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19-Month-Olds' Sensitivity to Negation/Tense Dependencies

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Recent comprehension studies have shown that infants have early knowledge of adult syntactic relationships long before they are capable of demonstrating this knowledge in productive speech (e.g. Santelmann & Jusczyk, 1998). The current study addresses the relationship in infant grammar between negation and tense in two related contexts - the difference between adverbs and negation in their effect on the placement of tense marking, and the connection between negation and the presence or absence of tense marking.

In English, tense markings are found before a negation, but after an adverb. For instance, compare the following sentences:

- 1) Mary never goes to the store.
- 2) *Mary not goes to the store.
- 3) *Mary does never go to the store.
- 4) Mary does not go to the store.

Harris and Wexler (1996) showed that the productions of children are consistent with this adult pattern as early as 1.5 years old. In Experiment 1, the Headturn Preference Procedure (HPP) was used to determine whether the preference patterns 19-month olds follow this same pattern. Infants were tested on two sets of passages that were produced using synthesized speech (Dectalk). Both sets contained sentences with verbs in 3rd person singular, present tense. In the grammatical set, the verb was preceded with "never" (see sentence 1). In the ungrammatical set, the verb was preceded with "not" (see sentence 2). Passages were played in random succession to either side of a testing booth, with playing time for each trial contingent on the infant's interest as measured by orientation of gaze to a paired light stimulus. The dependent measure was total orientation time to the paired side light. Mean scores across trials were calculated for the grammatical passages and ungrammatical passages for each infant.

Twenty-two out of 28 infants oriented longer to the grammatical passages than the ungrammatical passages. The overall mean scores were 8.5 s for the grammatical passages, and 6.8 s for the ungrammatical passages, with $p = .028$. Overall, these data support the notion that 19-month-olds are sensitive to the differences between negation and negative adverbs.

One striking feature of children's early production is the optional use of infinitival (not tense-marked) forms of verbs

in contexts where a tensed verb is used by adults, often referred to as the Optional Infinitive (OI) stage. So far the evidence for this phenomenon in normal acquisition is only productive in nature (but see Rice et al. (1999) for comprehension evidence of OI in children with SLI and for normal older children). Experiment 2 compared 19-month olds' preference for passages containing sentences like that in (2) with similar sentences lacking the tense marking:

- 2) *Mary not goes to the store.
- 5) ?Mary not go to the store.

Both of these sentences are ungrammatical for adults. However, Wexler's (1994) analysis of OI productions predicts that only sentence 2 is ungrammatical for children in the OI stage, while sentence 5 is treated as grammatical.

Surprisingly, 20 out of 28 infants oriented longer to the tense-marked passages (2) than the unmarked passages (5). The overall mean scores were 7.8 s for the tense-marked passages, and 9.5 s for the unmarked passages, with $p = .027$. This finding is not predicted by current production-based theories of acquisition.

One explanation for the unexpected finding is that infants are not attending to the "not" in this context, although they did detect the not/never distinction in Experiment 1. We are currently exploring this possibility using nonsense words before the main verb.

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