

## Initial Verbs of Yes-No Questions: A Different Kind of General Grammatical Category

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The nature of grammatical categories has long been a subject of dispute for theorists of language development, just as the nature of concepts has long been a concern for theorists of cognitive development. In our study, we examined 16 children to determine their knowledge of placement privileges of auxiliary verb forms (e.g., *am, can, have*) in yes-no questions. Our purpose was to specify the grammatical category (if any) the auxiliary verb forms constituted early in development. The results suggested that the category of concern is a peculiar mixture of general and specific knowledge. The implications of this finding for theories of language and cognitive development are briefly considered.

As young children acquire their first language, they gradually create a productive grammatical system that provides the basis for the production and comprehension of novel utterances (i.e., ones that the children have not previously encountered). Although much of the work in language development during the 1960s and early 1970s focused on the development of the productive grammatical system (Bloom, 1970; Brown, 1973; McNeill, 1970), a consensus about the nature of the system and the nature of the processes underlying its development has still not been reached (e.g. Kuczaj, 1982; Maratsos & Chalkley, 1980). Thus, the literature on syntactic development is replete with disagreements about the nature and development of grammatical rules and grammatical classes (see the following for varied explanations of errors such as *did I missed it?*; Fay, 1978; Hurford, 1975; Kuczaj, 1976; Maratsos & Kuczaj, 1978; Prideaux, 1976).

In this short article, we will discuss and illustrate a kind of knowledge of grammar in young children that has not been widely studied: knowledge of a grammatical category defined by obligatory use in a sentential

position, but not yet analyzed by the child for the general related properties that predict a term being a candidate for membership in this grammatical category. In particular, we will argue that in acquiring the correct use of English auxiliary verbs in yes-no questions, children realize early in their development that *some* relational term must appear in the sentence's initial position (i.e., before the subject-noun phrase, as in "will the boy eat the ice cream?", *will* being the sentence-initial-relational term, and *the boy* being the subject-noun phrase). This realization is an abstract structural knowledge that goes beyond the specific knowledge that particular individual terms can occur in this position. At the same time, however, children have not yet correlated yes-no question uses of auxiliary verbs with appropriate declarative uses. The result is a consistent failure to predict from declarative uses which terms might constitute members of this yes-no auxiliary class. Thus, for a particular time during the course of development, children appear to have a peculiar mixture of specific and general knowledge about the use of auxiliary verbs in yes-no questions, similar to that evidenced during the acquisition of the modal auxiliary placement rule in *wh* questions (Kuczaj & Brannick, 1979).

In the developmental period of interest (roughly corresponding to the mean length of utterance [MLU] range of 3.0 to 4.5), children reliably produce yes-no questions in which auxiliary verbs are used in correct sen-

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tence initial position, such as "can you come?" "did he sing?" and so on. At this same time, children also use correct related declarative constructions, such as "he didn't sing," "he is eating," "she can draw," and so on. This gives the appearance that the children are producing auxiliary verbs in questions, negatives, and declaratives, with general rules based on grammatical categories.

There are, however, indications that children may *not* fully understand the system but may encode only memorized knowledge that *certain* lexical items appear in initial position in yes-no questions. Two types of evidence support this contention. First, in some occurrences children exhibited considerable knowledge of an auxiliary verb in declarative contexts but *no* knowledge of its use in yes-no question contexts. Second, some predictable errors were *not* observed. Both types of evidence suggest that the children had not yet related declarative auxiliary verb uses with yes-no question auxiliary verb uses. This, in turn, suggests that their use of auxiliary verbs rested on relatively specific rather than fully general analyses.

### Method

The evidence for the above claims comes from longitudinal spontaneous speech samples obtained from two children (the first author's two sons, Abe and Ben) and cross-sectional spontaneous speech samples obtained from 14 firstborn children (5 females, 9 males). In Abe's case, 1 hour of his spontaneous speech in his home environment was recorded each week from 2 years 5 months to 4 years. (Thirty minutes of spontaneous speech was obtained weekly from age 4 years 1 month to 5 years.) For Ben, 45 minutes of spontaneous speech was obtained weekly from 1 year 11 months to 3 years. One hour of spontaneous speech was obtained for 6 consecutive weeks for each of the children in the cross-sectional sample; these children varied in age from 2 years 6 months to 5 years 6 months. Other analyses of these speech samples can be found in Kuczaj, 1976, Kuczaj, 1977, Kuczaj, 1981; Kuczaj & Daly, 1979.

### Results and Discussion

We shall first consider the children's correct use of an auxiliary form in declarative contexts, but not in yes-no question contexts. The examples that we cite are all from children who evidenced control of various *be* forms and modal auxiliary verb forms in declarative and yes-no questions. Thus, their

failure to use a form in yes-no questions, which they frequently used in varied declarative contexts, was particularly striking.

Abe first used *could* in declarative contexts at 2 years 11 months, but did not use it in yes-no question contexts until 3 years 5 months, at which time he invariably used the form in correct sentence-initial position. From 2 years 11 months through 3 years 4 months, Abe had 201-recorded occasions to use *can* or *could* in yes-no question contexts. During this period, he always used *can* in such contexts (and in correct sentence-initial position on all but two occasions, both at 2 years 11 months). Abe, then, had occasion to use *could* in yes-no question contexts during this period, but consistently chose to use *can* instead. Moreover, once he began to use *could* in yes-no question position, he always used it in the correct sentential position—on 15 occasions at 3 years 5 months, 13 occasions at 3 years 6 months, and 15 occasions at 3 years 7 months. This same pattern was observed for seven of the children in the cross-sectional sample. They used *can* and *could* in declarative contexts but invariably used *can* in yes-no question contexts.

The same pattern was observed for *would*. Abe first used *would* in declarative contexts at 2 years 9 months, but did not use it in yes-no questions until 3 years 5 months. From 2 years 9 months through 3 years 4 months, there were 34 opportunities in his speech samples for use of *will* or *would* in yes-no questions. When Abe used one of these forms in yes-no questions during this period, it was always *will*. However, once he began to use *would* in yes-no questions, he used it in correct sentence-initial position. This pattern of using *will* and *would* in declaratives, but only *will* in yes-no questions, was also observed in three of the children in the cross-sectional sample.

As noted earlier, some predictable errors were *not* observed. Abe, Ben, and seven of the children in the cross-sectional sample used the auxiliarylike term *better* in declaratives such as "you better go" and "you better not do that" (which can be compared to uses such as "you should go" and "you should not do that") without ever producing reasonable overgeneralizations such as "better I go?" (These same children did produce se-

quences such as "should I go?") Similarly, Abe, Ben, and seven of the children in the cross-sectional sample used the auxiliarylike term *gotta* in declarative contexts without ever producing incorrect but reasonable utterances such as "gotta you go?" Other terms such as *hafta* and *wanna* were used frequently in declarative contexts, but never in sentence initial position in yes-no questions. Ben also frequently used *be* in sequences such as "that be a nice one," "he be drinking," and "when her bees home, I wanna go at the store" without ever producing forms such as "be that a nice one?" or "be he eating dinner?" This evidence demonstrates that children do not easily overgeneralize from use in declarative contexts to use in yes-no question contexts.

Given that we do not know the exact basis on which children predict yes-no question use from declarative use, it is difficult to ascertain the theoretical significance of such failures to overgeneralize. Nonetheless, such failures do demonstrate that use of a form in auxiliary verb position in declarative contexts is *not* a sufficient basis for the generalization of the use of the form to yes-no question contexts.

It seems clear that children do *not* show convincing evidence of the knowledge of the general properties of related uses of yes-no and declarative auxiliary verbs that we attribute to the adult by calling such terms auxiliary verbs. This, in turn, seems to argue that the children's knowledge of initial terms in yes-no questions is based on a memorized list of individual term uses (i.e., young children seem to know that particular individual terms such as *can*, *will*, *is*, and *are* may appear in sentence-initial position in yes-no questions). If so, it might be argued that the use of these terms in yes-no question initial position does *not* depend on any general abstract knowledge of sentence form.

For various reasons, however, children do know more than a memorized list of individual forms that may appear at the beginning of yes-no questions. There are two chief arguments to this effect.

First, when initially learning auxiliary verb terms in declaratives, children achieve stable acquisition (based on the criterion of at least 90% correct use in obligatory contexts) at highly diverse times for individual terms. For

Table 1  
*Age of Acquisition of Various Forms in Declarative Contexts by Abe and Ben*

Form	Example	Age of acquisition			
		Abe		Ben	
		Yr.	Mo.	Yr.	Mo.
<i>can</i>	You can do it.	2	5	2	6
Copula					
<i>is</i>	That is hot.	2	7	2	4
Copula					
<i>are</i>	Those are mine.	2	9	2	7
Auxiliary					
<i>is</i>	She is cooking dinner.	3	0	2	7
Auxiliary					
<i>are</i>	We are eating now.	3	0	2	10
<i>will</i>	I will eat it.	3	0	2	10

example, consider copula and auxiliary *is* and *are* and the modal auxiliaries *can* and *will*. The ages at which Abe and Ben achieved stable acquisition of these forms in declaratives are given in Table 1.

Although there are some simultaneous acquisitions in declaratives, there is considerable variability in the age of acquisition of the forms *as a group*. This is not surprising, given the differences in the syntactic and semantic functions of the terms (Lyons, 1969). However, the picture for yes-no questions is somewhat different. Stable acquisition of the target forms, stably learned earlier but at various times in declaratives, appears with far greater simultaneity in yes-no questions, particularly for Abe. This is shown in Table 2.

As an aside, it is worth noting that the differences in age of acquisition, relative simultaneity of acquisition, and order of acquisition, which occur in the data from Abe and Ben, appear to reflect different styles of language acquisition on their part (Kuczaj, 1981). Abe was a much more reflective language learner than Ben and appeared to consolidate much of his linguistic knowledge prior to employing it in his spontaneous speech (e.g., Kuczaj & Maratsos, 1975). On the other hand, Ben appeared to be a much more impulsive language learner, frequently using forms and structures on the basis of fragmentary (and sometimes incorrect) analyses (Kuczaj, 1981). The magnitude and type of individual differences that occur in language development are in serious need of in-

Table 2  
*Age of Acquisition of Various Forms in Yes-No  
 Question Contexts by Abe and Ben*

Form	Example	Age of acquisition			
		Abe		Ben	
		Yr.	Mo.	Yr.	Mo.
<i>can</i>	Can we go?	2	11	2	10
Copula <i>are</i>	Are you happy?	3	0	2	10
Auxiliary <i>is</i>	Is he going?	3	0	3	1
Auxiliary <i>are</i>	Are they leaving now?	3	1	3	0
Copula <i>is</i>	Is she here?	3	1	2	8
<i>will</i>	Will you stay?	3	1	2	10

investigation, as are the implications such differences have for theories of language development (Nelson, 1981).

The finding of a more or less simultaneous acquisition pattern of yes-no question initial-position use for diverse terms has also been reported by Bellugi (1971), Klima and Bellugi (1966), Miller and Ervin-Tripp (1964), and Kuczaj (1981). This finding is a developmental pattern that suggests that young children are applying some general structural realization to diverse terms. That is, children seem to be able to create syntactic categories (in this case, the class of initial terms in grammatical yes-no questions) that are defined in terms of syntactic properties rather than purely semantic or pragmatic properties (Kuczaj, 1982; Maratsos & Chalkley, 1980). Moreover, in the present case, the category of concern is one in which the individual items serve a variety of functions in declarative contexts, although they do share a common grammatical function in such contexts (i.e., they appear in a postsubject noun-phrase position: "she *is* happy," "they *are* eating"). This commonality, however, is evidently insufficient for predicting which terms occur in sentence-initial position in yes-no questions (see earlier discussion).

The second argument in support of the notion that children have some abstract knowledge concerning the use of auxiliary verbs in yes-no questions is as follows: Prior to the use of terms such as *is* and *can* in sentence-initial position in yes-no questions,

these terms are used in declarative position, with intonation marking these utterances as questions, as in "it is hers?" and "we can go?." These forms are relatively infrequent (Bellugi, 1971; Ingram & Tyack, Note 1). In the data available to us, however, in the later period in which declarative *could*, *have*, and others appear, children do *not* produce questions such as "we could go?" "he had got it?" "I better go?" or "I gonna go?" and so on. Children act as though they know that yes-no questions in general should have a pre-noun-phrase sentence-initial-relational term; but not knowing that *could*, for example, can appear initially, they use *can*, which they know may appear initially. If children knew some terms individually that could be placed in sentence-initial position in questions, without knowing that yes-no questions *in general* require an initial relational term, then we would expect to observe questions such as "we could go?" or "he has gone?." Such question types are nonexistent in the speech samples obtained from the children we have studied.

Children during this period of development thus appear to have an interesting type of knowledge of correlated auxiliary verb (and copula *be*) uses in declarative and yes-no questions. They know that some relational term must appear in initial position in yes-no questions, this being a general form of categorical knowledge. But knowledge of which particular terms can appear in this initial position appears to require individual term analysis, even though the child possesses the general knowledge just described. Positing such peculiar formulations appears to be the only way to account for the otherwise puzzling mixture of general and specific word-bound knowledge of the auxiliary verb system that children long display. In turn, this suggests that the learning of a category is not simply the discovery of the general properties that define the category. If this were so, then instances that possess such properties should be readily placed into the category of concern. As we have seen, however, this is not always the case. Some additional analysis of individual instances is also necessary in order to decide if an instance does belong to a particular category. Such combinations of general and specific analyses seem common in

syntactic development (Kuczaj, 1977; Kuczaj, 1978; Kuczaj & Brannick, 1979). It seems to us that such combinations of general and specific analyses may also characterize category development in general. If so, theories of category development need to be as much concerned with individual instance analysis as with general property analysis. Thus, there is considerable need to determine the general principles of category formation, consolidation, and organization common to all categories, as well as the differences across types of categories.

### Reference Note

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