



## When Conversation Is Not Enough: Assessing Infinitival Complements Through Elicitation

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Children with language impairment have been found to show limited usage of infinitival complements, one of the earliest complex sentence types to emerge and a significant form in school-age language. Children's production of infinitival complements in conversation is not sufficient to tell us what they know about this form. This article describes a story completion procedure for eliciting infinitival complements. The procedure includes 2 situational contexts requiring different infinitive sentence forms and a

variety of verbs with which infinitival complements can be produced. The child's response includes both production of an utterance to complete each story and then an acting out of the meaning of that utterance. This enables the examiner to look not only at the forms produced by the child but also at the relationship between form and meaning.

**Key Words:** language assessment, elicited production, complex sentences

It is important for speech-language pathologists to know about the description and development of complex sentences and to relate this to assessment and intervention. The development of sentences with more than one clause is a major achievement between the ages of 2 and 6 years, greatly increasing the child's generative capacity with language and allowing the child to express complex thoughts (Bowerman, 1979; Cairns, Eisenberg, & Hsu, 1992). Developing complex sentences is essential for adequate communication and for academic success. Children with language impairments have been found to have difficulty with complex sentence forms (Fletcher, 1991; Thordardottir & Ellis Weismer, 2001), and this has been linked to deficits in reading comprehension and academic achievement (e.g., Stein, Cairns, & Zurif, 1984). Children with language impairment have been found to show limited usage of infinitival complements (Eisenberg, 2003; Eisenberg & Rescorla, 2004; Menyuk, 1969). It is important to address this limitation because the development of sentences with infinitival complements precedes other complex sentence types (Bloom, Tackeff, & Lahey, 1984; Limber, 1973) and because they are a frequent and required form in school-age language (Weaver, 1996) and written texts (e.g., Perebeynoss, 1997).

Spontaneous language sampling has been a major means of determining goals for language intervention (Lund & Duchan, 1993; McCauley, 2001; Miller, 1981). Relative frequency of production is one type of measure that has been used as evidence that a child has acquired a particular structure. Based on production of a form at some criterion

frequency level, a clinician may conclude that that form does not need to be targeted in therapy. Scarborough (1990) used a criterion of two different productions as evidence that a form had emerged. Lahey (1988) suggested a higher criterion of four different utterances as evidence of productive use.

It is not clear what we can conclude if the child's production of a target form in spontaneous speech does not meet the criterion frequency level. Complex sentences tend to occur less frequently in child language samples than do simple sentences. In a study by Tyack and Gottsleben (1986), only 3% of the utterances (244 out of a total of 7,428) produced by children with a mean length of utterance (MLU) between 3.0 and 5.99 were infinitive sentences requiring the *to* morpheme. In a typical clinical sample of 100 utterances, even children who have acquired this complex sentence type may produce too few instances to meet a productivity criterion such as that proposed by Lahey (1988). We cannot, therefore, assume that the absence or infrequent occurrence of a linguistic form in conversation reflects a lack of knowledge of that form and a consequent need to target that form in therapy.

There is an additional issue with using spontaneous language sampling alone to assess structures such as infinitival complements that can only occur with specific verbs. A conversational language sample may include infinitival complements with a limited number of different main verbs, but we cannot necessarily conclude from this that a child does not know that infinitival complements can be produced with a variety of different verbs. Another issue

**TABLE 1. Age and mean length of utterance (MLU) for production of infinitival complements by children with typically developing language.**

Sentence form	Age (years;months) and MLU
Catenative forms <i>wanna, gonna, gotta, hafta</i> (“I wanna do it”)	Produced by age 2;0 (Bowerman, 1979; Limber, 1973) and by MLU 2.0–2.5 (Miller, 1981)
NVV: Unmarked infinitives with <i>to</i> omitted (“I want do it”)	Produced by age 2;0 (Bowerman, 1979; Limber, 1973) and by MLU 2.5–3.0 (Retherford, 1993); omissions of <i>to</i> up to age 4;0 (Eisenberg, 2003)
NVtoV: Marked infinitives with <i>to</i> present (“I want to go”)	First produced at age 2;0–2;3 (Bloom et al., 1984) and by 90% of children by MLU 4.51–5.0 (Paul, 1981); produced with several main verbs at MLU 3.5 (Bloom et al., 1984) and by most children with several main verbs at age 3;7–3;11 (Eisenberg & Cairns, 1994); <i>to</i> produced in 75% of obligatory contexts by MLU 3.5 (Bloom et al., 1984)
NVNtoV: Marked infinitives with a noun between the main verb and infinitive verb (“I want you to go”)	Produced by age 2;5 (Limber, 1973) and by MLU 3.5 (Bloom et al., 1984); produced by 50% of children by MLU 4.0–4.5 (Paul, 1981); first use either with <i>want</i> or <i>tell</i> (Eisenberg & Cairns, 1994; Limber, 1973); infrequent use in conversation up to age 5;0 (Eisenberg, 1997)

Note. NVV = noun-verb-verb; NVtoV = noun-verb-to-verb; NVNtoV = noun-verb-noun-to-verb.

relates to determining the actual meaning of a child’s infinitive sentences. Eisenberg (1997) described a child who produced the sentence “Bert wants to find Ernie” and acted out her sentence by making a doll other than Bert do the finding. A child’s apparently adult infinitive sentence may, therefore, not have the same meaning for the child that an adult would give to that sentence.

Language sampling can provide valuable information when a child is in the earliest stages of language development. As the child develops more complex sentence structures, language sampling may not provide the opportunities and variety of verbs that are needed for an adequate assessment of some sentence structures and may not reveal the relationship between utterance form and its meaning. This article describes an elicitation protocol for infinitival complements that could be used alone or in conjunction with language sampling. The protocol not only provides opportunities for production of sentences with infinitival complements but has children act out the meaning of the sentences that they produce. The aim of the current article is to present this procedure so that it can be used clinically to assess children’s productions of infinitive sentences and the meanings they encode with these sentences.

## Development of Infinitival Complements by Typically Developing Children

Information about typical development shows us when certain forms are expected. The developmental data for production of infinitival complements in conversation are summarized in Table 1. The later ages reported by Paul (1981) and Retherford (1993) may relate to the smaller language samples in these studies because sample size does affect the likelihood of a child’s producing specific language forms, particularly less frequent ones (Tomasello, 1997).

The earliest infinitival complements occur with a small set of main verbs, primarily *want* and *go* and less often *got* and *have* (Bloom et al., 1984). These early infinitival complements are either unmarked (i.e., without the *to* infinitive marker) such as “I want do it” or in catenative

form such as “I wanna do it.” Children first produce unmarked infinitival complements shortly before 2 years of age along with other object complements (i.e., embedded clauses functioning as the direct object of the verb in the main clause) and after they are already producing single-clause subject-verb-object (SVO) sentences (Bowerman, 1979; Limber, 1973). According to Limber (1973), this is about the time when sentences with four words are being produced. Retherford (1993) suggests a somewhat later acquisition of unmarked object complements at Brown’s Stage 3, when MLU is between 2.5 and 3.0, corresponding to an expected age range of 2;7 (years;months) to 2;10.

### Development of Noun-Verb-to-Verb (NVtoV) Production

The first marked infinitival complements (i.e., infinitival complements that include the *to* infinitive marker) were produced at age 2;0 to 2;3 by the 4 children in Bloom et al. (1984). These NVtoV forms, such as “I want to do it,” involved an unstated subject in the infinitival complement that was coreferential with the subject of the main verb (Bloom et al., 1984; Limber, 1973). Paul (1981), reporting the age at which 50% of children produced this form at least once in conversation, placed NVtoV sentences somewhat later in Early 4 of Brown’s stages, corresponding to an expected MLU range of 3.0 to 3.50 and an expected age of 2;10 to 3;1. In a study by Eisenberg and Cairns (1994), all 9 of their 3-year-old participants, age 3;7 to 3;11, produced NVtoV sentences in conversation. However, Paul (1981) reported that NVtoV sentences were not produced by at least 90% of children until Stage 5+, when children were at least age 3;11 and MLU was between 4.51 and 5.00.

Productivity for the NVtoV sentence form (i.e., production with several main verbs) was shown by all 4 children in Bloom et al. (1984) by the time that MLU was 3.5. This corresponds to about age 3;3 using the reference data of Miller and Chapman (1981). Most of the 3-year-old participants (age 3;7–3;11) in Eisenberg and Cairns (1994) were productive with this form (i.e., produced the NVtoV

sentence form with at least three different main verbs). Across the age range from 3 to 5 years, children averaged between four and five different main verbs in NVtoV sentences in their conversational speech (Eisenberg, 1997). However, the main verbs with which infinitival complements were produced most frequently in conversation by even the 5-year-old children were the same early verbs—*go*, *have*, *want*, and, less frequently, *get*—reported by Bloom et al. (1984) as the earliest infinitive-taking verbs used by 2-year-olds (Eisenberg, 1997). Infinitival complements with other verbs were elicited, however, on an elicitation task (Eisenberg, 1997).

### ***Development of Noun-Verb-Noun-to-Verb (NVNtoV) Production***

Infinitive sentences of the form NVNtoV with an intervening noun phrase between the main and infinitive verbs, such as “I want Daddy to do it,” are a later development (Bloom et al., 1984; Limber, 1973). Limber (1973) reported their first appearance at around age 2;5, but Bloom et al. (1984) reported that these forms were not produced until MLU was 3.5, which corresponds to about age 3;3 using the reference data of Miller and Chapman (1981). Paul (1981), reporting the age at which 50% of children produced this form at least once in conversation, placed these NVNtoV sentences even later in Late 5 of Brown’s stages, corresponding to an expected MLU range of 4.01 to 4.50 and an expected age of 3;7 to 3;10. Even 5-year-old children produced few or none of these later sentence forms in conversation although they did produce more NVNtoV sentence forms on an elicitation task (Eisenberg, 1997).

Limber (1973) reported that the first verb to be produced in NVNtoV sentences was *want*. However, Eisenberg and Cairns (1994) described children who produced NVNtoV sentences with *tell* but not with *want*, as well as children who only produced NVNtoV sentences with *want* on their elicitation task. The first verb learned in NVNtoV sentences may, therefore, vary across children. This verb difference is important because it corresponds to a difference in sentence structure.<sup>1</sup>

Additional evidence that the NVNtoV sentence form was more difficult can be seen in the errors that children

made with this form, producing ungrammatical NVtoV sentences that omitted the second noun after the main verb. Children age 4;0 and younger produced these ungrammatical NVtoV sentences (denoted here by asterisks) with the earlier reported verb *tell* as in the sentence “\*Mickey tells to swim” (Eisenberg & Cairns, 1994). Even 5-year-old children made this error with later appearing verbs and produced ungrammatical NVtoV sentences with verbs such as *force* as in the sentence “\*Mickey forces to swim” (Eisenberg & Cairns, 1994).

In sum, NVNtoV sentences emerge later than NVtoV forms. NVNtoV sentences may not be produced in conversation until after age 3;6 and are infrequently used in conversation even by 5-year-olds. These forms can be elicited, however, at younger ages on a structured probe. Even on the probe, children may not show productivity with several main verbs until after age 4;6 (Eisenberg, 1997). The first main verb with which NVNtoV forms are produced will vary among children.

### ***Production of the Infinitive Morpheme To***

As noted previously, children’s earliest infinitival complements did not include the infinitive morpheme *to*. Children started to produce *to* at about the same time that they started to produce the modals *can*, *will*, and *do* (Aldridge, 1989, cited in O’Grady, 1997). Children produced *to* in NVtoV sentences before producing it in NVNtoV sentences (Bloom et al., 1984). The 4 children in Bloom et al. (1984) produced *to* in at least 75% of obligatory contexts by the time that MLU was 3.5 at about age 3;3 using the reference data of Miller and Chapman (1981). Eisenberg (2003) reported omissions of *to* in conversational speech for children up to age 4;0.

### ***Main Verbs Used With Infinitival Complements***

As indicated previously, Bloom et al. (1984) reported that children’s earliest infinitival complements were with the 4 verbs *want*, *go*, *got*, and *have*. Three of these verbs—*want*, *go*, and *got*—were also categorized as early-developing by Lee (1974) in her Developmental Sentence Score analysis. Children produced both marked infinitival complements or catenatives with these early verbs (Eisenberg, 2003; Lee, 1974), and these verbs continued to be the most frequently used infinitive-taking verbs in conversation even for 5-year-old children (Eisenberg, 1997) and possibly even up to 7 years of age (Menyuk, 1969). Children did, however, produce infinitival complements with other verbs, although these were less frequent. Bloom et al. (1984) reported 11 other main verbs with which infinitival complements were produced. Limber (1973) provided a list of the complement-taking verbs used by 2-year-old children that included 19 infinitive-taking verbs, although he did not indicate whether the verbs were used with infinitival or with other complement types. The 3- to 5-year-old children in Eisenberg (1997) produced infinitival complements in conversation with 18 different main verbs. The list of infinitive-taking verbs reported by each of these authors for children with typical language development is listed in Table 2. The 5-year-old children with language impairment in Eisenberg

<sup>1</sup>Although looking the same, the sentence “Mickey wants Donald to swim” has a very different structure from the sentence “Mickey tells Donald to swim.” In the *want* sentence, the second noun *Donald* is the subject of the infinitival clause. In the *tell* sentence, the second noun *Donald* is the indirect object of the main clause. This can be demonstrated by replacing the pronoun *something* for the direct object in the following *want* and *tell* sentences. For the *tell* sentence, the pronoun can replace the infinitival clause *to leave* as shown in Sentence 1b. However for the *want* sentence, the pronoun cannot replace *to leave*, and so Sentence 2b is ungrammatical (denoted here by asterisk). Instead, as shown in Sentence 2c, the pronoun must replace *Mary to leave*, which indicates that this is all part of a single constituent, the direct object of the main verb. This stated subject within the infinitive clause is called a lexical subject.

1. (a) “John told Mary to leave.”  
(b) “John told Mary something.”
2. (a) “John wanted Mary to leave.”  
(b) “\*John wanted Mary something.”  
(c) “John wanted something.”

**TABLE 2. Verbs used with infinitival complements by children with typical language development.**

Age (years;months)	Verbs used
1;11-2;5	Ask, go (gonna), have (hafta), like, need, say, suppose (supposta), want (Limber, 1973) <sup>a</sup>
1;11-3;2	Ask, forget, go, got, have, know, <sup>b</sup> like, need, show, <sup>b</sup> suppose, teach, <sup>b</sup> tell, try, use, want (Bloom et al., 1984)
2;5-3;0	Decide, forget, help, hope, know, <sup>b</sup> pretend, remember, say, show, <sup>b</sup> tell, wish (Limber, 1973) <sup>a</sup>
3;7-5;4	Allow, forget, got, go, have, help, know, <sup>b</sup> learn, <sup>b</sup> like, love, mean, need, show, <sup>b</sup> suppose, tell, try, use, want (Eisenberg, 2003)

<sup>a</sup>Limber did not report whether these verbs were produced with infinitival complements or were produced with other complement types.  
<sup>b</sup>Verbs that occurred with *wh*- infinitives, such as in "I know what to do."

(2003) produced infinitival complements with 10 main verbs: *forget, get, go, have, know, like, need, suppose, want, and use.*

There are, thus, a variety of verbs with which children have been reported to produce infinitival complements. The 3- to 5-year-old children in Eisenberg (1997) averaged 4 to 5 different main verbs. None of the verbs other than *want, go, got, and have* were used by more than 7, or 28%, of the participants, and many were used by only 1 child. On an elicitation task that included 11 different infinitive-taking verbs, children produced infinitival complements with an average of 8 to 9 different verbs, with a range from 5 to 11 (Eisenberg, 1997). The most frequently produced main verbs with infinitival complements on the elicitation task, produced by over 90% of the children, were *want, like, try, and tell.* Other main verbs used by at least 75% of the children were *force, ask, and beg* (Eisenberg, 1989).

**The Meaning of Children’s Infinitival Complements**

The meanings demonstrated by children for NVtoV and NVNtoV sentences are shown in Table 3. (Meanings that would not be allowed by adults are denoted by a superscript.)

*The meaning of NVtoV sentences.* For most NVtoV sentences, the unstated subject of the infinitive verb is understood by adults to be the subject of the main verb. This is referred to as subject-controlled. For example, in the sentence "Mickey tries to swim," Mickey would be the one to do the swimming. There are exceptions to this general pattern in which the agent of the infinitive verb is someone other than the main clause subject that is referred to as uncontrolled. For example, in the sentence "Mickey says to swim," an adult would pick someone other than Mickey as

the one doing the swimming. Children age 3;7 to 5;4 produced NVtoV sentences with the same verb for both a subject-controlled meaning and an uncontrolled meaning on an elicitation task (Eisenberg, 1989). This was demonstrated even by 5-year-olds, although the number of verbs and the specific verbs actually produced with both meanings varied for each child (Eisenberg, 1989). Thus, children initially seem to treat NVtoV sentences as ambiguous (i.e., as allowing two possible meanings).

*The meaning of NVNtoV sentences.* For most NVNtoV sentences, the unstated subject of the infinitive verb is understood by adults to be the object of the main verb. This is referred to as object-controlled. For example, in the sentence "Mickey tells Bert to swim," Bert would be the one to do the swimming. There are exceptions to this general pattern in which the agent of the infinitive verb is the main clause subject or subject-controlled. For example, in the sentence "Mickey promises Bert to swim," an adult would pick Mickey and not Bert as the one doing the swimming. There are also verbs such as *ask* that allow both subject- and object-controlled meanings. For example, in the sentence "Mickey asks Bert to swim," an adult might pick either Mickey or Bert to do the swimming.

Most of the children in Eisenberg (1989) produced the NVNtoV sentences only for an object-controlled meaning, even for verbs such as *promise.* This interpretation pattern for *promise* sentences was first reported by Chomsky (1969) in children as old as 9 years of age. Thus, most children seem to treat NVNtoV sentences as unambiguous (i.e., as allowing only one possible meaning) and as following the general pattern of object control.

**TABLE 3. Children’s understanding of infinitive sentences.**

Type of infinitival complement	Meanings		
	Subject-controlled	Object-controlled	Uncontrolled
NVtoV infinitives	"Mickey tries to swim" "Mickey says to swim" <sup>a</sup>	—	"Mickey says to swim" "Mickey wants to swim" <sup>a</sup>
Who does the infinitive verb?	Mickey	—	Whoever is with Mickey
NVNtoV infinitives	"Mickey promises Bert to swim" "Mickey tells Bert to swim" <sup>a</sup>	"Mickey tells Bert to swim" "Mickey promises Bert to swim" <sup>a</sup>	—
Who does the infinitive verb?	Mickey	Bert	—

Note. Dashes indicate that the option does not apply.

<sup>a</sup>Incorrect interpretation (an interpretation that is not allowed by adults).

**TABLE 4. Infinitive type and meaning for each of the verbs on the elicitation protocol.**

Verbs	NVtoV (e.g., "Mickey wants to swim")		NVNtoV (e.g., "Mickey tells Ernie to swim")	
	Grammatical	Meaning	Grammatical	Meaning
want	Yes	Main verb subject	Yes	Infinitive verb subject
like				
tell	No	—	Yes	Main verb object
force				
try	Yes	Main verb subject	No	—
remember				
ask	Yes	Main verb subject	Yes	Main verb subject or object
beg				
promise	Yes	Main verb subject	Yes	Main verb subject
threaten				
say	Yes	External referent	Yes <sup>a</sup>	Main verb object
shout				

*Note.* Ungrammatical infinitives are not included on the protocol. Dashes indicate that the option does not apply.

<sup>a</sup>An NVNtoV sentence would be grammatical with *say* and *shout* if the object noun is marked with *to* (e.g., "Mickey says *to Donald* to eat the hotdog").

### Description of the Elicitation Protocol

The elicitation protocol for infinitival complements was used first with typically developing children ranging in age from 3;6 to 5;6 (Eisenberg, 1989; Eisenberg & Cairns, 1994). The task was then piloted with 4- and 5-year-old children with language impairments (Eisenberg & Vegh-Soti, 2000), and changes were made to make the task easier for these children (Eisenberg, 2001).

To provide the contexts for eliciting the target sentences, stories have been developed. Each story consists of several simple sentences so that sentences with infinitival complements are not modeled by the examiner. Presentation of the story involves the examiner's telling the story while simultaneously demonstrating the actions in the story with toy figures. At the end of each story, the examiner starts the target sentence by stating the sentence subject and main verb. The examiner then asks the child to complete the story and restarts the target sentence, producing just the sentence subject with rising intonation, mandating production of the main verb. Following the child's production, the examiner directs the child to act out the utterance by saying "Now show me" or "Now make it happen." Having the child act out the utterance provides a comparison between the child's production and the child's intended meaning for that utterance. For the sentence "Ernie wants to stand up," a sufficient acting out would be to make Ernie stand up. Some children also demonstrate the main clause, for instance by making Ernie say, "Can I stand up?"

### Materials

The dolls used to demonstrate the stories have movable arms and legs. This allows for a wider range of complement verbs. In the original task with typically developing participants, Eisenberg (1989) used Ernie, Bert, and Mickey Mouse as the characters. Two children were eliminated from

the study because they had confused the Ernie and Bert characters when they acted out their sentences. Eisenberg and Vegh-Soti (2000) changed the characters to Mickey Mouse, Donald Duck, and Bugs Bunny. These characters were chosen for their familiarity to young children as judged by parents of 3- and 4-year-old children and as confirmed by administering the task. Additional toys needed for each of the items are indicated on the protocol in Appendixes A and B.

### Verbs

The protocol includes a total of 12 different main verbs. Seven of the main verbs—*want*, *like*, *tell*, *try*, *remember*, *ask*, and *say*—were selected from lists of early complement-taking verbs reported in Bloom et al. (1984) and Limber (1973). The remaining 5 main verbs—*force*, *beg*, *promise*, *shout*, and *threaten*—do not appear on these lists and, in fact, were found to be less familiar to young children (Eisenberg, 1997). As shown in Table 4, 10 of the verbs are targeted in NVtoV sentences, and 8 of the verbs are targeted in NVNtoV sentences.

All of the complement verbs, the verbs targeted to appear in the infinitival complement, were selected from lists of early verbs produced in single-clause utterances by 1- and 2-year-old children in Bloom (1970) and Bowerman (1973). These included intransitive verbs—*climb*, *jump in*, *sleep*, *stand up*, *swim*, and *swing*—and transitive verbs—*clean up*, *eat*, *find*, *hug*, *pick up*, and *throw*.

### Story Contexts

Story contexts were developed for each of two possible meanings. In one meaning, the subject of the main verb is also intended to be the agent of the infinitive verb. This context will subsequently be referred to as the same-actor context. For the second meaning type, the infinitive verb

**TABLE 5. Same-actor and different-actor story contexts.**

	Same-actor story (NVtoN)	Different-actor story (NVNtoV)
Storytelling and demonstration	The examiner has Ernie and Mickey sitting together. Bert is standing, facing them. Say: "Ernie, Mickey and Bert are playing school. Bert is the teacher." The Examiner raises Ernie's hand. Say: "Ernie raises his hand." The Examiner makes Ernie talk to Bert. Say: "Can I stand up?" Say: "Ernie wants..." Say: "You finish the story" (requesting target production). Say: "Ernie...?" Say: "Now show me" (requesting acting out).	The examiner places Ernie and Bert standing in a pool, and Mickey is floating in the pool. Say: "Mickey is swimming." Examiner makes Mickey stand up and talk to Ernie. Say: "C'mon, Ernie! Swim! Ernie should swim. Mickey will like that." Say: "Mickey likes..." Say: "You finish the story" (requesting target production). Say: "Mickey...?" Say: "Now show me" (requesting acting out).
Target sentence	"Ernie wants to stand up."	"Mickey likes Ernie to swim."
Target meaning (acting out)	Child makes Ernie stand up.	Child makes Ernie swim.

agent is intended to be someone other than the sentence subject. This context will be referred to as the different-actor context. Examples of each can be found in Table 5. The same-actor items target simple NVtoV sentences. However, on the same-actor items with *ask*, *beg*, *promise*, and *threaten*, both NVtoV and NVNtoV sentences with a subject-controlled interpretation would be appropriate responses. The different-actor items target NVNtoV sentences, except for the items with *say* and *shout*. The different-actor items for these two verbs target NVtoV infinitives with an external referent.

### Administering the Elicitation Protocol

The protocol has been used with children age 3;6 and older. Any child at this age or older who can do the story completion task on the simple SVO sentence training items could be given the protocol. The protocol would be useful for children with language impairment who are producing SVO simple sentences and four-word utterances (based on Limber, 1973). Children who have not yet achieved these structures would not be expected to be producing infinitival complements, although they may be producing unmarked object complements.

The child's response includes two parts: production of the utterance and manipulating the characters to act out that utterance. The child's production is required to begin either with both the modeled subject and verb or with just the modeled verb. So, for example, for Item 1 in Table 5, the child could produce an utterance that starts either with *Ernie wants* or with *wants*. For the acting out response, the child has to show only the action associated with the targeted complement verb. For example, for the same item, which targeted Ernie as wanting something and Ernie also as doing the standing, the child has only to show the standing action. Responses that do not include these characteristics are administered rather than being scored as incorrect.

It is recommended that children be asked to act out all utterances, even those that are not sentences with infinitival complements. Having the child act out every item maintains a consistent response, so that the child does not become confused about what she or he is expected to do. The child's

acting out serves as a check that the story was understood. When a child produces an utterance with only the main verb (e.g., "Mickey wants Ernie") and acts out a noncoded action (e.g., making Ernie swim), the acting out response provides support that the child is lacking the infinitival complement structure with which to express the intended meaning.

The elicitation protocol could be given to supplement a conversational language sample or could be given on its own. The entire protocol need not be administered to all children. Development of infinitival complements has been divided into levels, with items on the protocol for each level. The levels administered to each child would be based on what the child has or has not produced in conversation or on earlier levels of the protocol. The following is a suggestion for stepwise administration of protocol items with sample cases to illustrate "passing" and "not passing" at each level.

### Training Items

The acting out response is introduced first for a story that elicits a simple SVO sentence. The story completion response is then added for another story involving a simple SVO sentence. Additional stories are used as training items for both completion and acting out responses, first with simple SVO sentences and then with small clause complements that look like infinitive sentences without the infinitive marker *to*, such as "Bert watches Ernie stand on his head."

### Level 1

Level 1 would be given to children who produce no infinitival complements in conversation. Clinicians who want to assess infinitival complements without first obtaining a language sample would also start at this level. The aim of this level is to check for emergence of NVtoV sentences, either marked or unmarked, with one or two verbs as shown in Table 1. This would be accomplished by giving the same-actor items with the verbs *want*, *like*, and *try*. Only these verbs would be included because these have been reported to be early-appearing with infinitival complements (Bloom et al., 1984; Limber, 1973) and to be the most frequently used main verbs with infinitival complements on the protocol (Eisenberg, 2004). Only the same-actor items would be

included because children's earliest infinitival complements are limited to NVtoV sentences in which the main clause subject and unstated infinitive verb subject are the same (Bloom et al., 1984; Limber, 1973). A child would pass Level 1 if he or she produced either a marked or unmarked infinitival complement with two different verbs as in Example 1 in Appendix C.

### **Level 2a**

Level 2a would be given to children who had passed Level 1 and/or who had produced NVtoV sentences, marked or unmarked, with at least two early verbs in conversation. There are two aims at this level, one being to check for production of the NVtoV form with additional verbs and the other to check for usage of the morpheme *to*. These aims would be accomplished by giving the same-actor items with the less frequent verbs (based on Eisenberg, 1997) *remember*, *ask*, *beg*, *promise*, and *threaten* (in addition to the items with *want*, *like*, and *try* from Level 1, if these had not already been given). To pass Level 2a, a child must produce a marked NVtoV sentence with four of the eight main verbs from Level 1 and Level 2 as in Example 2 in Appendix C. With *ask* and *beg*, children would be given credit if they produced either an NVtoV sentence ("Donald asks to swim") or an NVNtoV sentence ("Donald asks Bugs to swim") that was subject-controlled (making Donald do the swimming).

### **Level 2b**

The two items in Level 2b would be given to children who had produced NVtoV sentences in conversation or on Level 1 of the protocol but had not produced any NVNtoV sentences in conversation. Level 2b could be administered together with Level 2a to any child who had passed Level 1. Alternatively, the SLP could choose to focus first only on NVtoV sentences and wait to administer Level 2b until a child had also passed Level 2a. This level includes different-actor items with *want* and *tell*. Recall that *want* is a lexical subject verb, with the second noun being the lexical subject of the infinitive verb, whereas *tell* is a ditransitive verb, with the second noun being the indirect object of the main verb. The aim of Level 2b is to check for emergence of NVNtoV sentences with one of these verbs, because children differ in whether their earliest NVNtoV sentences are with a ditransitive verb or a lexical subject verb (Eisenberg & Cairns, 1994). Children pass Level 2b by producing a marked NVNtoV sentence with one of the verbs as in Example 3 in Appendix C.

### **Level 3**

Level 3 would be given to children who had produced an NVNtoV sentence with one verb in conversation or who had passed Level 2b. The aim is to check for production of NVNtoV sentences with both ditransitive and lexical subject verbs. The different-actor items with the verbs *like*, *ask*, *beg*, and *force*, as well as with *want* and *tell* from Level 2b if not already given, are administered. To pass this level, children must produce marked infinitival complements with two of each verb type from Level 2b and/or Level 3, as in Example 4 in Appendix C.

### **Level 4**

Level 4 is used to check on the meaning of apparently adult infinitive sentences with main verbs that do not follow the usual meaning pattern. Recall that the verbs *say* and *shout* are exceptions to the usual subject-controlled meaning for NVtoV sentences. Administering both the same-actor and different-actor items with these two verbs will show whether children produce non-adult subject-controlled NVtoV sentences with these verbs or whether they have learned to produce NVtoV sentences only with external reference for these verbs.

The verbs *promise* and *threaten* are exceptions to the usual object-controlled meaning for NVNtoV sentences. Administering both the same-actor and different-actor items with these two verbs will show whether children produce nonadult object-controlled NVNtoV sentences with these verbs or whether they have learned to produce NVNtoV sentences that are subject-controlled for these verbs. Note that same-actor items with *promise* and *threaten* were already included at Level 2a. At that level, both NVtoV and NVNtoV sentences would be acceptable responses, but most children produce the NVtoV sentences. To test for production of subject-controlled NVNtoV sentences with *promise* and *threaten*, the elicitation prompt for the same-actor items is different at Level 4 so that the model includes the object noun as in Example 5 in Appendix C.

## **Interpreting the Elicitation Protocol**

Passing a level does not require a child to produce an infinitival complement on all of the items at that level. The pass criterion for each level is provided with the protocol in Appendixes A and B. Also listed are suggested therapy targets for children who fail each level.

Nonproduction of an infinitival complement with a specific verb does not always mean that a child lacks knowledge that that verb can be produced with an infinitival complement. Some children do not produce infinitival complements with some verbs because they have a preference for a different complex sentence form with that verb (Eisenberg, 1989). Example 6 in Appendix C shows a child, Laura, who produced an NVtoV sentence with four different verbs, thus passing Level 2a. It is not possible to make any conclusion about her knowledge of infinitival complements with *promise* and *ask* because she produced a different complex sentence with these verbs. In contrast, it seems likely that she has not learned that *threaten* can take an infinitival complement, because that verb was produced in a single-clause sentence and she demonstrated the action that would have been coded by a second clause.

The issue of alternative complement types is a problem only for children who have more developed syntactic abilities. Tyack and Gottsleben (1986) found that infinitive sentences accounted for a lower proportion of complex sentences at higher MLU levels. For these children, production of infinitival complements with verbs that take other complement types could be checked by administering items again but changing the elicitation prompt so that it includes the infinitive marker *to*. An example of this change for the same-actor context, Item 1 in Table 5, would be for

the examiner to say, “Mickey wants to... You finish the story. Mickey...?” An example of this change for the different-actor context, Item 2 in Table 5, would be for the examiner to say, “Mickey likes Ernie to... You finish the story. Mickey...?” I would only make this change when a child had produced an alternative complement type with a verb (e.g., “Mickey promises he will clean up”) and, for ditransitive verbs, only if the child had produced the indirect object (e.g., “Mickey tells Bugs he wants the hotdog”). For other children, modeling the infinitive marker and/or the indirect object might result in overestimating children’s knowledge of infinitival complements.

## Concluding Remarks

The protocol described in this article has been shown to be successful for assessing children’s ability to produce infinitival complements and for determining the actual meanings of the infinitive sentences that they do produce. It would be appropriate for children who are already producing four-word utterances and SVO forms because these developments precede the emergence of infinitival complements in typical development. The protocol has been set up in levels based on the results of previous studies of the development of infinitival complements. However, further investigation is needed to validate these levels, the pass-fail criterion, and the suggested intervention goals for failing a level.

The protocol described in this article targets infinitival complements only with 12 main verbs. There are, of course, other verbs that can take infinitival complements (see Table 2), and we do not have data to show that children who are productive with infinitival complements on this protocol will have no difficulty acquiring infinitival complements with other nontested verbs. In addition, the protocol does not include other types of infinitive sentences. These include *wh*- infinitives such as “Mickey knows how to swim,” infinitives in copular sentences with adjectives such as “Mickey is afraid to swim,” and noncomplementing infinitives, which are infinitives that indicate why rather than what, such as “Mickey stopped to swim.” We do not currently have data on when these other infinitive sentence types should be assessed or targeted in therapy.

One limitation of the protocol’s use for assessment is that it has only been used with children who speak standard English and who are from a mainstream culture. Because the *to* infinitive marker is optional in African American English (AAE; Washington & Craig, 1994), it would not be appropriate to assess children who are using an AAE dialect with this protocol. Further investigation of the protocol levels and criteria would be needed to determine the protocol’s utility for children who use dialects other than standard English and who are from cultures other than the mainstream.

To conclude, an elicitation protocol for infinitival complements has been described. This protocol can be used to supplement a language sample or can be used alone. Further investigation is needed to validate the proposed levels of the protocol and the pass-fail criterion, to extend

the protocol to include other types of infinitive sentences, and to determine its applicability to nonmainstream dialects.

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## Appendix A

### Training Items

#### Step 1. Simple sentence training items

Pass: Child uses the modeled verb and acts out his utterance on the last two items

"I'll start a story about Bugs, Mickey, and Donald and you finish the story. Let's try one."

Materials and setup	Action/dialogue	Production	Acting out
Materials: Mickey, Donald, toy, blanket  Setup: put toy under blanket; Donald standing nearby	Make Mickey look for the toy: "Mickey is looking for his toy. He can't find it." Make Donald say to Mickey: "I'll find it, Mickey. Donald finds... You finish the story. Donald...?" "Good. You finished the story." (Repeat child's utterance.) "Can you make Donald do that?"	Target: (Donald) finds the toy  Child's sentence:	Target: Making Donald look for the toy  Child's acting out:
Materials: Mickey, Bugs, table, hotdog, hamburger  Setup: hotdog and hamburger on table; Bugs and Mickey sitting at a table	"It's lunchtime." Make Bugs say to Mickey: "Mickey, do you want the hotdog or the hamburger? Mickey eats... You finish the story. Mickey...?" "Good. You finished the story. Make Mickey do that."	Target: (Mickey) eats the hotdog/hamburger  Child's sentence:	Target: Making Mickey eat the hotdog or hamburger  Child's acting out:
Materials: Bugs, Donald, ball  Setup: Bugs standing with a ball; Donald standing away from Bugs	"Bugs had a ball." Make Bugs say to Donald: "Donald, let's play. Bugs throws... You finish the story. Bugs...?" "Now make him do it."	Target: (Bugs) throws the ball  Child's sentence:	Target: Making Bugs throw the ball  Child's acting out:

*Note.* Words in parentheses are optional.

#### Step 2. Complex sentence training items

Pass: Child uses the modeled verb and correctly acts out the utterance on two items (stop training after the child passes)

Materials and setup	Action/dialogue	Production	Acting out
Materials: Donald, Bugs, swing  Setup: Bugs in the swing	"Bugs is swinging." Make Donald walk over. Make Bugs say to Donald: "Watch me, Donald! I can swing really high. Donald watches... You finish the story. Donald...?" "Now show me."	Target: (Donald) watches Bugs swing  Child's sentence:	Target: Making Bugs swing  Child's acting out:
Materials: Bugs, Mickey, ball  Setup: Donald holding the ball	"Bugs has a ball." Make Mickey come up behind bugs. Make Mickey say to himself (quietly): "I will take the ball. Bugs won't see me." Make Mickey touch the ball, then stand Mickey up. Make Bugs look down at the ball. "Bugs sees... You finish the story. Bugs...?" "Now show me."	Target: (Bugs) sees Mickey take the ball  Child's sentence:	Target: Making Mickey take the ball  Child's acting out:
Materials: Donald, Mickey  Setup: Donald on his head	"Donald stands on his head." Stand Donald on his feet and move Mickey closer to Donald. Make Donald say to Mickey: "Watch me, Mickey! I can stand on my head. Mickey watches... You finish the story. Mickey...?" "Now show me."	Target: (Mickey) watches Donald stand on his head  Child's sentence:	Target: Making Donald stand on his head  Child's acting out:
Materials: Bugs, Donald, monkey bars  Setup: Donald holding the ball	"Donald is on top of the monkey bars." Move Bugs near Donald; make Donald stand on one foot near the edge. Make Bugs say to Donald: "Watch out Donald! You might fall down. Bugs sees... You finish the story. Bugs...?" "Now show me."	Target: (Bugs) sees Donald fall  Child's sentence:	Target: Making Donald fall  Child's acting out:

*Note.* Words in parentheses are optional.

**Appendix B** (p. 1 of 4)

Test Items

Level 1. Production of marked or unmarked NVtoV infinitives in same-actor contexts with early verbs  
 Pass: Production of an unmarked (NVV) or marked (NVtoV) sentence with two different verbs with the target acting out  
 If fail: Target NVtoV infinitives with early verbs  
 Suggested verbs: *go(ing), got, have, like, try, want*

Verb	Materials and setup	Action/dialogue	Production	Acting out
want	Materials: Donald, Bugs	“Donald and Bugs are playing school. Bugs is the teacher.” Raise Donald’s hand. Make Donald say to Bugs: “Can I stand up? Donald wants... You finish the story. Donald...?”	Target: (Donald) wants (to) stand up	Target: Making Donald stand up
	Setup: Donald sitting; Bugs standing, facing him	“Now show me.”	Child’s sentence:	Child’s acting out:
like	Materials: Mickey, Donald, swing	“Mickey and Donald are at the playground.” Move Mickey closer to the swing. “Mickey sees the swing.” Make Mickey say to Donald: “I will swing. That’s my favorite game. Mickey likes... You finish the story. Mickey...?”	Target: (Mickey) likes (to) swing	Target: Making Mickey swing
	Setup: Mickey and Donald standing away from the swing	“Now show me.”	Child’s sentence:	Child’s acting out:
try	Materials: Bugs, Mickey, ladder	“Bugs and Mickey are at the playground. Move Bugs closer to the ladder. Make Bugs say to Mickey: “I will climb this ladder. Bugs tries... You finish the story. Bugs...?”	Target: (Bugs) tries (to) climb the ladder	Target: Making Bugs climb
	Setup: Bugs and Mickey standing away from the ladder	“Now show me.”	Child’s sentence:	Child’s acting out:

*Note.* Words in parentheses are optional; children must produce the modeled main verb but may substitute a different infinitive verb.

Level 2a. Production of marked NVtoV infinitives in same-actor contexts with less frequent verbs  
 Pass: Production of a marked NVtoV sentence with four different verbs (from Level 1 and/or 2a items combined) with the target acting out  
 If fail: Target NVtoV infinitives with other verbs  
 Suggested verbs: *ask, beg, decide, forget, help, hope, love, mean, need, pretend, promise, remember, suppose(d), threaten, use(d), wish*

Verb	Materials and setup	Action/dialogue	Production	Acting out
remember	Materials: Donald, Bugs, toy	Make Donald and Bugs walk away from the toy “Donald and Bugs are going home.” Make Donald say to Bugs: “My toy. I didn’t pick it up. Donald remembers... You finish the story. Donald...?”	Target: (Donald) remembers to pick up his toy	Target: Making Donald pick up the toy
	Setup: Donald and Bugs standing near toy	“Now show me.”	Child’s sentence:	Child’s acting out:
ask	Materials: Donald, Mickey, pool	“This is Mickey’s pool.” Make Donald say to Mickey: “Can I swim in your pool? Donald asks... You finish the story. Donald...?”	Target: (Donald) asks (Mickey) to swim	Target: Putting Donald in the pool
	Setup: Donald standing next to pool; Mickey facing Donald	“Now show me.”	Child’s sentence:	Child’s acting out:

**Appendix B** (p. 2 of 4)

Verb	Materials and setup	Action/dialogue	Production	Acting out
beg	Materials: Mickey, Bugs, bed	“This is Bugs’s bed. Mickey is tired.” Make Mickey say to Bugs: “I’m tired. Please can I sleep in your bed? Mickey begs... You finish the story. Mickey...?”	Target: (Mickey) begs to sleep	Target: Putting Mickey in the bed
	Setup: Mickey standing near the bed; Bugs facing Mickey	“Now show me.”	Child’s sentence:	Child’s acting out:
promise	Materials: Mickey, Donald, 3 toys, box	“Mickey was playing. Mickey made a big mess.” Make Mickey say to Donald: “I’ll clean it up. Mickey promises... You finish the story. Mickey...?”	Target: (Mickey) promises to clean up	Target: Making Mickey pick up the toys
	Setup: Mickey standing next to toys and box; Donald facing Mickey	“Now show me.”	Child’s sentence:	Child’s acting out:
threaten	Materials: Bugs, Mickey, ball	“Bugs has the ball. Mickey wants the ball.” Make Bugs say to Mickey (menacing voice): “You want the ball. I’ll throw it at you. Bugs threatens... You finish the story. Bugs...?”	Target: (Bugs) threatens to throw the ball	Target: Making Bugs throw the ball
	Setup: Bugs and Mickey facing each other; Bugs has the ball	“Now show me.”	Child’s sentence:	Child’s acting out:

*Note.* Words in parentheses are optional.

Level 2b. Production of NVNtoV infinitives in different-actor contexts with either *want* or *tell*

Pass: Production of a marked NVNtoV sentence with one verb with the target acting out

If fail: Target NVNtoV infinitives with *want* and *tell*

Verb	Materials and setup	Action/dialogue	Production	Acting out
want (lexical subject verb)	Materials: Bugs, Mickey, pool	“Mickey is swimming in the pool.” Make Mickey get out of pool. Make Mickey say to Bugs: “C’mon Bugs! You should swim! Mickey wants... You finish the story. Mickey...?”	Target: (Mickey) wants Bugs to swim	Target: Putting Bugs in the pool
	Setup: Bugs standing next to pool; Mickey swimming in pool	“Now show me.”	Child’s sentence:	Child’s acting out:
tell (ditransitive verb)	Materials: Mickey, Donald, toy, blanket	Make Donald look for the toy and then stand by Mickey “Donald can’t find his toy.” Make Donald say to Mickey: “I can’t find my toy, Mickey. You find it for me. Donald tells... You finish the story. Donald...?”	Target: (Donald) tells Mickey to find the toy	Target: Making Mickey look for the toy
	Setup: Mickey standing; toy under the blanket	“Now show me.”	Child’s sentence:	Child’s acting out:

*Note.* Words in parentheses are optional; children must produce the modeled main verb but may substitute a different infinitive verb.

**Appendix B** (p. 3 of 4)

Level 3. Production of NVNtoV infinitives in different-actor contexts with both ditransitive and lexical subject verbs

Pass: Production of a marked NVNtoV sentence with two different lexical subject verbs (both *want* and *like*) and two different ditransitive verbs (*tell*, *ask*, *beg*, or *force*) and (from Level 2b and/or three items combined) with the target acting out

If fail: Target NVNtoV infinitives with other verbs

Suggested lexical subject verbs: *allow*, *like*, *need*, *wish*

Suggested ditransitive verbs: *ask*, *beg*, *force*, *help*

Verb	Materials and setup	Action/dialogue	Production	Acting out
like (lexical subject verb)	Materials: Bugs, Donald, ball	“Bugs has a ball.” Make Bugs throw the ball. “Bugs throws the ball to Donald.” Make Donald bring the ball to Bugs. Make Donald say to Bugs: “That was fun! Throw the ball to me again, Bugs. Donald likes... You finish the story. Donald...?”	Target: (Donald) likes Bugs to throw the ball	Target: Making Bugs throw the ball
	Setup: Bugs with the ball; Mickey at a distance from Bugs	“Now show me.”	Child’s sentence:	Child’s acting out:
ask (ditransitive verb)	Materials: Mickey, Bugs	Make Bugs sit on Mickey’s foot. “Bugs sat on Mickey’s foot. Mickey’s foot hurts.” Make Mickey say to Bugs: “Will you stand up, Bugs? Mickey asks... You finish the story. Mickey...?”	Target: (Mickey) asks Bugs to stand up	Target: Making Bugs stand up
	Setup: Mickey sitting down; Bugs standing	“Now show me.”	Child’s sentence:	Child’s acting out:
beg (ditransitive verb)	Materials: Bugs, Donald, box	“The box is heavy. Bugs can’t pick it up.” Make Bugs say to Donald: “Please pick up the box for me. Bugs begs... You finish the story. Bugs...?”	Target: (Bugs) begs Donald to pick up the box	Target: Making Donald pick up the box
	Setup: Bugs standing next to a large object; Donald standing nearby	“Now show me.”	Child’s sentence:	Child’s acting out:
force (ditransitive verb)	Materials: Mickey, Donald, ladder	“Mickey and Donald are at the playground.” Make Mickey push Donald closer to the ladder. Make Mickey say to Donald: “Climb the ladder, Donald! Mickey forces... You finish the story. Mickey...?”	Target: (Mickey) forces Donald to climb the ladder	Target: Making Donald go up the ladder
	Setup: Mickey and Donald standing near to ladder	“Now show me.”	Child’s sentence:	Child’s acting out:

*Note.* Words in parentheses are optional; children must produce the modeled main verb but may substitute a different infinitive verb.

Level 4. Production of infinitives with *say*, *shout*, *promise*, and *threaten*

Pass: Correct production and acting out of same-actor NVNtoV sentence with *promise* and/or *threaten* and different-actor NVtoV sentence with *say* and/or *shout*

If fail: Target external reference for NVtoV sentences with *say* and *shout* and subject control for NVNtoV sentences with *promise*, *threaten*, *ask*, and *beg*

Verb	Materials and setup	Action/dialogue	Production	Acting out
say: same actor	Materials: Bugs, Donald, toy; blanket	Make Bugs look for the toy “Bugs is looking for his toy.” Make Bugs say to Donald: “I will find my toy. Bugs says... You finish the story. Bugs...?”	Possible error: *(Bugs) says to find the toy	Target: Making Bugs look for the toy
	Setup: Donald standing; put toy under blanket	“Now show me.”	Child’s sentence:	Child’s acting out:

## Appendix B (p. 4 of 4)

Verb	Materials and setup	Action/dialogue	Production	Acting out
say: different actor	Materials: Mickey, Donald, hotdog, table	“It’s dinnertime.” Make Mickey push the hotdog to Donald. Make Mickey say to Donald: “You eat the hotdog, Donald. Mickey says... You finish the story. Mickey...?”	Target: (Mickey) says to eat the hotdog	Target: Making Donald eat the hotdog
	Setup: Mickey and Donald at the table; hotdog on the table, closer to Mickey	“Now show me.”	Child’s sentence:	Child’s acting out:
shout: same actor	Materials: Bugs, Donald	Make Bugs cry. “Bugs is crying. Bugs needs a hug.” Make Donald say to Bugs (loudly): “I’ll hug you, Bugs. Donald shouts... You finish the story. Donald...?”	Possible error: *(Donald) shouts to hug Bugs	Target: Making Donald hug Bugs
	Setup: Bugs sitting; Donald standing far away	“Now show me.”	Child’s sentence:	Child’s acting out:
shout: different actor	Materials: Mickey, Bugs, toys, box	“Mickey was playing. He made a big mess.” Make Bugs say to Mickey (loudly): “Hey Mickey! Clean up the toys Bugs shouts... You finish the story. Bugs...?”	Target: (Bugs) shouts to clean up the toys	Target: Making Mickey put the toys in the box
	Setup: Mickey standing next to toys and box; Bugs standing away from toys	“Now show me.”	Child’s sentence:	Child’s acting out:
promise: different actor	Materials: Bugs, Donald, swing	“Bugs is swinging. Donald wants a turn.” Make Bugs get off the swing. Make Bugs say to Donald: “It’s your turn, Donald. You can swing now. Bugs promises... You finish the story. Bugs...?”	Possible error: *(Bugs) promises Donald to swing	Target: Making Donald swing
	Setup: Bugs on the swing; Donald standing next to the swing	“Now show me.”	Child’s sentence:	Child’s acting out:
threaten: different actor	Materials: Donald, Mickey, pool	Make Donald jump in the pool. “Donald jumps in the pool. Mickey could jump in too. But Mickey is afraid.” Make Donald come out. Make Donald say to Mickey (menacing voice): “Jump in, Mickey or I’ll make you. Donald threatens... You finish the story. Donald...?”	Possible error: *(Donald) threatens Mickey to jump in the pool	Target: Making Mickey jump in
	Setup: Donald and Mickey standing at top of pool near the edge	“Now show me.”	Child’s sentence:	Child’s acting out:
promise: same actor	Materials: Mickey, Donald, 3 toys, box	“Mickey was playing. Mickey made a big mess.” Make Mickey say to Donald: “I’ll clean it up. Mickey promises Donald... You finish the story. Mickey...?”	Target: (Mickey) promises Donald to clean up	Target: Making Mickey pick up the toys
	Setup: Mickey standing next to toys and box; Donald facing Mickey	“Now show me.”	Child’s sentence:	Child’s acting out:
threaten: same actor	Materials: Bugs, Mickey, ball	“Bugs has the ball. Mickey wants the ball.” Make Bugs say to Mickey (menacing voice): “You want the ball. I’ll throw it at you. Bugs threatens Mickey... You finish the story. Bugs...?”	Target: (Bugs) threatens Mickey to throw the ball	Target: Making Bugs throw the ball
	Setup: Bugs and Mickey facing each other; Bugs has the ball	“Now show me.”	Child’s sentence:	Child’s acting out:

Note. Words in parentheses are optional; children must produce the modeled main verb but may substitute a different infinitive verb.

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## Appendix C

### Sample Results for Levels 1–4

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Example 1. Level 1 performance for 2 children who had produced catenatives but had not produced any marked or unmarked infinitives in conversation

Pass: Carol (age 5;1) produced NVtoV sentences with all three of the verbs *want*, *like*, and *try*.

Fail: Kyle (age 4;0) did not produce any infinitives but produced single-clause sentences with just the verb (e.g., “Bunny tries”) or with a noun phrase object (e.g., “Mickey likes the swing”).

Example 2. Level 2a performance for 2 children who had produced either unmarked or marked NVtoV infinitives with one or two early verbs

Pass: Carol (age 5;1) produced NVtoV infinitives with all five of the verbs at Level 2.

Fail: Ed (age 5;3) produced one unmarked infinitive with the verb *beg*. For all of the other verbs, he produced conjoined sentences in which the targeted main verb did not have any direct object (e.g., “Donald asks and Mickey says yes”).

Example 3. Level 2b performance for 3 children who had produced NVtoV infinitives but had not produced any NVNtoV infinitives in conversation

Pass: Allie (age 5;11) produced an NVNtoV infinitive with *want*. For *tell*, she produced a quotation form utterance without an object noun phrase, “Donald tells ‘please find my toy,’” and made Mickey look for the toy.

Pass: Kristen (age 5;5) produced an NVNtoV infinitive only with *tell*. For *want*, she produced the NVtoV sentence “Mickey wants to swim” with an external referent, putting Bugs in the pool and making him swim.

Fail: Eli (age 3;7) did not produce any NVNtoV infinitives but produced NVtoV sentences with an external referent with both verbs. He produced “Donald tells to find the toy” and made Mickey look for the toy. He produced “Mickey wants to swim” and put Bugs in the pool.

Example 4. Level 3 performance for 2 children who had produced a marked NVNtoV infinitive with one verb

Pass: Sam (age 4;6) produced NVNtoV with five of the main verbs from Level 2b and Level 3, including both lexical subject verbs (*want* and *like*) and three ditransitive verbs (*force*, *ask*, and *beg*). He produced a tensed complement—“Donald tells he finds his toy”—rather than an infinitive with *tell*. Interestingly, he omitted the indirect object noun in this sentence.

Fail: Molly (age 5;1) produced one NVNtoV sentence with each verb type, the lexical subject verb *want* and the ditransitive verb *beg*. For the other verbs, she produced an NVtoV infinitive with external reference. For instance, she produced “Mickey forces to climb the ladder” and made Donald go up the ladder.

Example 5. Level 4 performance

Fail: Karen (age 5;7) produced a subject-controlled NVtoV sentence with *say* (“Bugs says to clean up the toys,” making Bugs pick up the toys). She produced an object-controlled NVNtoV sentence with *promise* (“Bugs promises him Donald to go in the swing,” making Donald go on the swing). With *threaten*, she produced both a subject-controlled NVNtoV infinitive (“Mickey threatens Bugs to throw the ball,” making Mickey throw the ball) and an object-controlled NVNtoV infinitive (“Donald threatens Mickey to jump in the pool,” making Mickey go in the pool).

Example 6. Level 2a responses by Laura (age 3;10)

“Donald wants to stand up,” making Donald stand up

“Mickey likes to swing,” making Mickey swing

“Bugs tries to climb the ladder,” making Bugs climb

“Mickey begs to sleep,” putting Mickey in the bed

“Mickey promises that he’ll clean up,” making Mickey pick up the toys

“Donald asks if he could swim,” putting Donald in the pool

“Bugs threatens Mickey,” making Bugs throw the ball at Mickey

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