject-type RC and one object-type RC in each given scenario, five scenarios in total. The mixed-modeling analysis in R³ revealed that for the comprehension of Mandarin RCs, heritage bilinguals were comparable to monolinguals in processing subject-type and object-type RCs, and they all performed at ceiling in both study 1 and study 2. Regarding the production of RCs, although monolinguals outperformed heritage bilinguals for both subject-type RCs ($\beta = 3.8, z = 2.6, p < .01$) and object-type RCs ($\beta = 3.8, z = 2.6, p < .01$) at the first year of testing, heritage bilinguals' production of both types of RCs was convergent with monolinguals' performance at the second year of testing.

Combining the findings of study 1 and study 2, we conclude that the reduced L1 input heritage bilingual children receive in the host country does not necessarily lead to incomplete acquisition or L1 attrition. Our findings suggest that for some complex syntactic structures,

e.g. RCs, heritage bilingual children may require a longer time to accumulate the critical mass of input necessary for acquiring them in their L1.

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