

# Elicited Infinitival Complement Production by Preschool Children



Jamie D. Fisher, M.A. & C. Melanie Schuele, Ph.D.  
Vanderbilt University Department of Hearing and Speech Sciences

## INTRODUCTION

Infinitival complements are among the earliest types of complex syntax produced by young children. Infinitival complements appear as an argument to a complement taking verb, in the direct object position of the sentence. For example, *I want [complement taking verb] to eat [infinitival complement, in direct object position].* Typically in English, the grammatical marker or morpheme to appears in the infinitival complement. Infinitival complements can have an overt subject – *I want Mary to eat* – or a subject co-referential with the sentence subject – *I want to eat*. Infinitival complements with co-referential subject, Noun-Verb- to -Verb (N-V- to -V) forms emerge in children's language around the second birthday, prior to Noun-Verb-Noun-to-Verb (N-V-N- to -V) forms, appearing at about 2½ years of age (Bloom et al. 1984; Limber, 1973). The production of reduced infinitives, for example, *wanna*, *gonna*, precede the production of infinitival complements with to.

### Past Infinitival Complement Research:

- Eisenberg and Cairns (1994)
  - \*Demonstrated productivity of infinitives from three years of age
  - \*More productive with 1 Noun than 2 Noun infinitival complements
  - \*Even at five years, children not fully competent
  - \*Did not produce infinitival complements with all verbs (e.g., *threaten*)
- Washington and Craig (1994)
  - \*Children from low income families
  - \*93% of the children produced 1 Noun infinitival complements
  - \*Only 29% produced 2 Noun infinitival complements

The proposed study will compare infinitival complement production in a lower SES group of preschool children as compared to a higher SES group, in order to further investigate age and SES differences in elicited production data. This study will contribute to an understanding of the developmental changes in preschool and the influence of SES on this aspect of complex syntax development.

**Research Questions:** (1) Does the number of infinitival complements produced by preschoolers vary by age? (2) Does the number of infinitival complements produced by preschoolers vary by SES? (3) Does the percent inclusion of infinitival "TO" vary by age? (4) Does the percent inclusion of infinitival "TO" vary by SES?

## PARTICIPANTS

- 80 preschool children
- Age range: 3;0 - 4;11 (M = 4.0; SD = .51)
- Forty Preschoolers from lower socio-economic status (SES) group age-matched with 40 preschoolers from higher SES group (see Table 1).
- All children were administered the *Peabody Picture Vocabulary Test-III* (PPVT-III); Lower SES: M = 88.57; SD = 13.25 / Higher SES: M = 109.37; SD = 13.31) and the *Preschool Language Scale-4* (PLS-4; Lower SES: M = 98.73; SD=15.48 / Higher SES: M = 116.74; SD = 13.40)

Table 1. Number of children in each age group by SES.

	Age 3;0-3;5	3;6-3;11	4;0-4;5	4;6-4;11	Total
Lower SES Group	5	13	11	11	40
Higher SES Group	5	13	11	11	40
Total	10	26	22	22	80

## METHODS

### About Our Task

This project is part of a larger project examining complex syntax production in both children with typical language and children with language impairment. We are interested in how children learn to express multiple ideas within one sentence. For this project, we focused on data from the infinitive elicited task.

### INFINITIVE ELICITED TASK

Two types of infinitival complements were elicited: (a) Six NP – V – to –VP, (e.g., *Mickey wants to stand up*) with complement taking verbs *want, like, try, get, need, and has*, and (b) Eight NP – V – [NP – to – VP], where the object NP is the subject of the infinitival complement (e.g., *Mickey wants Goofy to swim*). Complement taking verbs included *want, like, try, get, need, tell, force, ask, and beg*. The examiner individually engaged children in the elicited infinitive task (adapted from Eisenberg & Cairns 1994; Eisenberg, 1989, 2003, & 2005). For each infinitival complement target utterance the examiner started a story and concurrently acted out the story by manipulating toys (see Table 3). Each story consisted of several simple sentences; the infinitive form was not modeled by the examiner. At the end of each story the examiner modeled the beginning of the target response by saying the sentence subject and the main verb. The examiner then asked the child to finish the story and restarted the target sentence, saying just the sentence subject with raised intonation as a prompt for the child to finish the story. All responses were written and audio-recorded orthographically on-line.

Table 3. Infinitival Complement Elicitation Protocol for WANT



**Target: Mickey wants to stand up.**  
(Set up: Mickey sitting; Goofy standing, facing him).  
MICKEY & GOOFY ARE PLAYING SCHOOL.  
GOOFY IS THE TEACHER.  
(raise Mickey's hand). MICKEY RAISES HIS HAND.  
Mickey to Goofy: CAN I STAND UP?  
MICKEY WANTS – YOU FINISH THE STORY, MICKEY –

### CODING

Responses were coded as to whether the production included a simple sentence only, an incomplete sentence that did not include an infinitival complement, or a sentence that included an infinitival complement. All infinitival complement utterances were coded with respect to type, whether the target complement taking verb was produced, and whether infinitival "TO" was included.

### DATA ANALYSIS

Means and standard deviations were computed for the dependent variables: number of infinitives, percent inclusion of infinitival to, and number of different complement taking verbs. The data were analyzed with ANOVA to determine main effects and post hoc analyses to compare age groups and age by SES interactions.

## RESULTS

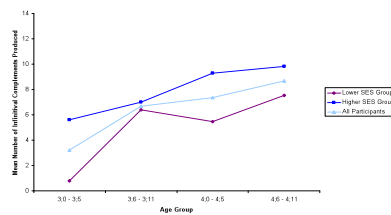
### RESEARCH QUESTION 1: Does the number of infinitival complements produced by preschoolers vary by age?

The results of the ANOVA indicated a main effect of age (F (3, 76) = 6.99; SD = 3.51; F (3, 76) = 6.94, p = .000). A Tukey's HSD post-hoc analysis revealed significant difference between 3;0-3;5 and 4;0-4;5 age groups (p = .005), as well as a significant difference between 3;0-3;5 and 4;6-4;11 age groups (p = .000). In the elicited task, the older groups produced more infinitival complements as compared to the younger groups (see Figure 1).

### RESEARCH QUESTION 2: Does the number of infinitival complements produced by preschoolers vary by SES?

The results of the ANOVA indicated a main effect of SES (F (1, 78) = 11.08, p = .001). The higher SES group produced more infinitival complements as compared to the lower SES group (see Figure 1). There was no age by SES interaction (p = .149).

Figure 1. Mean number of infinitival complements produced by AGE and SES.



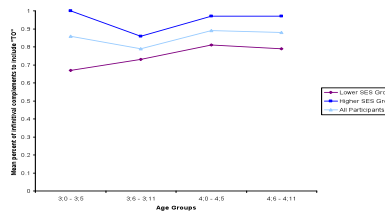
### RESEARCH QUESTION 3: Does the percent inclusion of infinitival "TO" vary by age?

The results of the ANOVA indicated no main effect of age (F (3, 70) = .736, p = .534). Thus, there was no developmental change observed in the inclusion of infinitival "TO" across three- and four-year olds (see Figure 2).

### RESEARCH QUESTION 4: Does the percent inclusion of infinitival "TO" vary by SES?

The results of the ANOVA indicated there was a main effect of SES (F (1, 72) = 10.73, p = .002). The higher SES group include infinitival to more often as compared to the lower SES group (see Figure 2). There was no age by SES interaction (p = .799).

Figure 2. Mean percent of infinitival complements to include "TO" grammatical marker.



## DISCUSSION

The purpose of this research was to compare infinitival complement production in a lower SES group of preschool children as compared to a higher SES group, in order to further investigate age and SES differences in elicited production data. Results described how age and SES influences production of infinitives in preschool children.

When the preschool children were compared by number of infinitival complements and number of different complement taking verbs produced by preschoolers variations were found based upon age. As anticipated, as preschoolers increased with age they were more proficient with there use of infinitival complements and complement taking verbs. However there was no difference found due to age with the percent inclusion of infinitival to. These results are consistent with Eisenberg's (1994) findings.

When lower and higher SES groups were considered as the independent variable significant differences were revealed based on the number of infinitival complements produced, number of different complement taking verbs produced, and the percent inclusion of infinitival to. Higher SES groups performed more proficiently on each dependent variable of the current study. Our results are consistent with Vasilyeva, Waterfall, and Huttenlocher (2008), which found that children from the lower SES families used far more simple sentences in their utterances versus children from higher SES families who used more complex syntax, including infinitival complements.

### Future Research

Explore effects of age and SES on...

- Productivity of infinitival complements across complement taking verbs
- Comparison of 1N vs 2N
- \*Frequency
- \*With specific complement-taking verbs

## REFERENCES

Bloom, L., Tackeff, J. & Lahey, M. (1984). Learning to in complement constructions. *Journal of Child Language*, 11, 391-406.  
Dunn, L., & Dunn, L. (1997). *Peabody Picture Vocabulary Test-Third Edition*. Circle Pines, MN: American Guidance Service.  
Eisenberg, S. (1989). The development of infinitives by three, four, and five year-old children. Unpublished doctoral dissertation, City University of New York, New York.  
Eisenberg, S. (2003). Production of infinitival complement clauses in the conversational speech of 5-year-old children with language impairment. *First Language*, 23, 327-341.  
Eisenberg, S. (2005). When conversation is not enough: Assessing infinitival complements through elicitation. *American Journal of Speech Language Pathology*, 14, 92-106.  
Eisenberg, S., & Cairns, H. (1994). The development of infinitives from three to five. *Journal of Child Language*, 21, 713-734.  
Vasilyeva, M., Waterfall, H., & Huttenlocher, J. (2008). Emergence of syntax: commonalities and differences across children. *Developmental Science*, 11, 1, 64-97.  
Washington, J., & Craig, H. (1994). The complex syntax skills of poor, urban, African American preschoolers at school entry. *Journal of Speech, Language, and Hearing Research*, 25, 181-190.  
Zimmerman, I., Steiner, V., & Pond, R. (2002). *Preschool Language Scale-4*. San Antonio, TX: The Psychological Corporation.

## ACKNOWLEDGMENTS

This study was funded by NIH/NIDCD DC007329. CONTACT AUTHORS: jamie.d.fisher@vanderbilt.edu OR melanie.schuele@vanderbilt.edu