

ELICITED PRODUCTION OF CRITICAL PRAGMATIC FUNCTIONS AT AGE 5

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Goal of the Project

- To develop pragmatically-appropriate picture-based materials and communication situations to elicit non-imitative production of several important language functions (and their corresponding semantic and syntactic forms) that are normally mastered between the ages of 4 and 7 years of age.

Language Functions Tested

- Asking an appropriate Wh-question to find out some specific information that you need.
- Uniquely specifying referents for your listener so that they can identify who or what you are talking about.
- Taking on the communicative perspective of another person and understanding the speech acts they are producing.
- Linking events together into a narrative that has both an action-level description (a “landscape of action”) and an inner view of the characters’ mental states (a “landscape of consciousness”).

Each of these aspects of language has been shown to be crucial for fluent communication and extended discourse, and is a prerequisite for successful adjustment to schooling and the development of early literacy skills.

Key Features of the Procedures

- They provide referential support and pragmatic motivation for the particular forms and functions to be produced.
- They constrain the range of appropriate responses, so they are more easily scored than a more open-ended language sample.
- They retain appropriate communicative naturalness in the elicitation procedure rather than resorting to modeling and imitation.
- They test the interaction of syntactic and semantic forms with specific pragmatic functions.
- They sample a range of simple to more complex syntactic and semantic forms that serve similar communicative functions.
- The materials are all picture-based so they require minimal technology and can be administered and scored by a single clinician interacting with the child.

Subject Sample

- Results shown are from 20 to 22 African-American children from the inner city of a mid-sized city in the northeastern US. They were in pre-kindergarten, kindergarten, or first grade classrooms, and ranged from 4:3 to 6:9 years of age. None of the children had suspected or documented language disorders.
- The children were tested one-on-one by white and African-American graduate students and researchers in Communication Disorders at the University of Massachusetts.
- The children are divided into two groups on the basis of grade level: those in pre-K, varying in age from 4:3 to 5:8 (mean 4:10); and those in K or 1st grade, aged 5:1 to 6:9 (mean 6:1).

1. Asking the Right Wh-Question

- The child is shown pictures in which some critical aspect of the scene is missing -- indicated by a blank area surrounded by a dotted line -- and they have to find out what is happening in each picture by “asking the right question”. Missing elements of the pictures include objects, people, locations, and causes of emotion, thus providing motivation for the child to ask What, Who, Where, and Why questions.
- If an appropriate question is asked the tester places a see-through overlay on top of the picture that contains the missing material so that the picture is completed and the answer to the question is revealed.
- The first two training items (a What and a Who scenario) are used to get the child into the game of asking a question (rather than guessing at the answer!) -- using several levels of prompting including full imitation of a question asked by the tester.
- For the next set (Set 1) of items (containing an example of each of the target Wh-questions) the child is first given the semantic domain of the question to be asked: e.g. “The girl is painting something. Ask me the right question and I’ll show you the answer.” If the target question is not asked the tester prompts with the Wh word: e.g. “Ask me a What question. What...(rising intonation).”
- Finally, for Set 2 (again containing an example of each target question) the child is at first simply told to “Ask me the right question.” If the target question is not asked the tester prompts by giving the semantic domain of the needed question (see above), but on these trials the child is never given the Wh word.

Results -- Wh-Question Asking

Tables 1 and 2 show the percentage of children in each group who produced a Wh-question of the target form for the critical test Set 2, when they were no longer prompted with the Wh word.

Asking the Right Wh-Question – Set 2 Trials:

Table 1: Percent of trials with unprompted, specific, target Wh-question form.

<i>Grade & Age</i>	<i>What</i>	<i>Who</i>	<i>Where</i>	<i>Why (1)</i>	<i>Why (2)</i>
PK (4;10)	0	11.1	0	0	0
K&1 st (6;1)	54.5	54.5	45.5	72.7	45.5

- = Why emotion
- = Why action

PK (n=9)

K&1st (n=11)

Table 2: Percent of trials with specific, target Wh-question form either unprompted or following a semantic domain prompt (“something”, “somebody”, “someplace”, “somehow”, or “for a reason”).

<i>Grade & Age</i>	<i>What</i>	<i>Who</i>	<i>Where</i>	<i>Why (1)</i>	<i>Why (2)</i>
PK (4;10)	0	33.3	22.2	33.3	33.3
K&1 st (6;1)	72.7	72.7	91.0	81.8	91

- = Why emotion
- = Why action

PK (n=9)

K&1st (n=11)

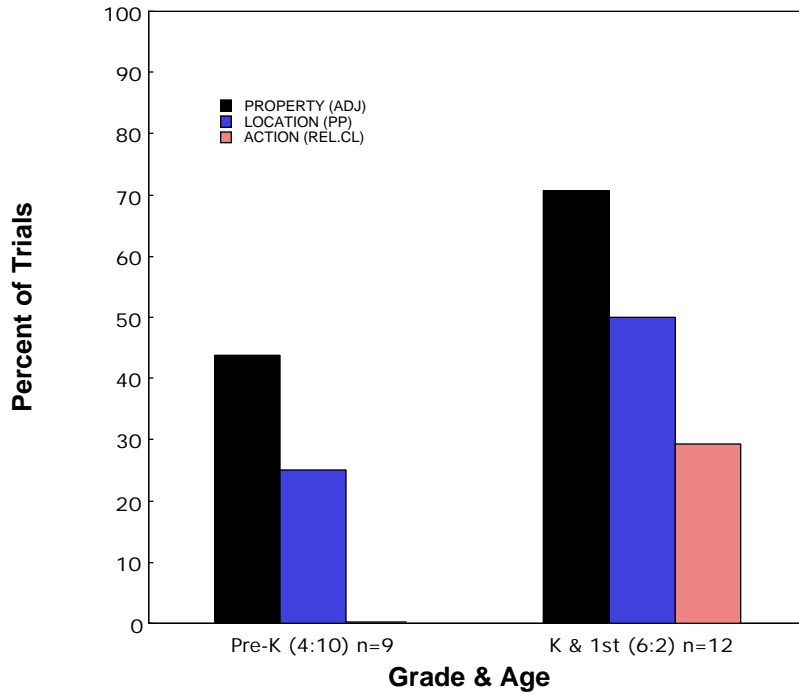
2. Specifying a Referent

- The tester and child sit opposite each other and play a referential communication game.
- They each have pictures of the same two referents in front of them. The referents vary either in some physical property (e.g. a black horse vs a white horse), a location (a policeman on a horse vs a policeman in a car), or an action they are performing (a woman feeding a baby vs a woman changing a baby).
- The child is then shown a more complex picture that only s/he can see (it is on the other side of the tented book from the tester). One of the referents is performing an action (or being acted on) in the complex picture, with that event framed by a red square (the “red box”).
- The child is asked by the tester to tell her what is happening in the red box in a way that the tester can know which X it is (“I need to know which ____ it is?”).
- If the child does not pick out the referent in what s/he says, the tester prompts with a pragmatically-appropriate question for clarification: “Which ____? I don’t know which one. There are two ____s.” (a specification prompt).
- If the child successfully specifies the referent but does not describe what is happening in the red box s/he is given an event prompt: “Okay, but what is happening in the red box?”
- The first two trials (both property/adjective cases) are treated as training items and the child is given feedback if they don’t succeed in specifying the referent or describing the event in the red box. Eight trials follow -- two property (Adj), two location (PP), and four action (Rel.Cl) -- with no feedback about correctness (other than the prompts described above). For each type, half the time it is the agent of the action in the red box that has to be specified and half the time it is the object of the action.

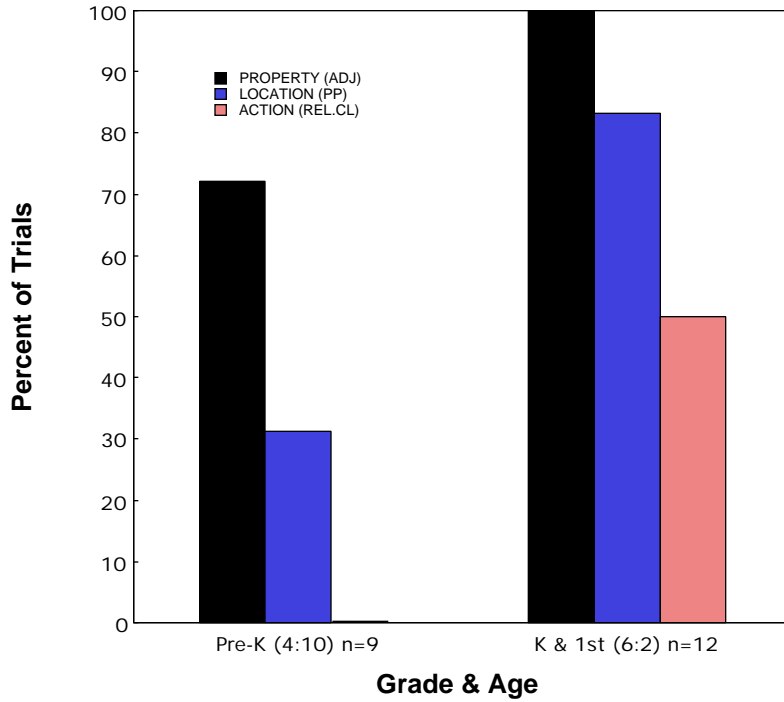
Results -- Reference Specifying

Figures 1 and 2 show the percentage of children in each group who successfully specified the referent for the tester when they had to refer to a distinctive property, location, or action to do so. The child was credited with a reference specification in target form if they produced the syntactic form that most naturally served that function -- i.e. an adjective for a property, a prepositional phrase for a location, and a relative clause for an action. However, they also received credit for a correct target form if they used a syntactically more complex form to specify the referent -- e.g. a relative clause in place of a prepositional phrase. They did not receive credit on this analysis if they used a simpler and less effective pragmatic strategy -- e.g. saying “This one.” or pointing at the picture in front of them (that the tester could not see).

REFERENCE SPECIFICATION USING TARGET FORM (UNPROMPTED)



REFERENCE SPECIFICATION USING TARGET FORM (UNPROMPTED OR AFTER "WHICH X?" PROMPT)

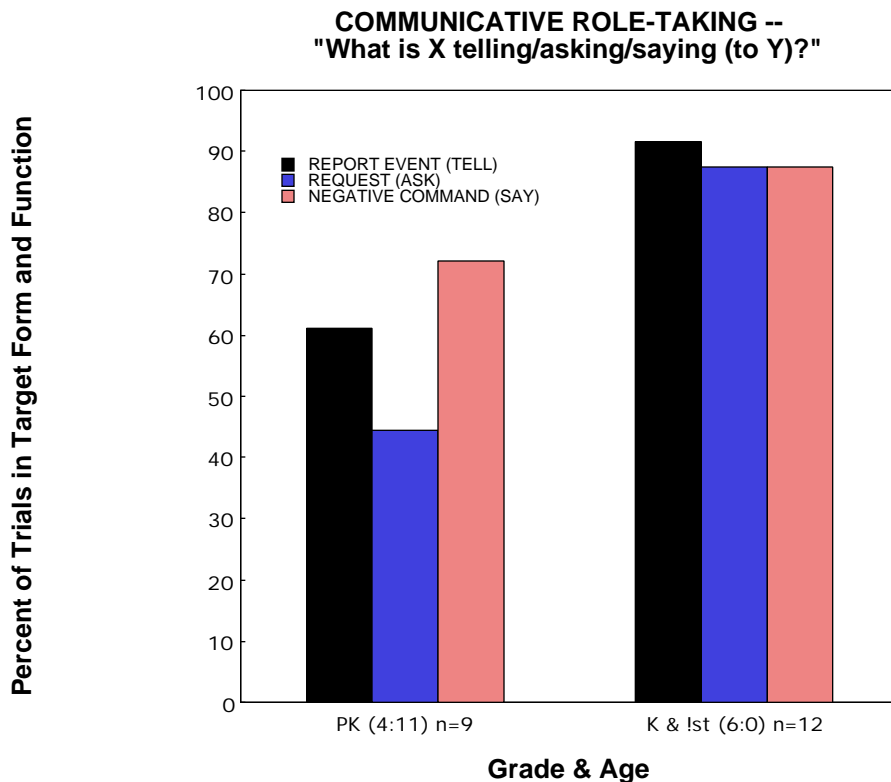


3. Communicative Role Taking

- In this procedure the child is shown sequences of two pictures.
- In the first picture a character either participates in or observes an event. The child is asked to “Look at what’s happening here.”
- A second picture is then revealed in which that character is gesturing and clearly saying something to another person, or is being spoken to. Depending on the nature of the sequence, the child is asked what the speaking character in the second picture is “telling”, “asking”, or “saying to” the other person. The pictured events and the communication verb used by the tester constrain the type of speech act that the child should produce, motivating reporting events (“telling”), requesting an object or action (“asking”), or commanding someone (“saying to” in a negative event context). Either direct or indirect speech forms can be correct answers from the child.

Results -- Communicative Role Taking / Speech Acts

Figure 3 shows the percentage of children in each group producing an appropriate report of an event, a request, or a negative command for the speaker depicted in the picture. Each column represents the summed data for two trials eliciting that speech act.



4. Narrative

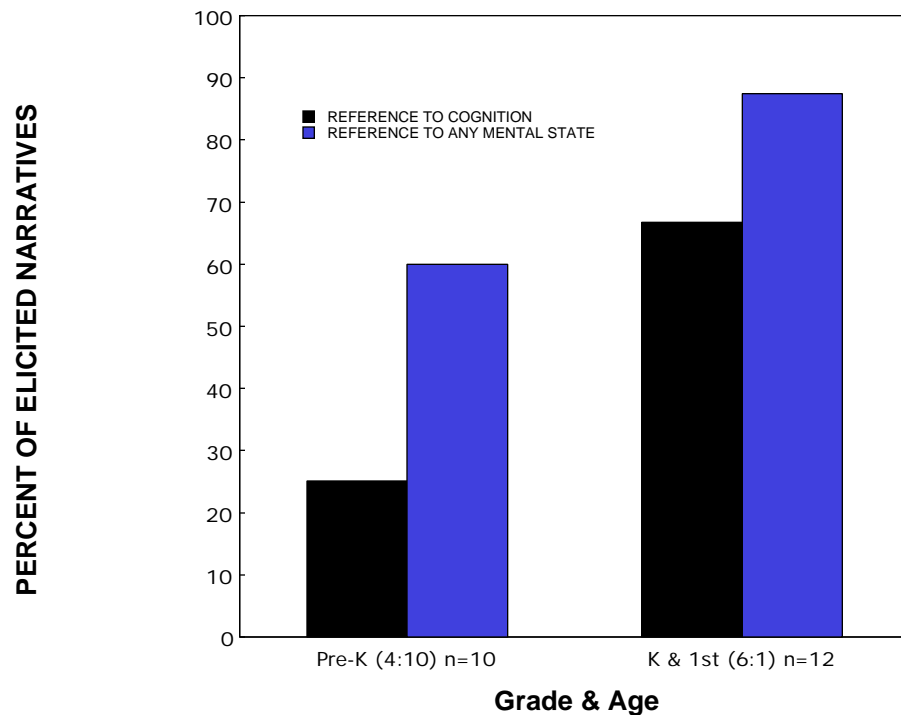
- The child views six pictures in a sequence that depict the events of a short narrative.
- The pictures are on the page of a tented book facing the child and away from the tester, so the child is reminded that the tester can't see the story.
- After being told to look carefully at all of the pictures to see what happened in the story, the child tells "the whole story" to the tester.
- To elicit temporal and causal expressions to relate the events together into a cohesive narrative, the pictures clearly depict important causal and temporal links between events.
- In addition, the sequences incorporate acts that need to be explained in terms of the mental states of the protagonists -- what they feel, want, think, and know or don't know. The development of reference to such a "landscape of consciousness" in stories has been shown to be a critical stage in narrative development (Bruner, 1986).

Results -- Narrative

Across the 4 to 7 year-old children in this subject sample, only very simple temporal sequencers (e.g., "then", or "and then") were used to mark time relationships between events, and more complex embedded temporal clauses were vanishingly rare. These complex forms have been shown to become dominant in the narratives of children aged 8 and older (e.g. Slobin & Berman, 1994).

However, the growing reference to the mental states of the characters in the children's narratives clearly distinguishes between the two grade and age groups. Figure 4 shows the marked differences between the two groups of children in the percent of their narratives that contained at least one reference to the characters' cognitive states (what they thought or knew), and in references to any mental states (emotions, desires, or cognitions).

REFERENCES TO CHARACTERS' MENTAL STATES



Conclusions

- The procedures and materials described here were successful at eliciting high levels of use of several important pragmatic functions in five-and-a-half to six-and-a-half year old African-American children.
- Several target features of the semantics, syntax, and pragmatic functions elicited by these materials distinguished sharply between the pre-kindergarten four- and young five-year-olds and the kindergarten and 1st graders who were about a year older.
- This suggests that the items could constitute a useful component of a test of language development between the ages of 4 and 7.

Field testing of these materials with a substantial number of 3 to 8 year old children from a wider range of backgrounds and dialectal variation is currently in progress. The testing is also being extended to children with documented or suspected language disorder to determine whether the materials are also discriminating of differences in the language of children with normal and delayed or disordered development.