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Influence of Contractibility on the Acquisition of *Be*: Substantial, Meager, or Unknown?[1]

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Data from longitudinal and cross-sectional samples are reported in regard to Brown's (1973) hypothesis that uncontractible be *is an earlier acquisition than contractible* be. *It is concluded that this may not be so and that the discrepancy in the literature between Brown's findings and those of de Villiers and de Villiers (1973) is probably due to sampling variables. Problems with scoring speech samples in regard to the distinction between contractible* be *and uncontractible* be *are also discussed, as are the implications of these problems.*

INTRODUCTION

In his longitudinal investigation of the acquisition of 14 morphemes by three children (Adam, Eve, and Sarah) learning English as their first language, Brown (1973) found that copula *be* and auxiliary *be* forms that appeared in uncontractible positions (such as *I am, Do you know where it is?, Is it a frog?*) are earlier acquisitions than the same forms in contractible positions *(I'm happy, Where's the box?, You're trying too hard).* The above distinction

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is between contractible and uncontractible sentential positions, not contractible and uncontractible forms. There are, however, uncontractible *be* forms *(be, was, were)* which occur in what might be thought of as contractible sentential positions *(I was sad, You be the crooked president and I'll be the reporter),* and it is not clear whether Brown included such forms in his analysis.

Brown found that Adam and Sarah controlled the uncontracted copula when their MLUs (mean length of utterance) were 2.75, but did not achieve criterion on the contracted copula until their MLUs had surpassed 4.00. Eve did not acquire the uncontracted copula until after her MLU had reached 4.00 but was similar to the other two children in that the contracted copula came in later than the uncontracted copula. All three children acquired auxiliary *be* after their MLUs had reached 4.00, and they all acquired the uncontracted forms before the contracted forms. In summary, then, Brown found that uncontracted forms were acquired earlier than contracted forms.

In his discussion of the importance of contractibility on the acquisition of *be,* Brown discusses at length Labov's (1969) work with Black English (BE), in which *be* forms are frequently omitted in obligatory contexts (for Standard English,–SE) by mature adult speakers. According to Labov, the deletion of *be* forms is governed by a rule that emphasizes contractibility. "Wherever SE can contract, BE can delete *is* and *are,* and vice versa; wherever SE cannot contract *is* and *are,* BE cannot delete *is* and *are,* and vice versa" (1969, p. 722). Brown suggests that the three children in his study followed a more general version of this rule before they achieved criterion for the *be* forms; "Wherever SE can contract, child English can delete and vice versa; wherever SE cannot contract, child English cannot delete and vice versa" (1973, p. 267).

In a cross-sectional study comparable to Brown's longitudinal investigation, de Villiers and de Villiers (1973) obtained speech samples (ranging in size from 168 to 900 utterances) from 21 children aged between 16 and 40 months and scored these samples for the 14 morphemes using Brown's criterion. In general, the de Villiers' findings corroborated those of Brown, but the de Villiers report an opposite pattern for contractible and uncontractible *be* than does Brown. The arguments for either acquisition pattern are not compelling (*cf.* Brown, 1973, pp. 264-268; de Villiers and de Villiers, 1973, p. 272), leaving unanswered the question of which pattern is the typical one, if either can claim this distinction.

The present investigation will report some relevant data in regard to the contractible-uncontractible issue, and also outline the inherent difficulties involved in analyzing spontaneous speech samples in terms of this distinction.

METHOD

Subjects

The primary subject of this investigation was the investigator's son Abe. At the time of the study, Abe was an only child who had been participating in a longitudinal investigation of language acquisition. Approximately 1 hr of Abe's spontaneous speech in his home environment was recorded and transcribed by the investigator each week (two ½-hr sessions per week) from age 2;4;14 (years;months;days) to 4;1;0, with ½ hr of spontaneous speech being recorded each week from 4;1;0 to 5;0;15. In addition to the longitudinal data provided by Abe, cross-sectional data were obtained from 14 other children, the sample consisting of two children at each of the following ages: 24-25 months, 30-31 months, 36-37 months, 42-43 months, 48-49 months, 54-55 months, 60-61 months. Ten of the cross-sectional subjects were only children, the remaining four subjects each being the oldest sibling in a dyad, with the other sibling always being an infant less than 1 year of age. All 15 children were children of intact college-student couples (i.e., both parents were a regular feature of the child's home environment.)

Procedure

Spontaneous Speech Sampling

One hour's worth of spontaneous speech per week for 6 consecutive weeks was obtained for each child in the cross-sectional sample. The speech was recorded on a Sony portable tape recorder which was operated by each child's parents in the absence of the investigator. Although the usual procedure is for the investigator to be present during the taping session (e.g., Bloom, 1970; Brown, 1973), pilot work suggested that having the parents operate the tape recorder in the absence of the investigator resulted in better and more representative speech samples, particularly when one is interested in collecting a representative corpus of the child's speech during a brief period of the child's development.

Each hour of speech was transcribed by the investigator the same week it was recorded. Parental and child speech were transcribed.

To ensure that the transcribing was accurate, reliability scores were obtained by having another rater transcribe randomly selected 250-morpheme-long segments (child's speech) of the first and sixth tapes for each child in the cross-sectional sample and comparing these transcriptions with those of the

investigator. For Abe's tapes, reliability scores were obtained at more or less random intervals. The reliability scores were quite high (from 90.4 to 100.0).

MLU

A mean length of utterance was calculated for each child. The procedures used are identical to those described by Brown (1973) with the exception that here a MLU score was calculated for each of the 14 children's six 1-hr samples and then the six scores were averaged to obtain a mean MLU. For Abe, MLUs were obtained each month by taking 100 utterance samples from each of two successive transcripts, one immediately preceding and one immediately following the fifteenth day of the month. Table I reports the MLUs of the children in this study.

Scoring

The verb *be* and the auxiliary *be* have three present tense forms: *am* (first person singular), *is* (third person singular), and *are* (second person singular and all plurals). Each of these forms also occurs in a contracted form, and these six forms together with the infinitive *be* and the past tense forms *was* and *were* constitute the allomorphs of *be.* For the purposes of the contractible-uncontractible comparison, the spontaneous speech samples were analyzed in terms of four categories: all forms of *be* in an uncontractible position in a declarative utterance, all forms of *be* in a contractible position in a declarative utterance, all forms of *be* in yes-no questions, and *was* and *were* in contractible positions in declarative utterances.

The first two categories are unproblematic. The *be* form occurs (or is omitted) in either a contractible position or an uncontractible position.

Table I. Average Mean Length of Utterance for Each Cross-sectional Subject and for Abe at 6-Month Intervals

Age	MLU		
2;6	Abe–3.34	M. Z. – 2.94	N. E. – 3.62
3;0	Abe–3.86	I. B. – 4.64	D. N. – 3.05
3;6	Abe–5.86	H. K. – 4.03	V. Q. – 4.23
4;0	Abe–4.79	K. M. – 5.02	G. D. – 4.24
4;6	Abe–5.36	F. Y. – 4.66	L. R. – 4.53
5;0	Abe–4.99	A. B. – 4.08	H. L. – 4.95
5;6	–	J. W. – 5.13	C. P. – 4.97

Similarly, the *was* and *were* category is easily defined. The forms themselves are uncontractible, but they do occur in contractible positions, and so these forms have been included to test the importance of contractibility per se, rather than limiting the analysis to contractible and uncontractible sentential positions. (Brown seems to have included at least one uncontractible form in his analysis–*be*–which can occur in contractible positions, e.g., *You be the crook.* Nonetheless, his comparisons and conclusions are based on position-type rather than form-type.)

The yes-no question category is problematic, and no relief to the scoring problems is found in either Brown's or the de Villiers' study. The way in which they scored such constructions is not described, and so I have scored correct and incorrect forms as follows: A correct yes-no question *(Is the fox home?)* was scored as an instance of supplying a *be* form in an uncontractible position. All other errors, including omission of *be (The fox home?)* and improper placement of *be (The fox is home?* and *The fox's home?),* were scored as instances of the child not supplying the *be* form in the uncontractible position. This scoring technique is lacking in several respects. First, adults produce constructions such as *You're going where?* and *He's in there?,* so such yes-no questions are not necessarily ungrammatical (in terms of one's mental grammar). Perhaps, then, this type of construction should not be scored as incorrect but instead as a grammatical variant of the yes-no question construction. If one uses this criterion, then how are the omissions of *be* to be scored? Omissions could be omissions of the *be* form in an uncontractible position or omissions of the *be* form in a contractible position. If one scores them as omissions of *be* in a contractible position because one is counting forms such as *He's doing his work?* as correct, then the only result possible in a comparison of contractible and uncontractible *be* positions in yes-no questions is that *be* in the uncontractible position is an earlier acquisition than *be* in the contractible position, since one has eliminated any possible errors for the uncontractible yes-no question position. Although this problem is avoided in this study, the scoring is biased in that it is not clear that everything scored as errors were in fact errors.

RESULTS AND DISCUSSION

The data that were obtained regarding contractibility are given in Tables II-VII. Regarding the 14 cross-sectional children's use of *be* in declaratives, only one child (M. Z.) failed to produce a *be* form in an obligatory uncontractible sentential position *(I want to see where's another puzzle),* but

Table II. Numerical Summary of the 14 Cross-sectional Children's Spontaneous Use of *Be* in Contractible and Uncontractible Positions in Declaratives[a]

Subject	Uncontractible position	Percentage of correct use	Contractible position	Percentage of correct use
N. E.	4	100.0	273(6)	97.8
M. Z.	2(1)	66.7	279(212)	56.8
D. N.	3	100.0	58(2)	96.7
I. B.	11	100.0	584(3)	99.5
H. K.	13	100.0	253(2)	99.2
V. Q.	8	100.0	344	100.0
K. M.	9	100.0	384(2)	99.5
G. D.	11	100.0	252(5)	98.1
F. Y.	5	100.0	240	100.0
L. R.	3	100.0	244	100.0
A. B.	12	100.0	425(3)	99.3
H. L.	14	100.0	157	100.0
J. W.	7	100.0	262	100.0
C. P.	4	100.0	201	100.0

[a]Numbers in parentheses denote omissions of an obligatory *be* form.

Table III. Numerical Summary of Abe's Spontaneous Use of *Be* in Contractible and Uncontractible Positions in Declaratives[a]

Age	Uncontractible position	Percentage of correct use	Contractible position	Percentage of correct use
2;5	2	100.0	92(8)	92.0
2;6	1	100.0	131(33)	79.9
2;7	1	100.0	178(27)	86.8
2;8	–	100.0	144(15)	90.6
2;9	3	100.0	214(4)	98.2
2;10	3	100.0	267(2)	99.3
2;11	10	100.0	281(8)	97.2
3;0	1	100.0	235(1)	99.6
3;1	3	100.0	250	100.0
3;2	4	100.0	322(1)	99.7
3;3	17	100.0	357	100.0
3;4	21	100.0	307	100.0
3;5	41	100.0	265	100.0
3;6	8	100.0	250	100.0
3;7	11	100.0	285	100.0
	Count discontinued			

[a]Numbers in parentheses denote omissions of an obligatory *be* form.

Table IV. Numerical Summary of the 14 Cross-sectional Children's Use of *Be* in Yes-No Questions (an Uncontractible Position)[a]

Subject	Number of occurrences	Percentage of correct use
N. E.	83(2)	97.6
M. Z.	9(19)	32.1
D. N.	4	100.0
I. B.	29(5)	85.3
H. K.	54	100.0
V. Q.	51	100.0
K. M.	28(1)	96.6
G. D.	11	100.0
F. Y.	25	100.0
L. R.	25	100.0
A. B.	5	100.0
H. L.	8	100.0
J. W.	23	100.0
C. P.	17	100.0

[a]Numbers in parentheses indicate omissions of forms in obligatory uncontractible positions.

Table V. Numerical Summary of Abe's Spontaneous Use of *Be* in Yes-No Questions[a]

Age	Number of occurrences	Percentage of correct use
2;5	0(2)	0
2;6	1(14)	6.6
2;7	0(32)	0
2;8	0(26)	0
2;9	0(21)	0
2;10	1(15)	6.3
2;11	14(23)	37.8
3;0	20(2)	90.9
3;1	23	100.0
3;2	20(1)	95.2
3;3	38	100.0
3;4	22	100.0
3;5	31(1)	96.9
3;6	24	100.0
3;7	53	100.0
Count discontinued		

[a]Numbers in parentheses denote omissions of forms in obligatory uncontractible positions.

Table VI. Numerical Summary of the 14 Cross-sectional Children's Spontaneous Use of *Was* and *Were* in Contractible Positions in Declaratives[a]

Subject	Numbers of times used	Percentage of correct use
N. E.	7	100.0
M. Z.	22(5)	81.5
D. N.	1	100.0
I. B.	58	100.0
H. K.	31	100.0
V. Q.	21	100.0
K. M.	43	100.0
G. D.	47	100.0
F. Y.	10	100.0
L. R.	38	100.0
A. B.	39(1)	97.5
H. L.	5	100.0
J. W.	30	100.0
C. P.	8	100.0

[a]Numbers in parentheses denote omissions of *was* and *were* in obligatory contractible positions.

Table VII. Numerical Summary of Abe's Spontaneous Use of *Was* and *Were* in Contractible Positions in Declaratives[a]

Age	Numbers of times used	Percentage of correct use
2;5	0(1)	0
2;6	1	100.0
2;7	3(1)	75.0
2;8	3	100.0
2;9	10(1)	90.9
2;10	19	100.0
2;11	25	100.0
3;0	18	100.0
3;1	33	100.0
3;2	27	100.0
3;3	65	100.0
3;4	82	100.0
3;5	37	100.0
3;6	45	100.0
3;7	37	100.0
	Count discontinued	

[a]Numbers in parentheses denote omissions of *was* and *were* in obligatory contractible positions.

many of the children occasionally failed to supply *be* in obligatory contractible positions. Still, all of the children except M. Z. surpassed the 90% criterion of correct use in obligatory contexts for *be* in contractible and uncontractible positions, so any differences between correct use of *be* in contractible and uncontractible positions for these children could be due to sampling differences. M. Z. was better at supplying *be* in uncontractible positions than in contractible positions, but he also had many more opportunities to err for the contractible position, so this difference could also be due to sampling variation, as well as to frequency of opportunity for correct use. During the early time period in which his speech was sampled, Abe also fared better in supplying *be* in uncontractible positions than in contractible positions, but the differences are not very impressive. Abe also had relatively infrequent opportunities to use *be* in uncontractible positions, and so it is not clear what the observed differences reflect. These findings lend little support to Brown's finding of an earlier knowledge of *be* in uncontractible positions, but neither do the data contradict his observation.

Interestingly, if the use of *be* in *wh*-questions had been included in the above analysis, the differences would have been more in line with Brown's findings. Initially, children who demonstrate control of *be* forms in declarative constructions will not also control these forms in *wh*-questions, often omitting or incorrectly placing the *be* form (as in *What he is painting?*). Errors of omission in *wh*-questions would lower the percentage of success for contractible positions, as would misplacement errors. However, it is not clear how misplacements of *be* in *wh*-questions were scored by Brown and the de Villiers, and this is one of the reasons *wh*-questions containing *be* were not included in this analysis. The other reason these constructions were neglected was that it was felt to be desirable to compare uncontractible positions in declaratives with contractible positions in declaratives, not uncontractible positions in declaratives with contractible positions in declaratives and *wh*-questions. To my understanding, Brown included *wh*-questions in his analysis and since there seems to be a general acquisition trend such that correct use of *be* emerges in declaratives before *wh*-questions, and since the post-*wh*-word is a contractible position, this may have biased Brown's results.

The yes-no question analysis demonstrates that the notion that children do not omit *be* forms in obligatory uncontractible positions fails in an absolute sense. Young children do frequently omit *be* in the uncontractible yes-no question position, although they do not always do so. Perhaps the differences between Brown's finding and that of the de Villiers were due to the frequency with which children who had not yet learned the correct position of *be* in yes-no questions and *wh*-questions used these forms in the

speech samples (another important variable may have been the infrequent opportunity for the use of *be* in uncontractible positions). As noted earlier, children who produce many incorrect *wh*-questions (i.e., omit or misplace *be*) will lower their percentage of success for *be* in contractible positions. The opposite effect will occur for children who frequently produce ungrammatical yes-no questions–this will lower their percentage of correct use of *be* in uncontractible positions. Thus the different patterns observed by Brown and the de Villiers may have been due to sampling variables, and perhaps to the differing dispositions of individual children to ask yes-no questions and/or *wh*-questions.

Regarding the analysis of *was* and *were,* uncontractible forms, in contractible positions in declaratives, Table VI and Table VII reveal that these forms were infrequently omitted, but the fact that they were omitted at all casts further doubt on the absolute truth of the notion that children will not omit forms that are not contractible in the standard English of adults. Children do sometimes omit *be* forms that occur in uncontractible positions or that are uncontractible themselves.

SUMMARY AND CONCLUSION

The present study failed to provide unequivocal support for Brown's hypothesis that *be* forms in uncontractible sentential positions are earlier acquisitions than *be* forms in contractible sentential positions. It was suggested that what one finds in regard to this issue will depend on how one scores one's data as well as on sampling variables beyond the investigator's control. The scoring preferences of the author were discussed, as were the difficulties involved in arriving at reasonable scoring decisions.

The data demonstrate that Brown's hypothesis fails in an absolute sense, but it is unlikely that it was intended to be true in this sense anyway. A reasonable reading of the hypothesis would suggest that it was intended to express a tendency, not an absolute norm. Perhaps Brown's hypothesis is true in a relative sense (i.e., it may express a disposition which occurs in the acquisition of *be*), but much more information is needed to determine if this is so. A further investigation of this topic would need to involve children younger than those studied here, as well as solving to general satisfaction the many scoring problems. In addition, one would somehow have to control for the greater frequency of contractible positions than uncontractible positions in declaratives and *wh*-questions, the opposite pattern for yes-no questions, and children's later control of *be* forms in yes-no questions and *wh*-questions than in declaratives.

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