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LINGUISTIC ANALYSIS OF CHILDREN'S SPEECH: A COMPARISON OF FOUR PROCEDURES

by

Trudy Ann Marie Schrandt

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Major Professor

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My thanks are also extended to the members of my committee, Dr. Leo F. Engler, my major professor and Dr. Bruce Flanagan.

To my husband, Bob, goes a special thank you for his patience and understanding throughout my course of study.

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INTRODUCTION

Expressive oral language is freguently the most important single factor through which a child's growth and development are assessed. It is vital to the researcher and clinician, that as accurate a representation of the child's language performance as possible be obtained.

Recent investigators in developmental psycholinguistics (Chomsky, 1957, McNeill, 1966, 1971) have demonstrated the importance of differentiating between linguistic competence and linguistic performance. Competence is thought of as the speaker-hearer's knowledge of his language and is generally discussed in terms of an internalized system of linguistic rules. Performance, on the other hand, is the actual use of language in "real life", concrete situations. Developmental psycholinguistics is interested in competence, or the grammatical rules that would allow an hypothetical or "idealized" child to generate sentences. Concern with individual child differences that alter the rate and type of grammatical rule acquisition is what sets the area of speech pathology apart from developmental psycholinguistics. The generative rules that developmental psycholinguists wish to identify

and describe reside in the child's competence, not performance. For differential analysis of individual differences, the speech pathologist must effectively assess the child's performance and then prescribe treatment that will improve performance.

Recent clinical research has begun to focus on the structural or linguistic aspects of children's language performance (Lee, 1966; Lee and Canter, 1971; Engler, Hannah, and Longhurst, 1971; Dever and Bauman, 1971). These procedures require that the speech clinician elicit, record, segment, and then analyze, classify or score the spontaneous speech of children.

Lee (1966) applied findings obtained in several developmental psycholinguistic studies (Braine, 1963; Brown and Fraser, 1964; Brown and Bellugi, 1964; Miller and Erwin, 1964) of normal language acquisition to develop a procedure for diagnosing delayed language development. Lee's purpose was to investigate the observation that the "language delayed" child was not just slower in syntactic development but was proceding in a bizzare manner. A speech sample was collected and analyzed from a "normally developing" and a "clinic" child. Lee concluded, based on the comparison of the two children, that her developmental sentence types (DST) method of classifying sentences showed marked differences in her two samples. Her analysis demonstrated not only slower development in the

"clinic" child but failure in production of certain types of syntactic structures.

Engler, et al., (1971) presented a linguistic procedure which allowed the speech clinician to elicit, record, segment, and analyze the spontaneous speech of children within a relatively standardized test situation. This eclectic approach utilized contrastive analysis using a combination of concepts borrowed from slot-filler (tagmemic), immediate constituent, and elementary transformational grammar approaches of current linguistic theory. Engler, et al., posited five basic sentence-types for English, with the construction contained in the verb phrase as the criterion for classification. The categories were: (1) sentences characterized as "equational" by using copulative or linking verbs, (2) sentences employing intransitive verbs, (3) sentences containing "object-taking" verbs, (4) sentences requiring a "transitive verb of the senses" and (5) passive sentences (although transforms of type (3), they are listed separately for purposes of frequency count). Using Chomsky's current (1965) theory, the authors suggested that by applying the linguistic processes of expansion, conjoining, and transformation any English sentence can be generated, and/or reduced to one of or a combination of the five basic sentence types. Engler, et al., suggested that the procedure provided a simplified inventory and a relatively quick analysis and

tabulation which made for a more accurate diagnosis of a child's language deviation and gave valuable insights into the preparation of a clinical program.

Dever and Bauman (1971) presented a scale of clausal development (SCD) based on a slot-filler (tagmemic) grammar and designed to classify the spontaneous utterances of children who were CA 18-40 months. The scale was not intended to be indicative of any specific stages within clausal development nor was it an attempt to describe clausal development in terms of the development of children. It was an attempt at classifying language performance patterns. The scale was conceived as being a scale of development within clauses and clause-types (intra-clause) and not as a scale which indicated generalized development across clauses (inter-clause). The expected outcome was that children would exhibit regular advances within clauses, but irregular development across clauses.

Lee and Canter (1971) developed a clinical procedure, developmental sentence scoring (DSS), intended to estimate the status and progress of children currently undergoing language training in a clinic. It was based on a developmental scale of syntax acquisition. It was predicted that by analyzing a child's spontaneous, tape-recorded speech sample, a clinician could estimate if a child had generalized rules sufficiently to use them in verbal performance. This procedure gave weighted scores to a

developmental order of different "parts of speech", specific morphological or syntactic constructions. Lee and Canter's primary objective was to provide guidelines for estimating the status and rate of progress in children treated in a speech clinic. A secondary outcome allowed the clinician to plan lessons which presented these structures in a presumably developmental sequence.

The purpose of the present report was to analyze these four procedures in order to determine which procedures or parts of procedures best fulfilled the needs of the speech clinician or language researcher.

METHOD

Subjects

Two females, Eve (CA, 5.2) and Sara (CA, 5.4) served as subjects. For the purpose of the present study, subjects were chosen at the chronological age of five (5). It is with this age group that most clinicians first come into contact and begin working with language delayed clients.

Pre-Test

Eve was considered normal in language development by her parents and peers, while Sara was currently undergoing therapy for delayed language. To describe further the linguistic differences between the two subjects a Peabody Picture Vocabulary Test (PPVT, Form a) was

administered and a fifty-response speech sample was collected from each subject (Templin, 1957; Johnson, Darley, and Spriestersbach, 1963). From this sample a mean length of response (MLR) (Templin, 1957), type-token ratio (TTR) (Siegel, 1967) and a length-complexity index score (LCI) (Miner, 1969) were computed. Stimuli used to elicit these samples were multi-colored action pictures (W 2, 4, 6, 7, 10, and 12) from the Peabody Language Development Kit (Level #2). The results of these analyses appear in Table 1.

Table 1.

Pre-Test Differences
Between the Two Subjects

1	2	3	4
Source	Eve (CA, 5.2)	Sara (CA, 5.4)	Variation*
PPVT			PPVT
VIQ	116.0	90.0	VIQ 26.0
MA	6.8	4.5	MA 2.3
%-ile	89.0	23.0	%-ile 66.0
MLR	5.96	3.00	MLR 2.96
TTR	.772	.546	TTR .226
LCI	5.80	3.40	LCI .240

*Variance compares scores in columns 2 and 3 for each source variable.

Experimental Setting

The speech samples to be used to compare the four linguistic analysis procedures were collected in the Language Acquisition Laboratory at Kansas State University. Only the experimenter and subjects were present. The experimental room was free of distracting visual or auditory stimuli and the tape recorder (TEAC, TCA40) was housed in an adjacent room.

Testing Situation and Stimulus Materials

An additional set of action pictures (W 1, 3, 5, 8, 9, and 11) from the Peabody Language Development Kit (Level #2) were used to elicit the samples during two sessions with each subject. Three pictures were used during each session.

Procedure

Each subject was brought individually to the experimental room and seated at a table. The experimenter presented one of the elicitation pictures and said, "What is happening here?" The subject was then allowed to tell a story about the picture however she wished. The experimenter attempted to encourage the child to talk by saying, "yes", "really" and nodding her head. Excessive prompting was avoided, although, occasionally the experimenter would say, "Is there more? or "Can you tell me more?"

Initial Protocol Preparation. After all sessions were completed, verbatim, type-written transcripts were prepared from the tape recordings. The general procedures for preparing these protocols were similar to those used by Siegel (1963) and later modified by Longhurst (1971), (see Appendix A). A graduate student in speech pathology, experienced in protocol preparation, retyped a portion of the tape recording from each subject for reliability purposes. The inter-examiner reliability for protocol preparation was .96 for Eve's sample and .94 for Sara's.

Segmentation. The corpus was segmented into managable units following the general intent of Hockett (1958). For the purposes of the present study, an utterance was defined as a unit of spoken language preceded and followed by a pause (sustained pitch), or terminated by some change in inflection (rising or falling intonation). While listening to the tape recording, the experimenter segmented the corpus into utterances by marking a slash (/) on the protocol corresponding with the pauses.

Final Protocol Preparation. The decision was made to use a corpus of one-hundred utterances for each subject in the analysis. An equal number of utterances were selected from each of the two sessions for both of the subjects. The middle fifty (50) utterances spoken during each session were then retyped into a protocol containing one utterance per line and the lines were then numbered to expedite analysis.

Linguistic Analysis. The specific procedures described by the authors of each of the four analysis techniques were followed as closely as possible by the experimenter.

Because Lee and Canter's procedure involved a scoring process which utilized a highly readable table to present their data, the other three procedures were arranged in a similar tabular form with the utterances from one to one-hundred represented on the vertical and the various classifications or categories appearing on the horizontal at the top of the page. With the exception of the scoring procedures of Lee and Canter which received a number in the table, a circle (●) was entered under the correct classification or category for each utterance.

Comparison Procedures. The four linguistic analyses were compared according to four criteria: (1) ease of application; (2) inter-scorer reliability; (3) ability to discriminate language differences between the two children; and (4) ability to describe specifically the differences between the two children.

Under the ease of application criterion we attempted to assess whether a great deal of background in linguistics or knowledge of specific terminology was needed to apply the procedure and whether the procedures, as written, were sufficient in terms of application instructions. In a sense, a method of analyzing the ease of application of each

procedure, quantitatively, was to see if another, equally skilled scorer would produce the same results given the same language samples. After each procedure was applied by the experimenter, a second graduate student scorer, with similar training, applied the four procedures. A reliability was computed from the results of the four procedures for each of the two children.

Since the primary linguistic data from each subject were categorized and classified in tabular form, we were able to assess whether the individual procedure seemed to discriminate between the two children. We were also interested in whether application of the procedure would describe specifically what the difference between the two children was.

RESULTS AND DISCUSSION

Lee's (1966) DST procedure was a quasi-transformational approach designed to classify utterances elicited from children. Lee apparently assumed the procedures used in eliciting the speech samples from the children were irrelevant to the results of her analysis because different elicitation procedures were used for the two children she studied. Lee suggests that her DST categories were designed to mirror language development in normal children, however, DST appears to follow closely Chomsky's (1957)

description of adult grammar. Although Chomsky's transformational description of the grammar of English follows a specific order, there has been no evidence that this same order describes the development of language in children.

As Bloom (1966), in her criticism of Lee, suggested; the scorers had to learn to learn her unique categories in order to analyze the utterances in terms of their form and distribution and then classify them on the basis of co-occurrence. It appeared that the only real developmental sequence in Lee's procedure was a repetition of terms at each hierarchial level. It was necessary for the scorer to classify according to the hierarchial progression of levels (e.g., word, phrase, construction, sentence) because it was virtually impossible to follow the example-type instructions given by Lee. The inter-scorer reliability was .86 for Eve's and .84 for Sara's sample.

As can be seen in Tables 2 and 3, different scatter was observed in the arrays of the two subjects. Eve scored almost exclusively at the sentence level and showed only a minimal amount of lower level (e.g., word, phrase, construction) usage. Sara's array scattered a great deal more. A high percentage of Sara's utterances were classified at the construction level while a number were also classified at the next lower level of phrase. Sara's remaining utterances scattered greatly from one word,

Table 2
Eve's Language Sample Classified by Lee's (1966) Developmental Sentence Types (DST)

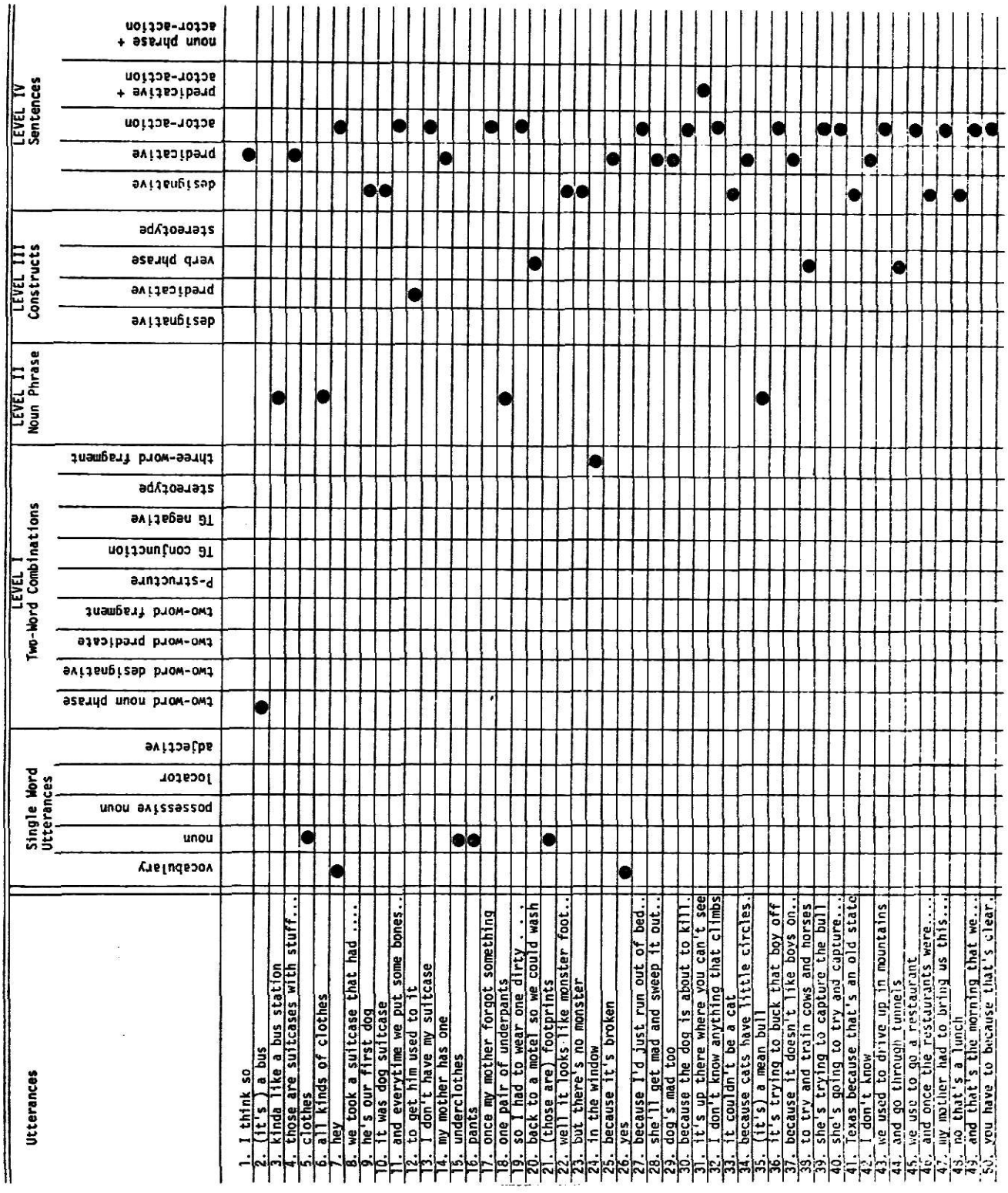

Table 2
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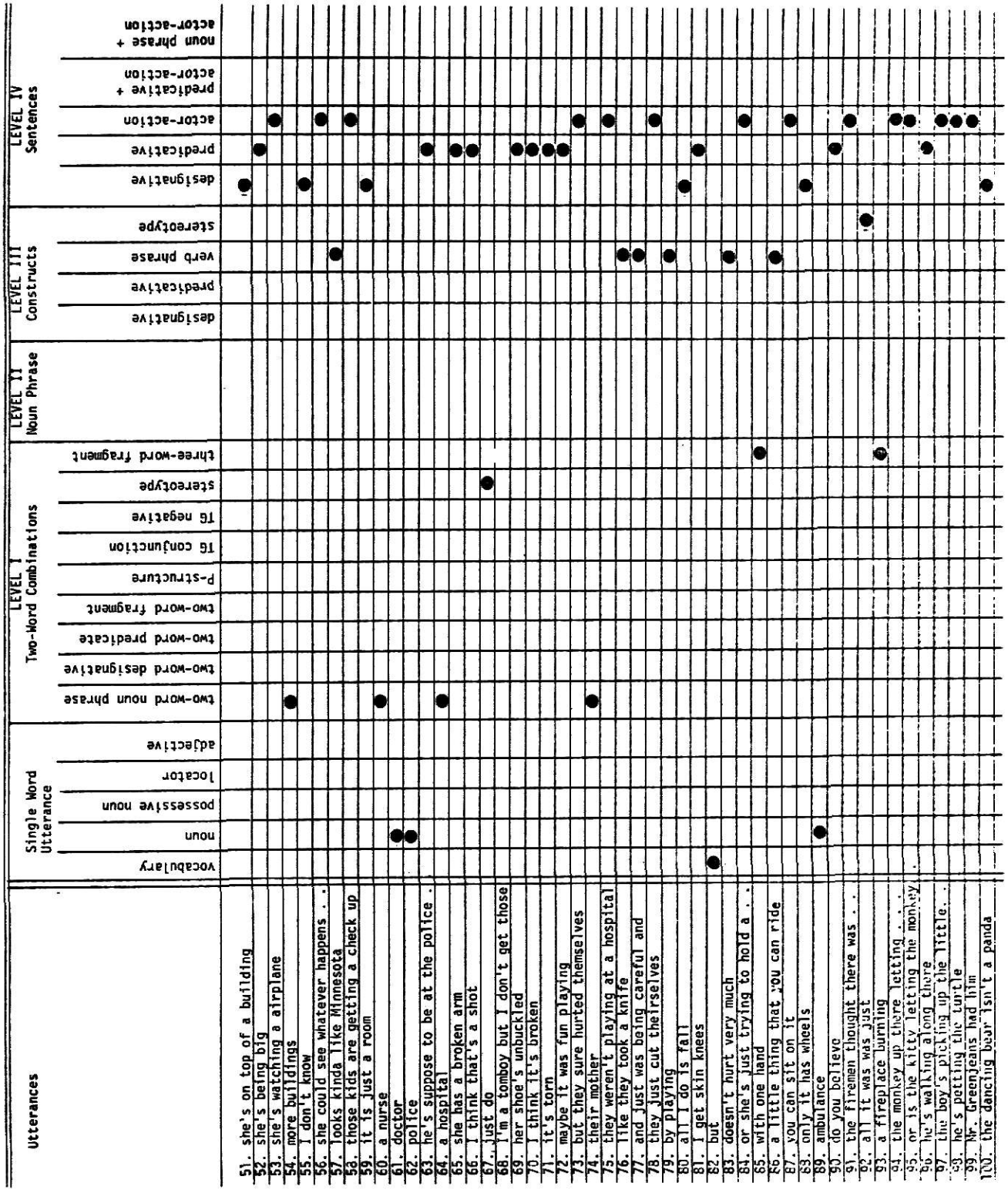

Table 3
Sara's Language Sample Classified by Lee's (1966) Developmental Sentence Types (DST)

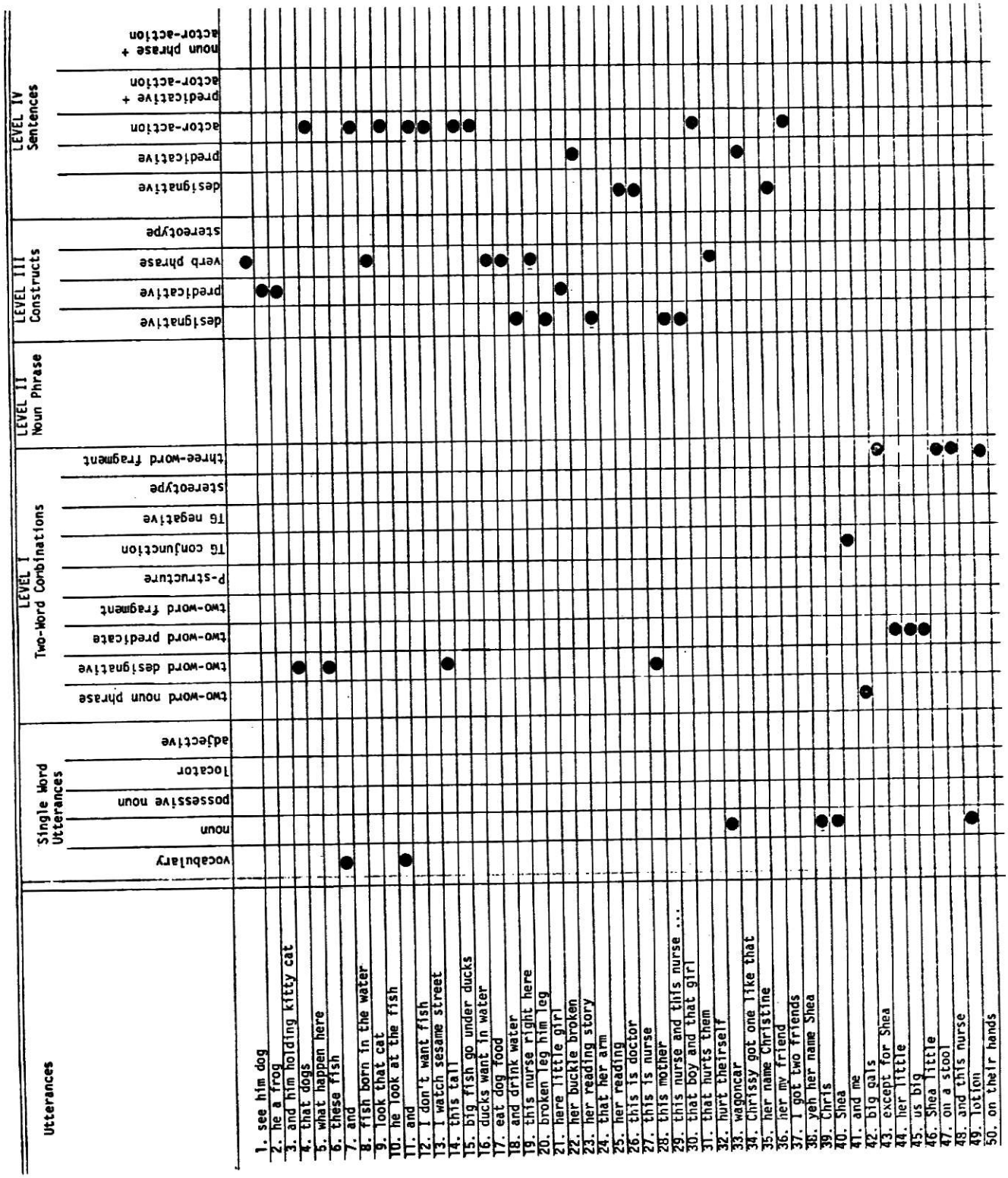

Table 3
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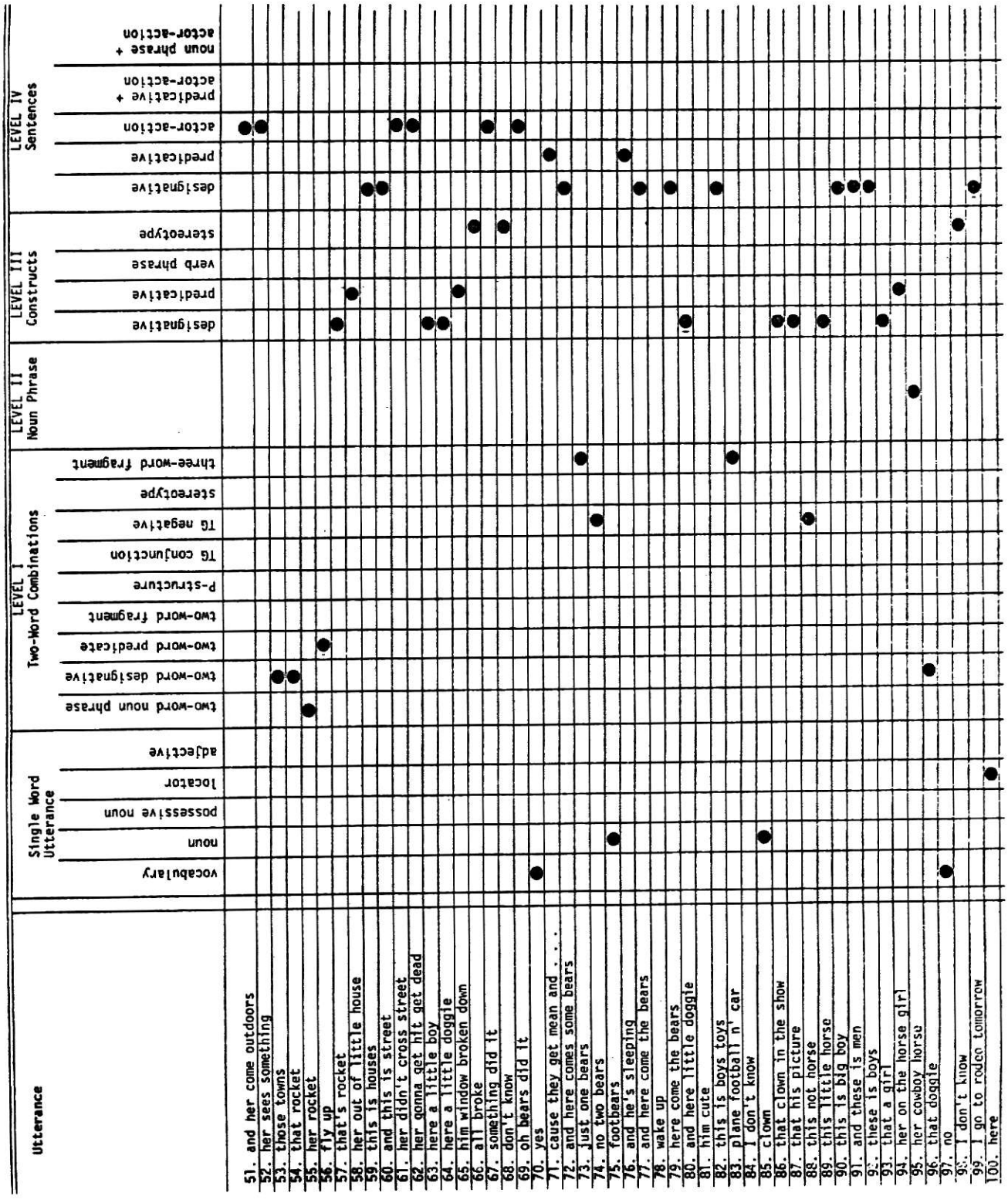


naming responses up to the sentence level. Thus, DST discriminates between the two children.

The results would indicate that DST provided an accurate means of discriminating between the development of the two children's language samples. For describing the difference between the two samples the examiner felt that DST was no more informative than simply classifying the children's utterances in terms of levels of development (e.g., word, phrase, construction, sentence). DST was not, as Lee claimed, transformational. It simply followed the traditional, structural, hierarchial arrangement from sound to sentence. Some of the DST categories were much too broad while others were much too narrow.

It appeared that Lee's DST procedure was simply a pairing of traditional (naming) and structural (levels) grammatical functions with groups of utterances without regard to the function of the utterance.

Dever and Bauman's (1971) SCD appeared to be a very complicated procedure but proved to be easily applied. Although multiple ranks, classifications, and subclassifications were employed, they were easily understood through the excellent tagmemic descriptions given. Any ambiguity of rank, slot, or filler was avoided by the inclusion of sufficient rules to resolve discrepencies. SCD clarified the definition of utterance by allowing contextual circumstances to indicate to what extent the utterance was

accepted. For example, SCD allowed questionable child utterances to be expanded to adult-like utterances which facilitated classification. Inter-scorer reliability for SCD was .93 and .90 for Eve and Sara, respectively, which suggests that instructions for applying SCD were particularly clear and sufficient.

As can be seen in Tables 4 through 9, the results of the SCD showed different patterns of scatter for the two children. Overall, the array reveals Eve's clausal development is approximately one rank ahead of Sara's and her discourse was of the more developed narrative style rather than simply naming. Eve's performance within the Declarative clause category revealed some evidence of rank I elipsed-constructions and an occasional completed-utterance (Table 4). Classification in rank II was limited to only a few completed utterances under characterization and action (Table 5). Rank III received a heavy concentration of completed characterization and action utterances with few elipsed-action utterances: and no Question or Imperative clause types (Table 6). Eve's scoring at the Sentence level showed small increases to rank III where a large number were classified as completed-utterances (Table 6).

Sara showed a certain amount of Declarative labeling but concentrated the majority of her Declarative utterances under the completed-characterization category (Table 8).

Table 4
Eve's Language Sample Classified by
Dever and Bauman's Rank I (1971)
Scale of Clausal Development (SCD)

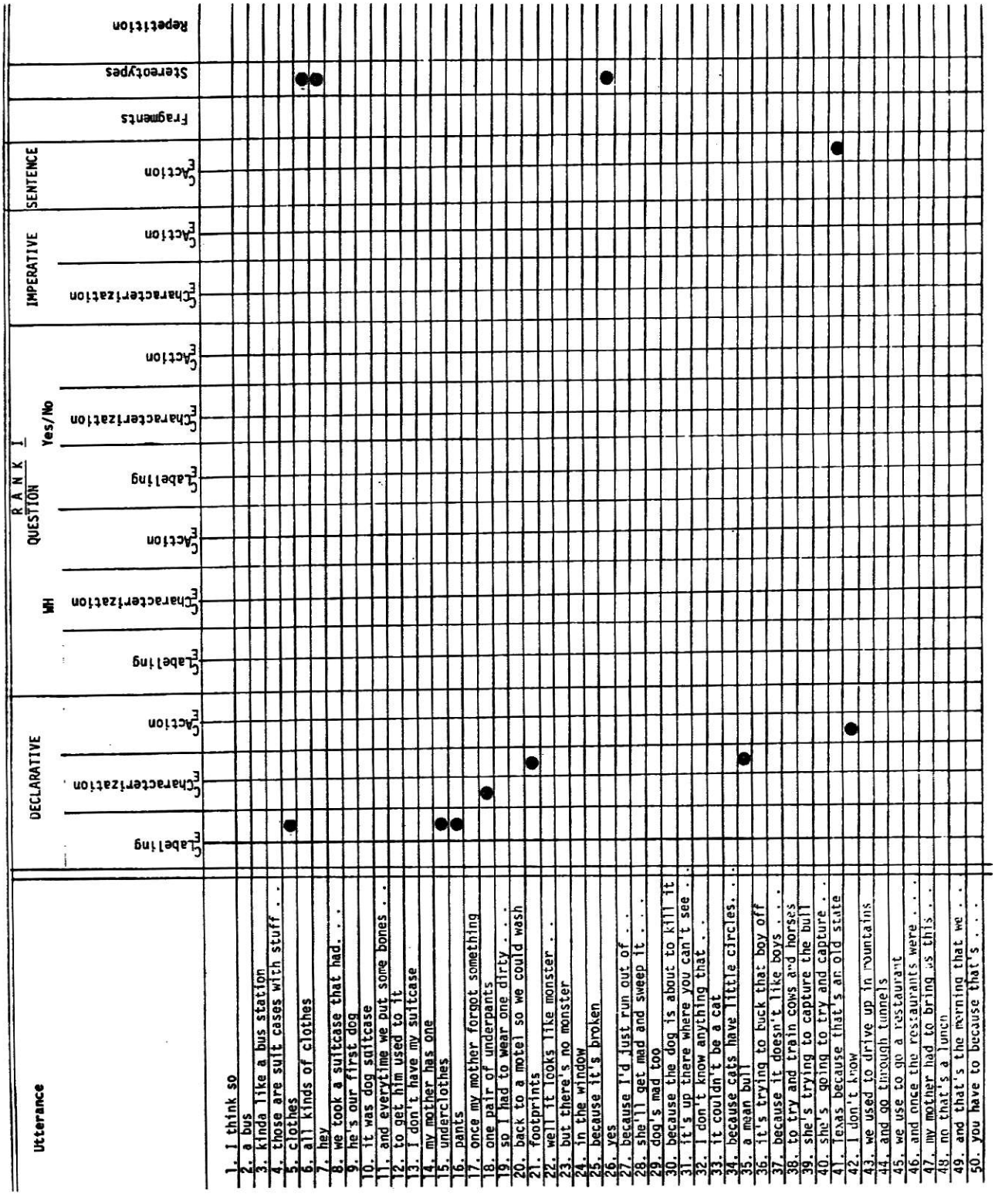


Table 4
continued

Utterance	DECLARATIVE				WH QUESTION				Yes/No				IMPERATIVE			SENTENCE			
	Labeling	Characterization	Action	Labeling	Characterization	Action	Labeling	Characterization	Action	Labeling	Characterization	Action	Characterization	Action	Action	Action	Fragments	Stereotypes	Repetition
51. she's on top of a building																			
52. she's being big																			
53. she's watching a airplane																			
54. more buildings																			
55. I don't know	●																		
56. she could see whatever happens . .																	●		
57. looks kinda like Minnesota																			
58. those kids are getting a check up																			
59. it is just a room																			
60. a nurse																			
61. doctor																			
62. police																			
63. he's suppose to be at the police . .																			
64. a hospital																			
65. she has a broken arm																			
66. I think that's a shot																	●		
67. just do																			
68. I'm a tomboy but I don't get those																			
69. her shoe's unbuckled																			
70. I think it's broken																		●	
71. it's torn																			
72. maybe it was fun playing																			
73. but they sure hurted themselves		●																	
74. their mother		●																	
75. they weren't playing at a hospital		●																	
76. like they took a knife																			
77. and just was being careful and																			
78. they just cut theirselves																			
79. by playing															●				
80. all I do is fall																			
81. I get skin knees																			
82. but																			
83. doesn't hurt very much	●																		
84. or she's just trying to hold a book																			
85. with one hand		●																	
86. a little thing that you can ride																			
87. you can sit on it																			
88. only it has wheels																			
89. ambulance																			
90. do you believe																			
91. the firemen thought there was a . .																			
92. all it was was just																			
93. a fireplace burning																			
94. the monkey up there letting the ...																			
95. or is the kitty letting the monkey.																			
96. he's walking along there																			
97. the boy's picking up the little . .																		●	
98. he's petting the turtle																			
99. Mr. Greenjeans had him																			
100. the dancing bear isn't a panda																		●	

Table 5
Eve's Language Sample Classified by Dever and Bauman's Rank II (1971) Scale of Clausal Development (SCD)

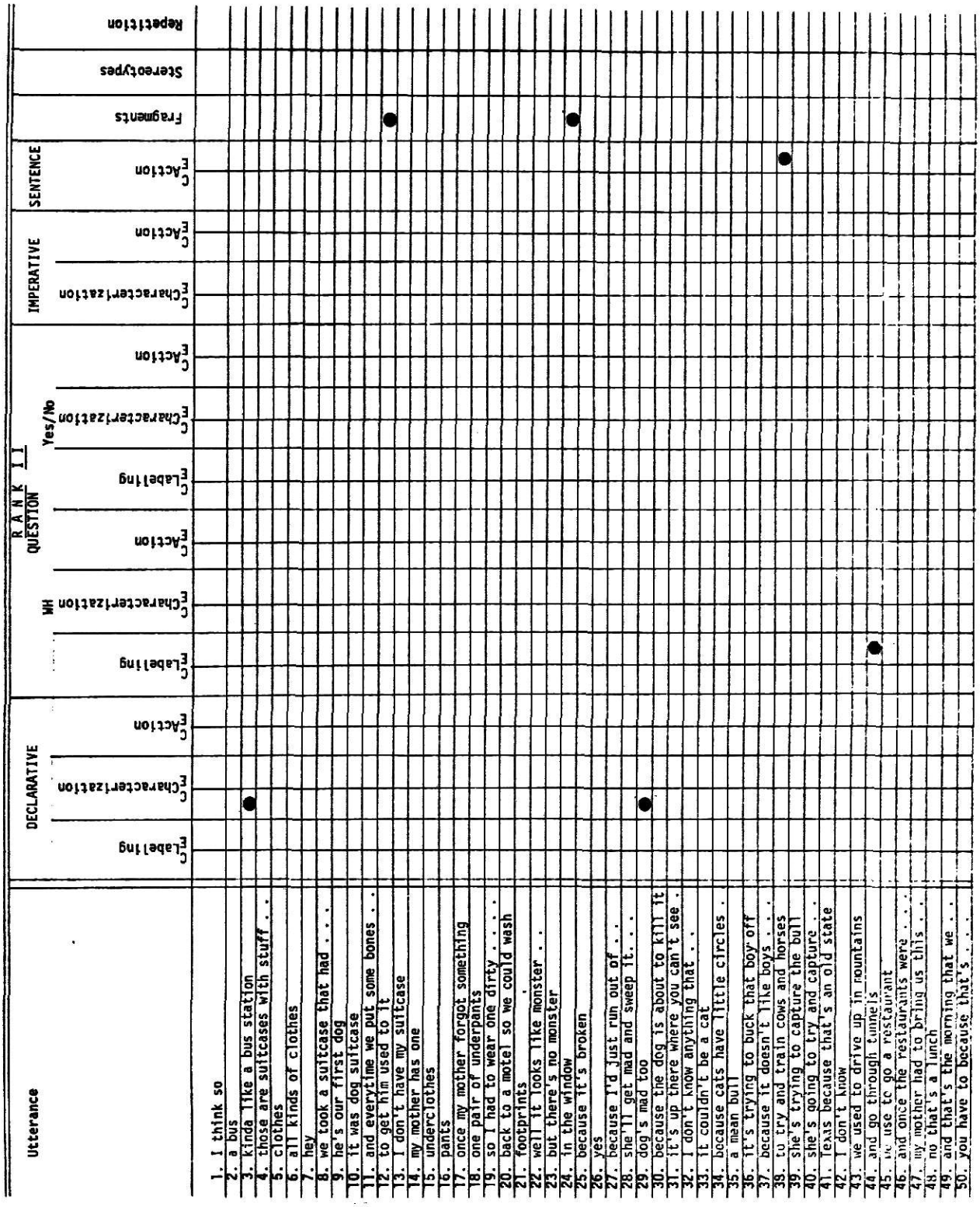
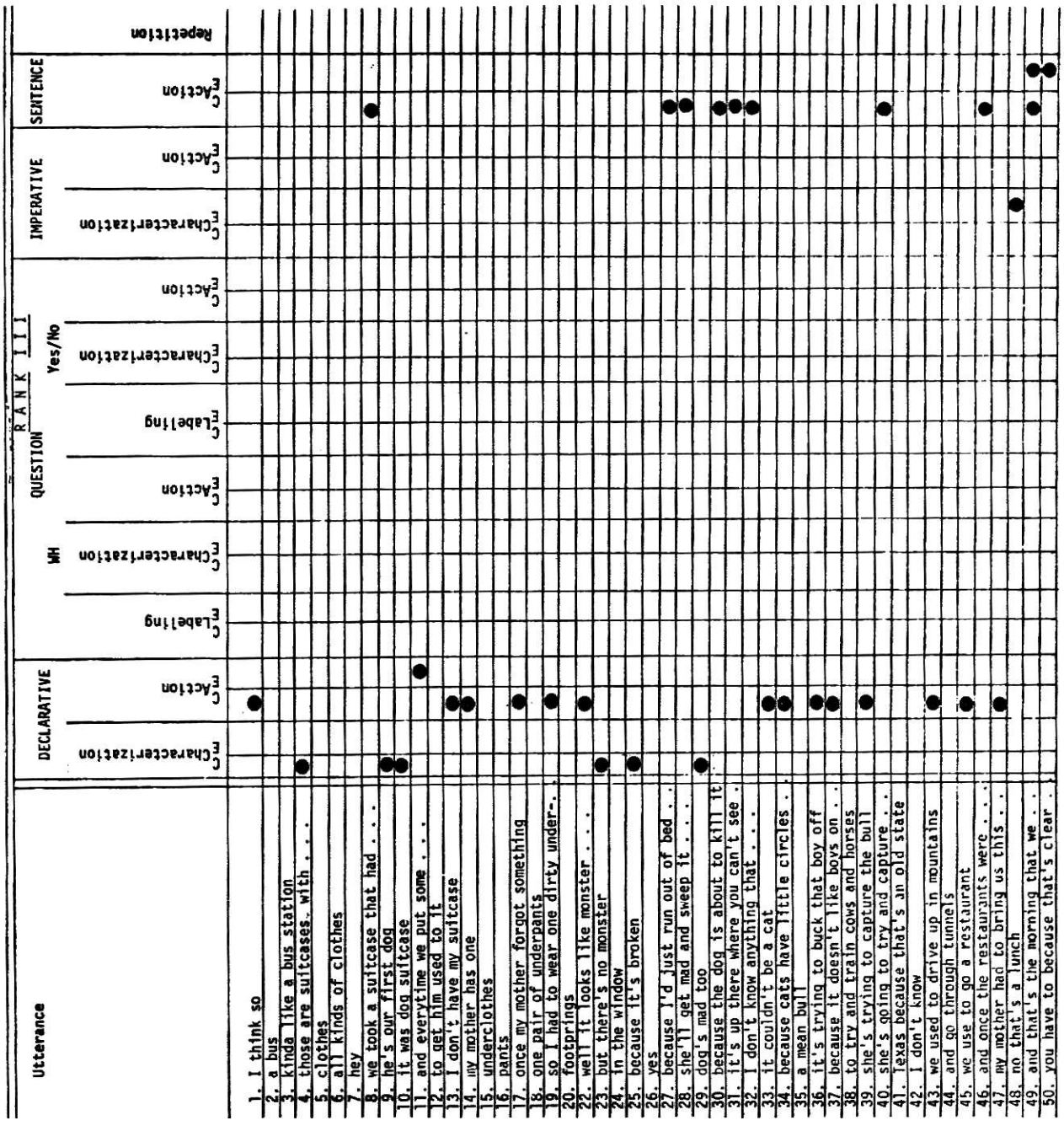


Table 5
continued

Utterance	DECLARATIVE				RANK II QUESTION							IMPERATIVE		SENTENCE			
					WH				Yes/No								
	C/E Labelling	C/E Characterization	C/E Action	C/E Labelling	C/E Characterization	C/E Action	C/E Labelling	C/E Characterization	C/E Action	C/E Characterization	C/E Action	C/E Characterization	C/E Action	C/E Action	Fragments	Stereotypes	Repetition
51. she's on top of a building																	
52. she's being big		*															
53. she's watching a airplane																	
54. more buildings																	
55. I don't know																	
56. she could see whatever happens . .																	
57. looks kinda like Minnesota																	
58. those kids are getting a check up																	
59. it is just a room																	
60. a nurse																	
61. doctor																	
62. police																	
63. he's suppose to be at the police . .																	
64. a hospital																	
65. she has a broken arm																	
66. I think that's a shot																	
67. just do																	
68. I'm a tomboy but I don't get those																	
69. her shoe's unbuckled																	
70. I think it's broken																	
71. it's torn																	
72. maybe it was fun playing		●															
73. but they sure hurted themselves																	
74. their mother																	
75. they weren't playing at a hospital																	
76. like they took a knife																	
77. and just was being careful and														●			
78. they just ctu theirselves																	
79. by playing															●		
80. all I do is fall														●			
81. I get skin knees																	
82. but		●															
83. doesn't hurt very much																	
84. or she's just trying to hold a book																	
85. with one hand															●		
86. a little thing that you can ride																	
87. you can sit on it																	
88. only it has wheels																	
89. ambulance																	
90. do you believe																	
91. the firemen thought there was a . .																	
92. all it was was just																	
93. a fireplace burning														●			
94. the monkey up there letting the . .																	
95. or is the kitty letting the . . .																	
96. he's walking along there																	
97. the boy's picking up the little. .																	
98. he's petting the turtle																	
99. Mr. Greenjeans had him																	
100. the dancing bear isn't a panda																	

Table 6
Eve's Language Sample Classified by
Dever and Bauman's Rank III (1971)
Scale of Clausal Development (SCD)



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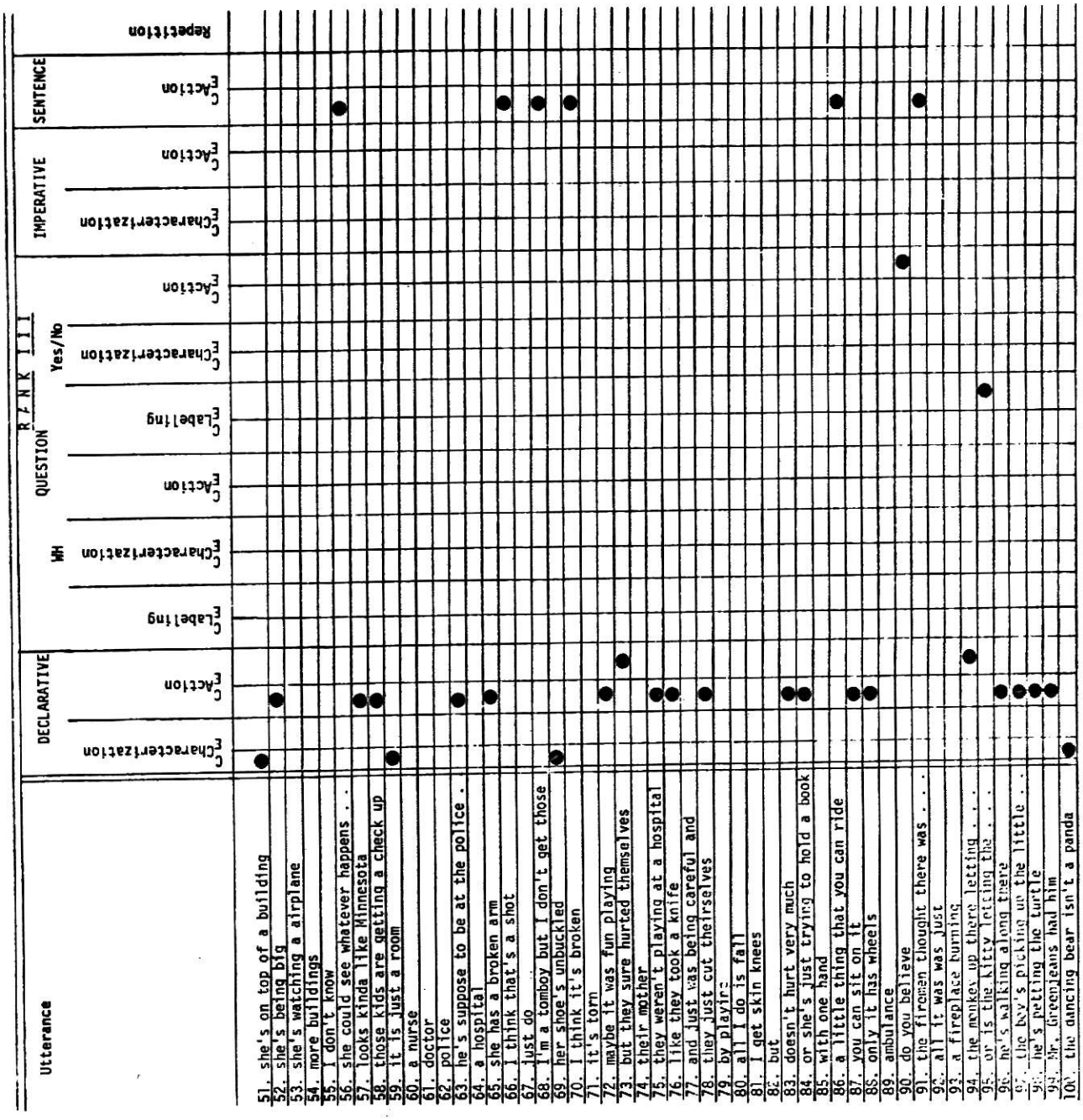
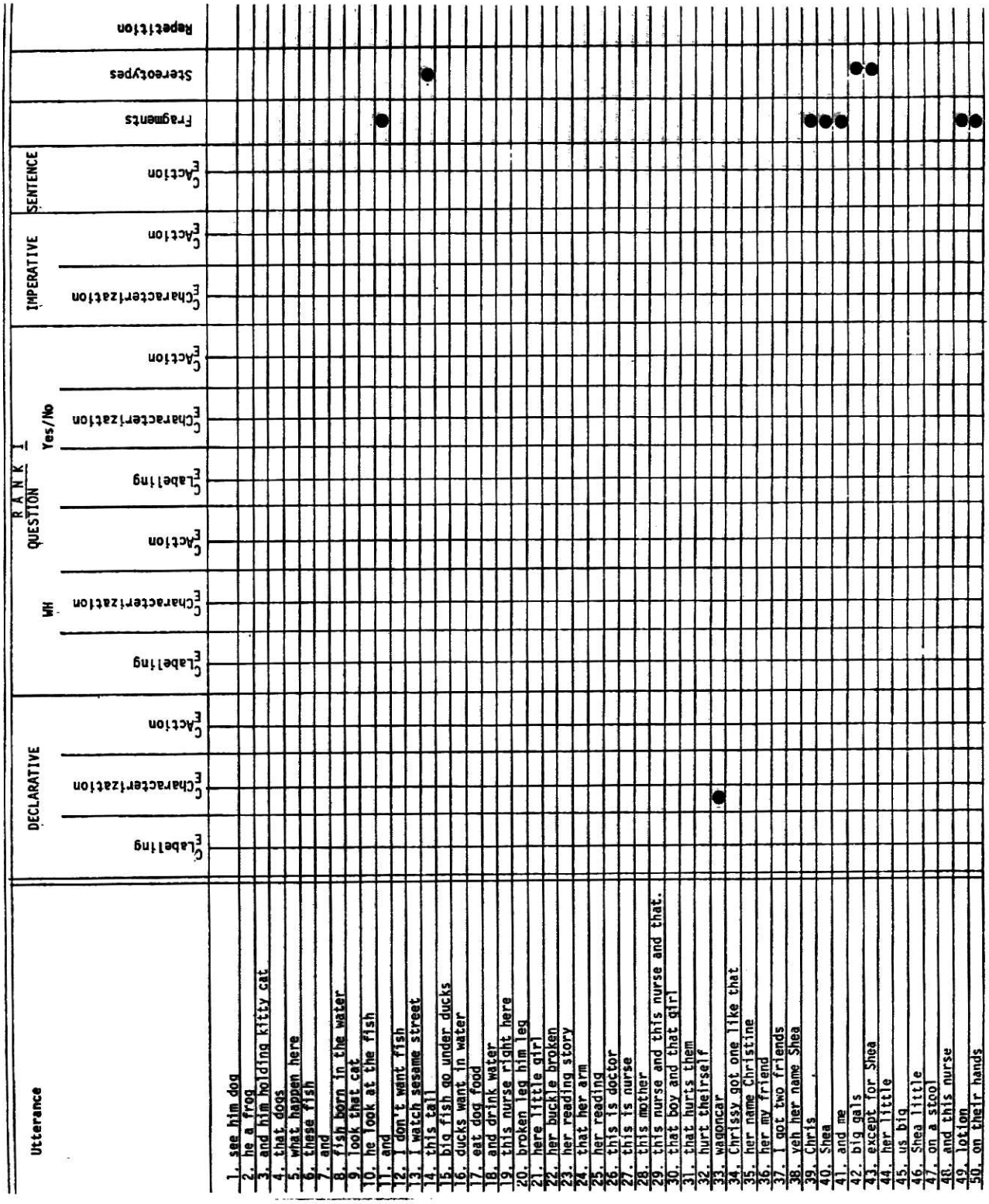


Table 7
Sara's Language Sample Classified by Dever and Bauman's Rank I (1971) Scale of Clausal Development (SCD)



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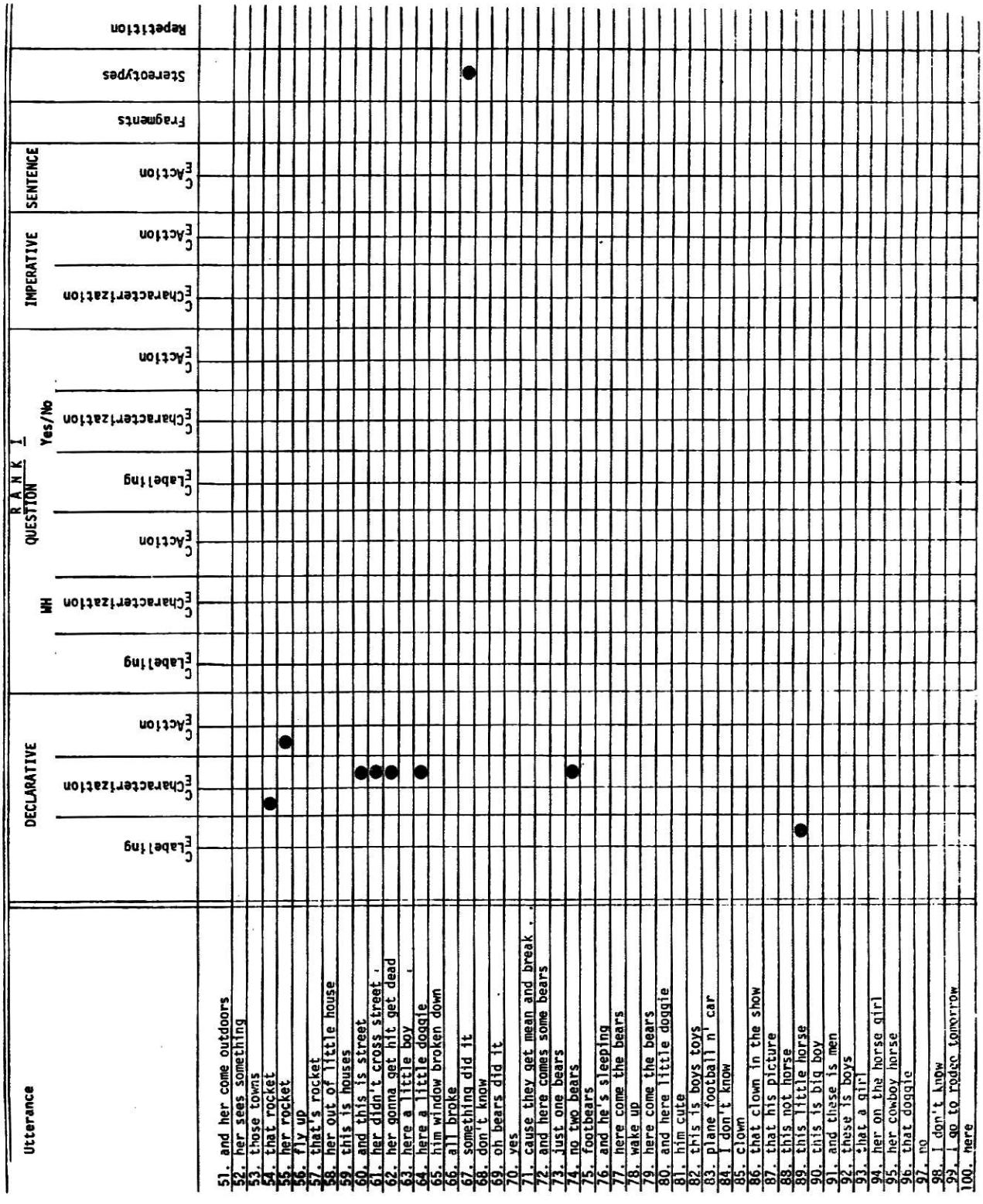

Utterance	DECLARATIVE				WH QUESTION				RANK 1 Yes/No				IMPERATIVE			SENTENCE			
	Labeling	Characterization	Action		Labeling	Characterization	Action		Labeling	Characterization	Action		Characterization	Action		Action	Fragments	Stereotypes	Repetition
51. and her come outdoors																			
52. her sees something																			
53. those towns																			
54. that rocket		●																	
55. her rocket			●																
56. fly up																			
57. that's rocket																			
58. her out of little house																			
59. this is houses																			
60. and this is street		●																	
61. her didn't cross street		●																	
62. her gonna get hit get dead		●																	
63. here a little boy																			
64. here a little doggie		●																	
65. him window broken down																			
66. all broke																			
67. something did it																	●		
68. don't know																			
69. oh bears did it																			
70. yes																			
71. cause they get mean and break																			
72. and here comes some bears																			
73. just one bears																			
74. no two bears		●																	
75. footbears																			
76. and he's sleeping																			
77. here come the bears																			
78. wake up																			
79. here come the bears																			
80. and here little doggie																			
81. him cute																			
82. this is boys toys																			
83. plane football n' car																			
84. I don't know																			
85. clown																			
86. that clown in the show																			
87. that his picture																			
88. this not horse																			
89. this little horse			●																
90. this is big boy																			
91. and these is men																			
92. these is boys																			
93. that a girl																			
94. her on the horse girl																			
95. her cowboy horse																			
96. that doggie																			
97. no																			
98. I don't know																			
99. I go to rodeo tomorrow																			
100. here																			

Table 8
Sara's Language Sample Classified by
Dever and Bauman's Rank II (1971)
Scale of Clausal Development (SCD)

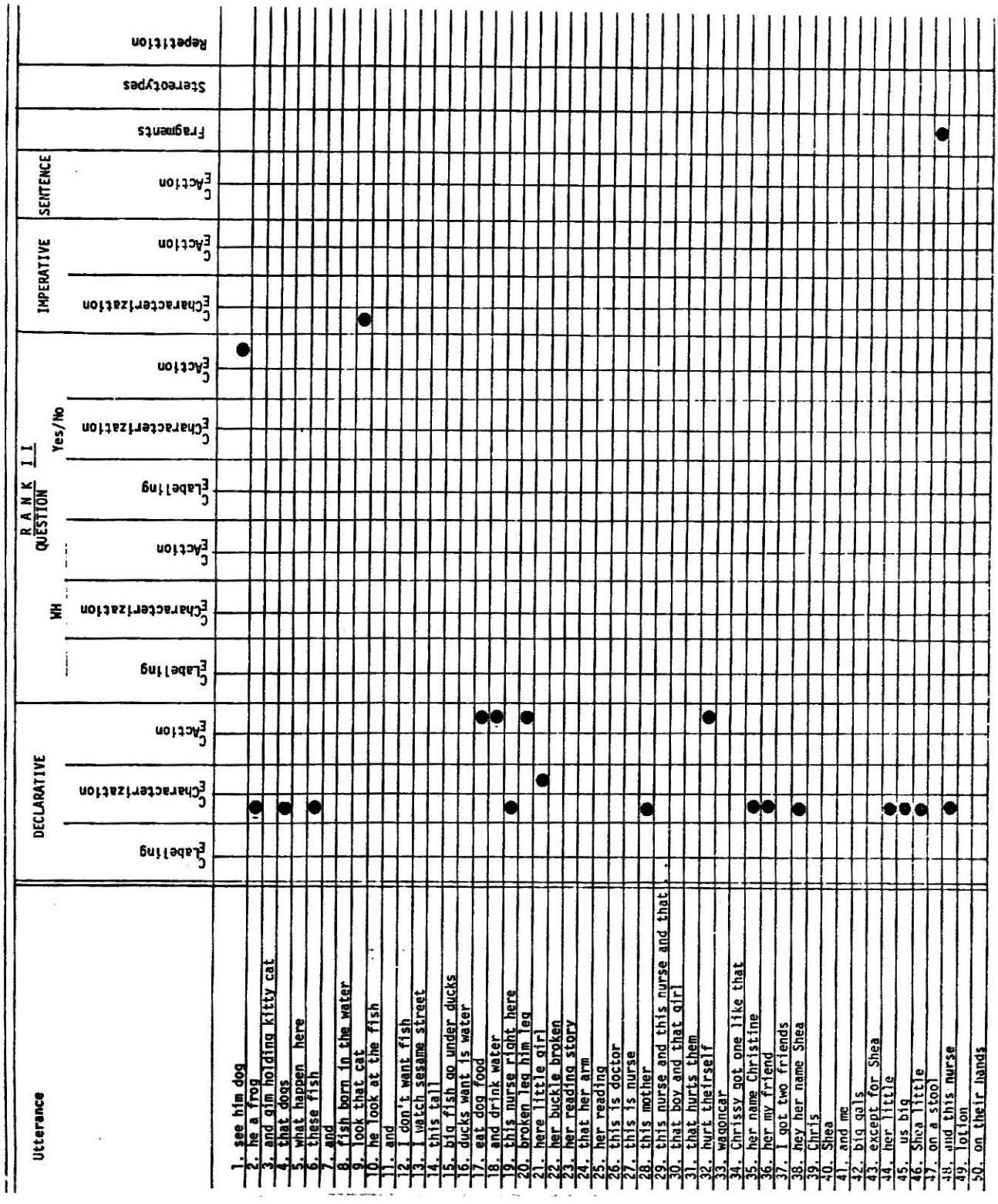

Table 8
continued

Utterance	DECLARATIVE			RANK II QUESTION WH				Yes/No			IMPERATIVE		SENTENCE			
	Labelling	Characterization	Action	Labelling	Characterization	Action	Labelling	Characterization	Action	Characterization	Action	Action	Fragment	Stereotypes	Repetition
51. and her come outdoors															
52. her sees something															
53. those towns		●													
54. that rocket		●													
55. her rocket															
56. fly up															
57. that's rocket															
58. her out of little house															
59. this is houses															
60. and this is street															
61. her didn't cross street															
62. her gonna get hit get dead															
63. here a little boy		●													
64. here a little doggie		●													
65. him window broken down		●													
66. all broke															
67. something did it															
68. don't know			●												
69. oh bears did it															
70. yes															
71. cause they get mean and break															
72. and here comes some bears															
73. just one bears															
74. no two bears															
75. footbears															
76. and he's sleeping															
77. here come the bears												●			
78. wake up															
79. here come the bears												●			
80. and here little doggie															
81. him cute										●					
82. this is boys toys										●					
83. plane football n' car															
84. I don't know															
85. clown															
86. that clown in the show		●													
87. that his picture		●													
88. this not horse		●													
89. this little horse															
90. this is big boy															
91. and these is men															
92. these is boys															
93. that a girl		●													
94. her on the horse girl		●													
95. her cowboy horse		●													
96. that doggie		●													
97. no															
98. I don't know															
99. I go to rodeo tomorrow															
100. here															

Table 9
Sara's Language Sample Classified by
Dever and Bauman's Rank III (1971)
Scale of Clausal Development (SCD)

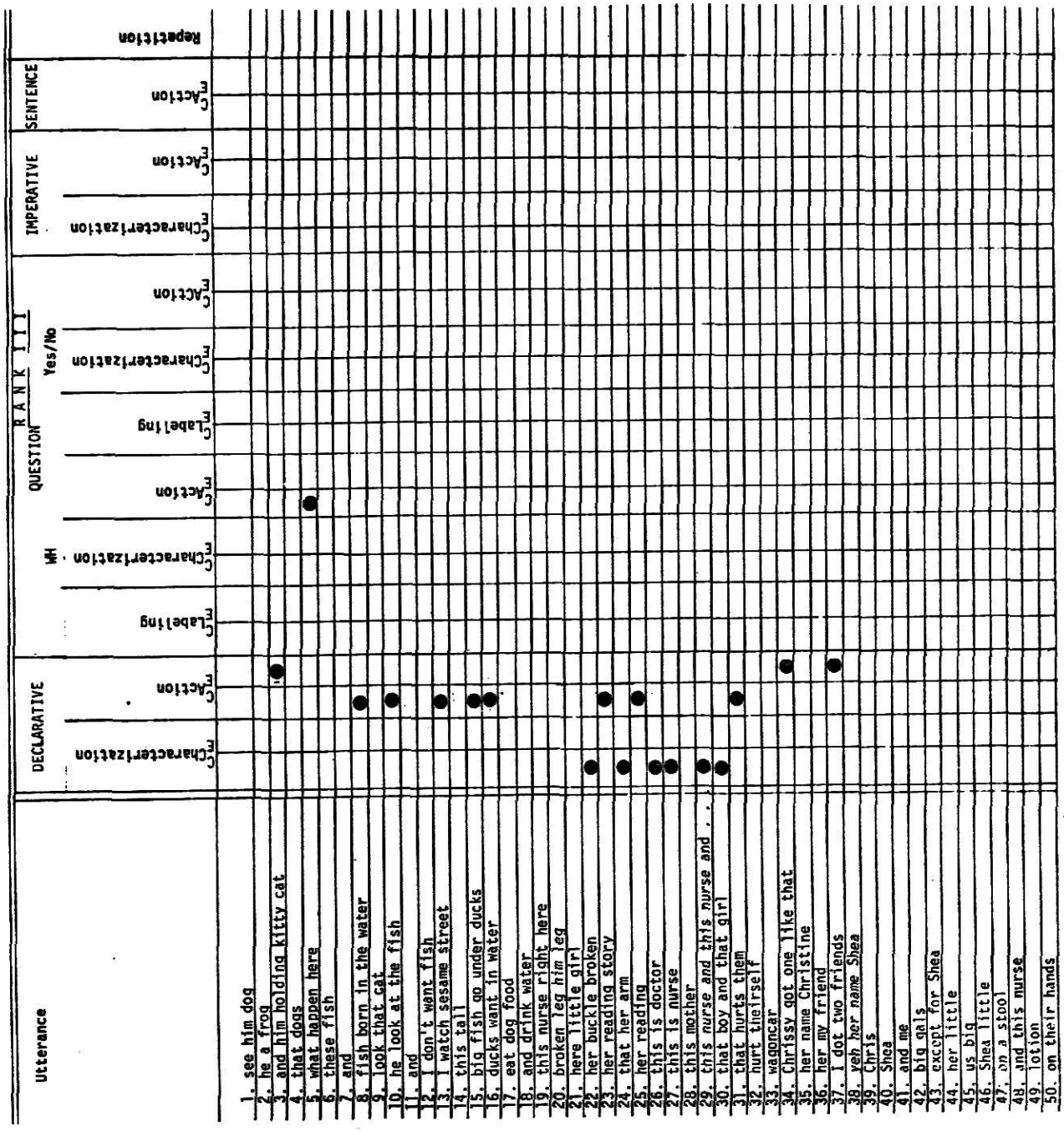

Table 9
continued

Utterances	DECLARATIVE C_ECharacterization	DECLARATIVE C_EAction	QUESTION WH C_ELabeling	QUESTION WH C_ECharacterization	QUESTION WH C_EAction	QUESTION Yes/No C_ELabeling	QUESTION Yes/No C_ECharacterization	QUESTION Yes/No C_EAction	IMPERATIVE C_ECharacterization	IMPERATIVE C_EAction	SENTENCE C_EAction	Repetition
51. and her come outdoors		●										
52. her sees something		●										
53. those towns												
54. that rocket												
55. her rocket												
56. fly up												
57. that's rocket	●											
58. her out of little house		●										
59. this is houses	●											
60. and this is street	●											
61. her didn't cross street		●										
62. her gonna get hit get dead												
63. here a little boy												
64. here a little doggie												
65. him window broken down												
66. all broke												
67. something did it		●										
68. don't know												
69. oh bears did it		●										
70. yes												
71. cause they get mean and break in . .											●	
72. and here comes some bears		●										
73. just one bears												
74. no two bears												
75. footbears												
76. and he's sleeping		●										
77. here come the bears												
78. wake up												
79. here come the bears												
80. and here little doggie												
81. him cute												
82. this is boys toys	●											
83. plane football n' car												
84. I don't know		●										
85. clown												
86. that clown in the show												
87. that his picture												
88. this not horse												
89. this little horse												
90. this is big boy	●											
91. and these is men	●											
92. these is boys	●											
93. that a girl												
94. her on the horse girl												
95. her cowboy horse												
96. that doggie												
97. no												
98. I don't know		●										
99. I go to rodeo tomorrow		●										
100. here												

RANK III

Analysis showed a heavy concentration of utterances classified in rank II, while only a few utterances occupied ranks I and III. Some scoring appeared for the elipsed-action utterances of rank II while rank III held a sizable number of completed-action utterances. As in Eve's sample, Sara uttered few Question and Imperative clauses and only one utterance under the Sentence classification.

The SCD procedure suggested areas where clause development between ranks would be enhanced for both subjects. Failure to score under certain clause type classifications probably did not show a failure of the SCD procedure, but rather a lack of such utterances in the corpora. The isolated passive construction which occurred in Sara's sample was not enough to indicate the presence of such constructions in her overall speech (rank IV was not shown as, with the exception of one utterance, no utterances scored in this rank). The SCD adequately achieved it's purpose in classification of utterances and certainly extends much further than the 17 to 40 month range indicated by Dever and Bauman (1971).

Engler, et al., (1971) was the most complex of the four procedures to apply and evaluate. Actually a two-part procedure, only the first part of the procedure is represented in tabular form (Tables 10 and 11). This analysis presented an in-depth classification of possible verbs used by speakers of English. Extensive study of

Table 10
Eve's Language Sample Classified by Engler, Hannah, and Longhursts' (1971) Linguistic Analysis of Speech Samples

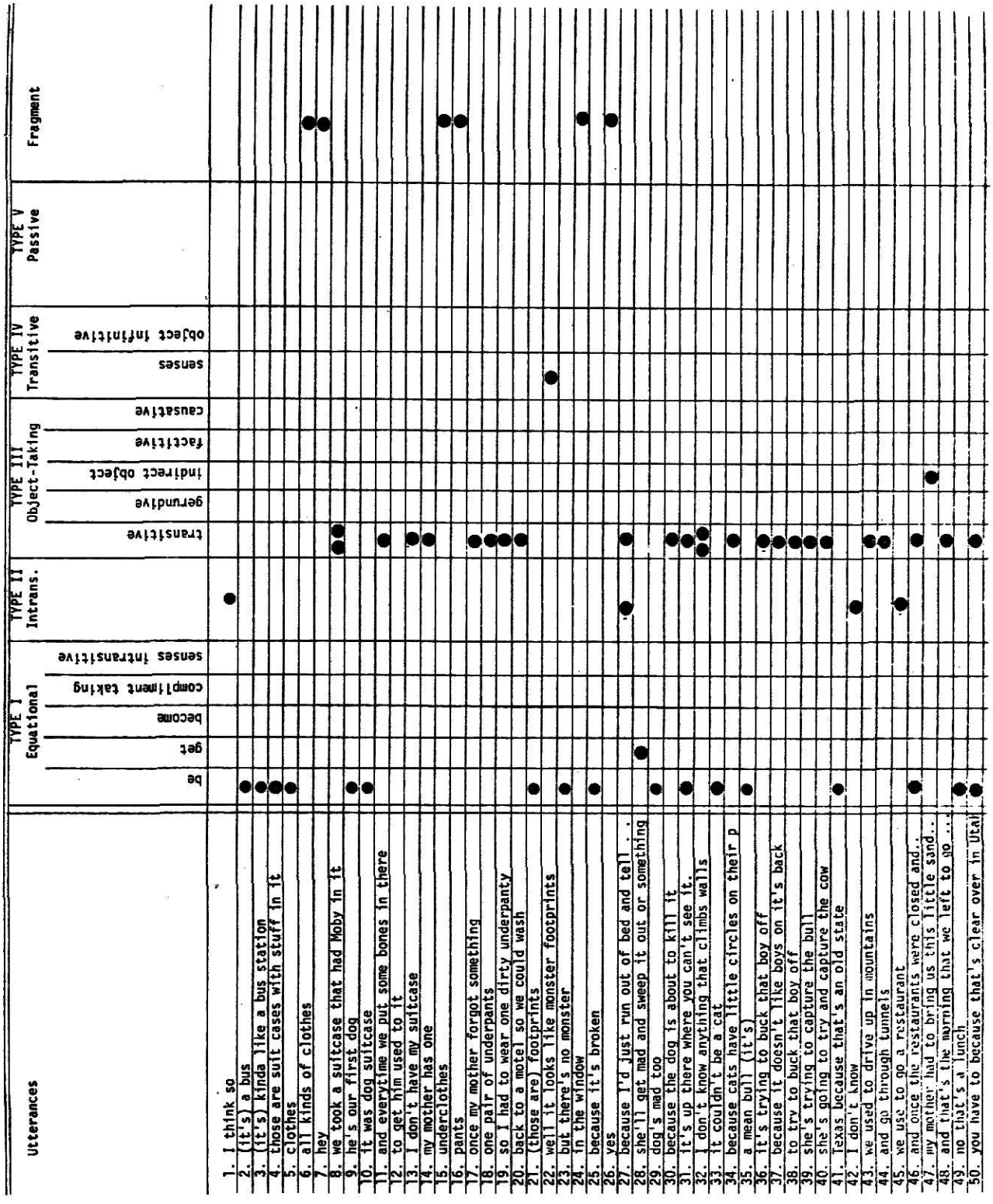

Table 10
continued

Utterance	TYPE I Equational: be	get	become	complement taking	senses intransitive	TYPE II Intrans.	TYPE III Object-Taking: transitive	gerundive	indirect object	factitive	causative	TYPE IV Transitive: senses	object infinitive	TYPE V Passive	Fragment
51. she's on top of a building	●														
52. she's being big	●														
53. she's watching a airplane							●								
54. more buildings															●
55. I don't know						●									
56. she could see whatever happens down there							●								
57. looks kinda like Minnesota				●											
58. those kids are getting a check up							●								
59. it is just a room	●														
60. a nurse	●														
61. doctor	●														
62. police	●														
63. he's suppose to be at the police office	●														
64. a hospital	●														
65. she has a broken arm							●								
66. I think that's a shot						●									
67. just do							●								
68. I'm a tomboy but I don't get those		●													
69. her shoe's unbuckled	●														
70. I think it's broken	●						●								
71. it's torn	●														
72. maybe it was fun playing	●														
73. but they sure hurted themselves							●								
74. their mother	●														
75. they weren't playing at a hospital						●									
76. like they took a knife							●								
77. and just was being careful and	●														
78. they just cut theirselves							●								
79. by playing								●							
80. all I do is fall	●														
81. I get skin knees		●													
82. but															●
83. doesn't hurt very much						●									
84. or she's just trying to hold a book							●								
85. with one hand								●							
86. a little thing that you can ride	●														
87. you can sit on it						●									
88. only it has wheels on it							●								
89. ambulance	●														
90. do you believe						●									
91. the firemen thought there was a fire and...	●						●								
92. all it was was just	●														
93. a fireplace burning							●								
94. the monkey up there letting the kitty cat...	●						●								
95. or is the kitty letting the monkey out of...							●								
96. he's walking along there						●									
97. the boy's picking up the little panda bear								●							
98. he's petting the turtle								●							
99. Mr. Greenjeans had him											●				
100. the dancing bear isn't a panda		●													

Table 11
Sara's Language Sample Classified by Engler, Hannah, and Longhursts' (1971) Linguistic Analysis of Speech Samples

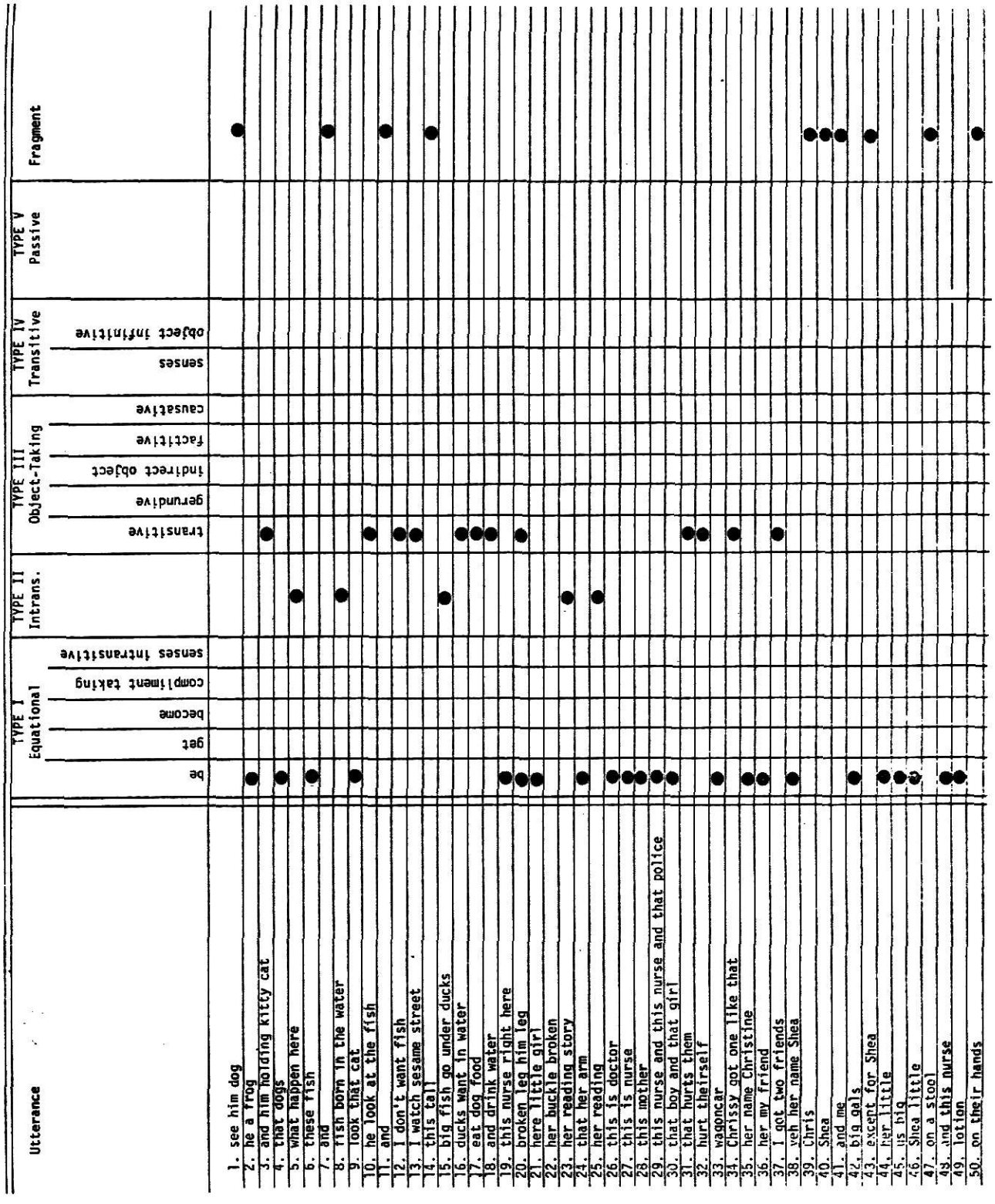

Table 11
continued

Utterance	TYPE I Equational: be	get	become	complement taking	senses intransitive	TYPE II Intrans.	TYPE III Object-Taking: transitive	gerundive	indirect object	factitive	causative	TYPE IV Transitive: senses	object infinitive	TYPE V Passive	Fragment
51. and her come outdoors						●									
52. her sees something							●								
53. those towns	●														
54. that rocket	●														
55. her rocket															●
56. fly up															●
57. that's rocket	●														
58. her out of little house	●														
59. this is houses	●														
60. and this is street	●														
61. her didn't cross street							●								
62. her gonna get hit get dead		●												●	
63. here a little boy	●														
64. here a little doggie	●														
65. him window broken down	●														
66. all broke															●
67. something did it							●								
68. don't know															
69. oh bears did it						●	●								
70. yes							●								
71. cause they get mean and break in window		●													
72. and here comes some bears						●									
73. just one bears															●
74. no two bears															●
75. footbears	●														
76. and he's sleeping						●									
77. here come the bears						●									
78. wake up						●									
79. here come the bears						●									
80. and here little doggie	●														
81. him cute	●														
82. this is toys toys	●														
83. plane football n' car	●														
84. I don't know						●									
85. clown	●														
86. that clown in the show	●														
87. that his picture	●														
88. this not horse	●														
89. this little horse	●														
90. this is big boy	●														
91. and those is men	●														
92. these is boys	●														
93. that a girl	●														
94. her on the horse girl	●														
95. her cowboy horse	●														
96. that doggie	●														●
97. no															
98. I don't know						●									
99. I go to rodeo tomorrow						●									
100. here															●

verb and verb forms was necessary for the scorer to utilize this procedure.

The elicitation methodology and instructions for segmenting the corpora in Engler, et al., was explicit and sufficient. This was the only procedure of the four that recognized the importance connected with the initial collection of the language samples to be analyzed. Elicitation and segmentation procedures followed well established linguistic tradition. An inter-scorer reliability of .80 for Eve and .78 for Sara was achieved, which reinforced the examiner's subjective judgements of the difficulty of applying this procedure.

As in the SCD by Dever and Bauman, Engler, et al., (1971) allowed the context to be considered as an essential part of the utterance. This meant that utterances like 'a bus' could be classified according to the corresponding adult-like utterance 'this is a bus' instead of as a fragment.

Although different arrays were anticipated, as can be seen in Tables 10 and 11, both subjects showed essentially identical verb usage patterns. Both subjects production was limited to the equational 'be' verbs, intransitives, and object-taking transitives. Only Eve showed any evidence of verb development beyond these levels. It appears the language of these two subjects was not advanced enough to be measured adequately by this procedure. We

would predict from our experience with the measure that different arrays would appear as language development progressed.

The second part of this procedure deals with conventions for features of arrangement, or more specifically; (1) word order, (2) inflection (grammatical forms), (3) concord (subject-verb agreement), (4) government (case filler in correct case slot), (5) the use of function words (use of articles with nouns, the use of "of" to indicate possessive, etc.), and (6) intonation (pitch, stress, and juncture). These features were not expressed in tabular form.

The samples from both subjects showed development in features of inflection, concord and government. Eve's sample provided only rare instances where she produced an ungrammatical form and it could be generally accepted that these features had been incorporated into her rule system for English production. On the other hand, Sara's sample provided frequent violations of the rules governing these features and it became apparent that she had not internalized the rules governing these features.

Eve's intonation patterns closely followed those of adult grammar. Sara's intonation appeared in an extremely exaggerated form. Stress was often misplaced causing incomprehensibility of the utterance. Her pitch peaked or ebbed but never held a consistent form. Juncture was

also a factor in utterance comprehensibility. Function words were used by both subjects, but, Eve's usage was frequently enriched and expanded by usage of such words while Sara's grammar resembled more closely the Pivot-X type of construction (Braine, 1963).

While the Engler, et al., procedure of classifying utterances did not discriminate between the two subjects the feature analysis proved to be particularly discriminative. None of the other procedures incorporated an observation of these features of arrangement in the detail used by Engler, et al.

Lee and Canter's (1971) DSS procedure was found to be the most simple of the four procedures to apply. Analysis was pre-cast into the tabular form and scoring instructions were, for the most part, clear and sufficient. Inter-scorer reliability for DSS was .82 for Eve and .79 for Sara. In most instances scoring discrepencies were due to arbitrary interpretations which allowed the scorers to score the utterance differently. No background information outside of the DSS instructions was found to be necessary to apply the procedure.

Some disagreement was found between Lee's sentence and the definition of utterance used in the present study. Of the one-hundred utterances collected from each child, only 69 of Eve's utterances (Table 12) and 32 of Sara's (Table 13) were scorable in the DSS procedure. This may

Table 12
Eve's Language Sample Classified by Lee and Canter's (1971) Developmental Sentence Scoring (DSS)

Utterances (Sentence)	Indefinite Pronoun	Personal Pronoun	Primary Verb	Secondary Verb	Negative	Conjunction	Interrogative Reversal	WH Question	Sentence Point	Total
1. I think so		1	1						1	3
2. a bus										
3. kinda like a bus station										
4. those are suitcases with stuff...		4	3							7
5. clothes										
6. all kinds of clothes										
7. hey										
8. we took a suitcase that had Moby.		6 1	3	3					1	14
9. he's our first dog	6	2 3	1						1	13
10. it was dog suitcase	1		3							4
11. and everytime we put some bones..	2 1	3	1							7
12. to get him used to it										
13. I don't have my suitcase		1 1	1		2				1	6
14. my mother has one	2	1	1			4			1	5
15. underclothes						4				12
16. pants										
17. once my mother forgot something	3	1	3						1	8
18. one pair of underpants										
19. so I had to wear one dirty		1	3	4		4			1	13
20. back to a motel so we could wash		3	5			4				12
21. footprints										
22. well it looks like monster foot..	1		3						1	5
23. but there's no monster			1		4				1	6
24. in the window										
25. because it's broken	1		1	3		3			1	9
26. yes										
27. because I'd just run out of bed..		1 1	5 1			3 1			1	13
28. she'll get mad and sweep it out..	1 3	2	4 1	1		5 1			1	19
29. dog's mad too										1
30. because the dog is about to kill.	1		1	4		3			1	10
31. it's up there where you can't ...	1 1	1	1 1		2				1	8
32. I don't know anything that clim..	5 1	6	4 3		2				1	22
33. it couldn't be a cat	1		5			4			1	11
34. because cats have little circles..		3	1			3			1	8
35. a mean bull										
36. it's trying to buck that boy off	1 1		2	2					1	7
37. because it doesn't like boys on..	1 1		5		2	3			1	13
38. to try and train cows and horses										
39. she's trying to capture the bull		2	2	4					1	9
40. she's going to try and capture...		2	2	4 1					1	10
41. Texas because that's an old state	1		1			3			1	6
42. I don't know		1	4		2				1	8
43. we used to drive up in mountains		3	3	4						6
44. and go through tunnels										
45. we use to go a restaurant		3	4	4						11
46. and once the restaurants were...		3	3						1	7
47. my mother had to bring us this...			3	4		1				8
48. no that's a lunch	1	1 2	3	4					1	12
49. and that's the morning that we...	1		1							3
50. you have to because that's clear.	1	3	1 3	4 4		6				22

Table 12
continued

Utterances (Sentence)	Indefinite Pronoun	Personal Pronoun	Primary Verb	Secondary Verb	Negative	Conjunction	Interrogative Reversal	WH Question	Sentence Point	Total
51. she's on top of a building		2	/						/	4
52. she's being big		2	/	3					/	7
53. she's watching a airplane		2	/	3					/	7
54. more buildings		/	4						/	6
55. I don't know										
56. she could see whatever happen										
57. looks kinda like Minnesota										
58. those kids are getting a. .		4	3						/	8
59. it is just a room	/		/ 3						/	5
60. a nurse										
61. a doctor										
62. police		2	/	/					/	5
63. he's suppose to be at the. .										
64. a hospital										
65. she has a broken arm		2	3						/	6
66. I think that's a shot	/	/	/ / .						/	5
67. just do		/ /	3 4			2			/	12
68. I'm a tomboy but I don't get.		2	/						/	4
69. her shoe's unbuckled	/	/	/ /	3					/	8
70. I think it's broken	/		/						/	3
71. it's torn	/		3						/	5
72. maybe it was fun playing	/	3 5	3			2			/	13
73. but they sure hurted them. .										
74. their mother		3	3		4				/	11
75. they weren't playing at a . .		3	3							6
76. like they took a knife										
77. and just was being care. . .		3 5	/							9
78. they just cut theirselves										
79. by playing		/	4							5
80. all I do is fall		/	/							2
81. I get skin knees		/	/							2
82. but						2				2
83. doesn't hurt very much		2	2			5			/	10
84. or she's just trying to hold .										
85. with one hand										
86. a little thing that you can .		/	4						/	6
87. you can sit on it	/		3						/	5
88. only it has wheels										
89. ambulance		/	/				3		/	6
90. do you believe					4				/	11
91. the firemen thought there. . .			3 3						/	7
92. all it was was just	/		3 5							
93. a fireplace burning										
94. the monkey up there letting.			2			5	2		/	10
95. or is the kitty letting . . .										
96. he's walking along there		2	2						/	5
97. the boy's picking up the. .			2						/	3
98. he's petting the turtle		2	2						/	5
99. Mr. Greenjeans had him			3						/	4
100. the dancing bear isn't a . .			3		3				/	7

Table 13
Sara's Language Sample Classified by
Lee and Canters' (1971)
Developmental Sentence Scoring (DSS)

Utterance (Sentence)	Indefinite Pronoun	Personal Pronoun	Primary Verb	Secondary Verb	Negative	Conjunction	Interrogative Reversal	WH Question	Sentence Point	Total
1. see him dog										
2. he a frog										
3. and him holding kitty cat										
4. that dogs								1		8
5. what happen here		6	1							
6. these fish										
7. and										
8. fish born in the water										
9. look that cat										3
10. he look at the fish		2	1							
11. and										
12. I don't want fish		1	4							5
13. I watch sesame street		1	1						1	3
14. this tall										
15. big fish go under ducks			1						1	2
16. ducks want in water			1							1
17. eat dog food										
18. and dring water										
19. this nurse right here										
20. broken leg him leg										
21. here little girl										
22. her buckle broken		2		3						5
23. her reading story										
24. that her arm										
25. her reading										
26. this is doctor		1		1						2
27. this is nurse		1		1						2
28. this mother										
29. this nurse and this nurse and...										
30. that boy and that girl										
31. that hurts them	1	3	3						1	8
32. hurt theirself										
33. wagoncar										
34. Chrissy got one like that	2		3							5
35. her name Christine										
36. her my friend										
37. I got two friends										
38. yeh her name Shea										
39. Chris										
40. Shea										
41. and me										
42. big gals										
43. except for Shea										
44. her little										
45. us big										
46. Shea little										
47. on a stool										
48. and this nurse										
49. lotion										
50. on their hands										

Table 13
continued

Utterance (Sentence)	Indefinite Pronoun	Personal Pronoun	Primary Verb	Secondary Verb	Negative	Conjunction	Interrogative Reversal	WH Question	Sentence Point	Total
51. and her come outdoors		2	/							3
52. her sees something		2	3							5
53. those towns										
54. that rocket										
55. her rocket										
56. fly up		/	/							2
57. that's rocket										
58. her out of little house		2	/							3
59. this is houses	/		3							4
60. and this is street	/		3			/				5
61. her didn't cross street		2	/		4					7
62. her gonna get hit get dead		2	7							9
63. here a little boy										
64. here a little doggie										
65. him window broken down		2	3							5
66. all broke										
67. something did it		3	3							6
68. don't know			4							4
69. oh bears did it			3							5
70. yes										
71. cause they get mean and break		3	3 /			3				10
72. and here comes some bears			/			/				2
73. just one bears										
74. no two bears										
75. footbears										
76. and he's sleeping		2	2							4
77. here come the bears										
78. wake up										
79. here come the bears										
80. and here little doggie										
81. him cute										
82. this is boys toys	/		3							4
83. plane football n' car										
84. I don't know		/	4						/	6
85. that his picture										
86. that clown in the show										
87. that his picture										
88. this not horse										
89. this little horse										
90. this is big boy	/		3							4
91. and these is men		4	3							7
92. these is boys		4	3							7
93. that a girl										
94. her on the horse girl										
95. her cowboy horse										
96. that doggie										
97. no										
98. I don't know		/	4						/	6
99. I go to rodeo tomorrow		/	/							2
100. here										

indicate that Sara's development was not sufficient for the DSS procedure to be used appropriately.

Seventy-seven percent of Eve's 69 scored utterances received sentence points, while the average scores were: indefinite pronouns - 1.468; personal pronouns - 2.254; primary verbs - 2.407; secondary verbs - 3.058; negatives - 2.444; and conjunctions - 3.100. When Eve's DSS score of 9.080 was compared to Lee and Canter's (1971) normative group, she scored in the fiftieth percentile for her chronological age group. Of Sara's 32 scorable sentences, only sixteen percent received sentence points. A DSS score was not computed for Sara because DSS must be computed on 50 utterances and thus she was unscorable.

A closer look at Table 12 shows Sara with a heavy concentration toward the left-hand side (less developed) of the table while Eve's scoring scatters somewhat more, thus, indicating more advanced development. A noticeable void is in Sara's secondary verb column where she only scored once.

It was very noticeable throughout the use of DSS that the breakdown in the categories of primary and secondary verbs bore remarkable resemblance to the Engler, et al., (1971) classification of verbs. Similarily, DSS application of "sentence point" echos the Engler, et al., convention for features of arrangement. DSS does, however, fail to extend the sentence point strategy far enough to hold the

validity that the Engler, et al., method of describing features of arrangement does.

Overall DSS tended to describe the subjects' performance at a lower level than the other procedures or pre-tests indicated (e.g., Eve ranked at the 89th percentile on the PPVT). It also failed to score the sample from Sara whose Peabody language age was well within the defined age limits indicated by the procedure. Although certain utterances should have been classified in specific categories, DSS rules disallowed their classification, while, there were other ambiguous instances where one entry could be classified in more than one way. These features probably lead to the lower inter-scorer reliability.

SUMMARY AND CONCLUSIONS

The present study investigated the use of four linguistic procedures for analyzing the speech of children. None of the procedures proved to be completely explicit and sufficient. All four procedures, with the exception of DSS, would require some special training in linguistics and each uses some unique terminology, particularly the SCD by Dever and Bauman (1971) and the Engler, et al., (1971) procedure. These procedures, however, represent a much more detailed approach to the assessment of children's language than traditional methods (Kirk and Kirk, 1971; Mecham, Jex, and Jones, 1962; Johnson, Darley, and Spriestersbach, 1963).

Application of a tagmemic analysis (Dever and Bauman, 1971; Engler, et al., 1971) by slot-filler evaluation appeared to handle the two language samples in the present study most adequately. Tagmemic analysis accounted for intra-clause development in the Dever and Bauman SCD and for verb development in the Engler, et al., procedures. Because of the detailed definition of a slot that must occur before a filler may be chosen, arbitrary categories are avoided. The scorer, therefore, has little difficulty assigning the correct transformational models (Chomsky, 1957, 1966; McNeill, 1970), which were designed to describe the grammar of idealized adults. A renewed interest in basic structural linguistic concepts would prove valuable to the assessment of language development in children.

This interest should be focused on such topics as analyzing how verbs develop at six-month intervals or how the various "features of arrangement' develop, much as the Engler, et al., procedure suggests. These data may then shead light on possible remedial techniques to alleviate verb deficiencies or arrangement difficulties in language handicapped children. Dever and Bauman's SCD should also be extended to include Sentence, Discourse, etc. development as well as normative data at various age levels. Without appropriate normative data, it is difficult for a clinician to know whether a child she has examined exhibits

normal development or whether the performance deviates far enough from the norm to raise concern.

In a very real sense, the application success of these linguistic procedures depends upon the representativeness of the language sample that is obtained from the child. We know very little about the elicitation variables that may influence the quantity or quality of the obtained language sample. Variables, such as the examiner, stimulus materials, instructions, and elicitation situation, need to be investigated. Eventually, a standardized elicitation methodology must be evolved to make comparison with normative data meaningful and to allow inter-investigation comparisons of linguistic research findings.

APPENDIX A

Directions for Protocol Typing

1. Type the transcripts in the predetermined order.
2. Type only the verbalizations of the child.
3. Do not use capitals (except for proper names or for the pronoun "I"), commas, question marks, or any other forms of punctuation in preparing these transcripts. Use apostrophies, however, to indicate a contraction.
4. Some of the remarks made by the subject will be completely or partially incomprehensible. If a response is either partially or completely incomprehensible, exclude it from the transcript.
5. Interjections such as 'uh' and 'er' should be omitted except when they are used as words.
6. If the speaker starts but does not finish a word and you are quite sure what he was going to say, include the word, but place it between parentheses.
7. Include repeated words in the transcript.
8. When a number or letter is included as part of the description, type the number out (seven) and capitalize the letters (T).

APPENDIX B

Eve's Utterances Used For This Study

1. I think so
2. a bus
3. kinda like a bus station
4. those are suitcases with stuff in it
5. clothes
6. all kinds of clothes
7. hey
8. we took a suitcase that had (Corky) Moby in it.
9. he's our (last) first dog
10. it was dog suitcase
11. and everytime we put some bones in there
12. to get him used to it
13. I don't have my suitcase
14. my mother has one
15. underclothes
16. pants
17. once my mother forgot something
18. one pair of underpants
19. so I had to wear one dirty underpanties
20. back to a motel so we could wash
21. footprints
22. well it looks like monster footprints
23. but there's no monster
24. in the window
25. because it's broken
26. yes
27. because I'd just run out of bed and tell my mother
28. she'll get man and sweep it out or something
29. dog's mad too
30. because the dog is about to kill it
31. it's up there where you can't see it
32. (I don't know) I don't know anything that climbs walls
33. it couldn't be a cat
34. because cats have little circles on their paws
35. a mean bull
36. it's trying to buck that boy off
37. because it doesn't like boys on it's back
38. to try and train cows and horses
39. she's trying to capture the bull
40. she's going to try and capture the cow
41. Texas because that's an old state
42. I don't know
43. we used to drive up in mountains
44. and go through tunnels
45. we use to go a restaurant

and once the restaurants were closed and we had to eat
my mother had to bring us this little sandwich
no that's a lunch
and that's the morning that we left to go to see grandma
you have to because that's clear over in Utah
she's on top of a building
she's being big
she's watching a airplane
I don't know
more buildings
she could see whatever happens down there
(looks) looks kinda like Minnesota
those kids are getting (a) a (check) check up
it is just a room
a nurse
doctor
police
he's suppose to be (at) at the police office
a (doctor) hospital
she has a broken arm
I think that's a shot
just do
I'm a tomboy but I don't get those
her shoe's unbuckled
I think it's broken
it's torn
maybe it was fun playing
but they sure hurted themselves
their mother
they weren't playing at a hospital
like they took a knife
and just was being careful and
they just cut theirselves
by playing
all I do is fall
I get skin knees
but
doesn't hurt very much
or she's just trying to hold a book
with one hand
a little thing that you can ride
you can sit on it.
only it has wheels
ambulance
do you believe
the firemen thought there was a fire and there wasn't
all it was was just
a fireplace burning
the monkey up there letting the kitty out of the cage
or is the kitty letting the monkey out of the cage

96. he's walking along there
97. the boy's picking up the little panda bear
98. he's petting the turtle
99. Mr. Greenjeans had him
100. the dancing bear isn't a panda

APPENDIX C

Sara's Utterances Used For This Study

1. see him dog
2. he a frog
3. and him holding kitty cat
4. that dogs
5. what happen here
6. these fish
7. and
8. fish born in the water
9. look that cat
10. he look at the fish
11. and
12. I don't want fish
13. I watch sesame street
14. this tall
15. big fish go under ducks
16. ducks want in water
17. eat dog food
18. and drink water
19. this nurse right here
20. broken leg him leg
21. here little girl
22. her buckle broken
23. her reading story
24. that her arm
25. her reading
26. this is doctor
27. this is nurse
28. this mother
29. this nurse and this nurse and that police
30. that boy and that girl
31. that hurts them
32. hurt theirself
33. wagoncar
34. Chrissy got one like that
35. her name Christine
36. her my friend
37. I got two friends
38. yeh her name Shea
39. Chris
40. Shea
41. and me
42. big gals
43. except for Shea
44. her little
45. us big

46. Shea little
47. on a stool
48. and this nurse
49. lotion
50. on their hands
51. and her come outdoors
52. her sees something
53. those towns
54. that rocket
55. her rocket
56. (goes) fly up
57. that's rocket
58. her out of little house
59. this is houses
60. and this is street
61. her didn't cross street
62. her gonna get hit get dead
63. here a little boy
64. here a little doggie
65. him window broken down
66. all broke
67. something did it.
68. don't know
69. oh bears did it
70. yes
71. cause they get mean and break in window
72. and here comes some bears
73. just one bears
74. no two bears
75. footbears
76. and he's sleeping
77. here come the bears
78. wake up
79. here come the bears
80. and here little doggie
81. him cute
82. this is boys toys
83. plane (ball) football n' car
84. I don't know
85. clown
86. that clown in the show
87. that his picture
88. this not horse
89. this little horse
90. this is big boy
91. and these is men
92. these is boys
93. that a girl
94. her on the horse girl
95. her cowboy horse

96. that doggie
97. no
98. I don't know
99. I go to rodeo tomorrow
100. here

REFERENCES

Barlow, M. C., and Miner, L. E. Temporal reliability of length-complexity index. Journal of Communication Disorders, 1969, 2, 224-240.

Braine, M. D. The ontogeny of English phrase structure: The first phase. Language, 1963, 39, 1-13.

Brown, R. and Bellugi, U. Three processes in the child's acquisition of syntax. In E. Lenneberg (Ed.), New Directions in the Study of Language. Cambridge: MIT Press, 1964, 131-161.

Brown, R. and Fraser, C. The acquisition of syntax. In Bellugi and Brown (Eds.), The Acquisition of Language, Monographs of the Society for Research in Child Development, 1964, 29, 43-79.

Chomsky, N. Aspects of the theory of syntax. Cambridge: MIT Press, 1965.

Chomsky, N. Syntactic structures. The Hague: Morton and Co., 1957.

Cowan, P. A., Weaver, J., Hoddinott, B. A., and Klein, J. Mean length of spoken response as a function of stimulus, experimenter, and subject. Child Development, 1967, 3, 191-203.

Dever, R. and Bauman, P. Scale of clausal development. Unpublished manuscript, Indiana University, 1971.

Elson, B. and Pickett, V. An introduction to morphology and syntax. Summer Institute of Linguistics, 1965.

Engler, L., Hannah, E., and Longhurst, T. Linguistic analysis of speech samples: A practical guide for clinicians. Unpublished manuscript. Kansas State University, 1971.

Griffith, J. and Miner, L. E. Length-complexity index reliability and size of language sample. Journal of Communication Disorders, 1969, 2, 264-267.

Hockett, C. F. A course in modern linguistics. New York: MacMillan Co., 1958.

Johnson, W., Darley, F. L., and Sprietersbach, D. C. Diagnostic methods in speech pathology. New York: Harper and Row, Publ., 1963, 160-187.

Kirk, S. A. and Kirk, W. D. Psycholinguistic learning disabilities: Diagnosis and remediation. Chicago: University of Illinois Press, 1971.

Lee, L. Developmental sentence types. Journal of Speech and Hearing Disorders, 1966, 31, 311-330.

Lee. L. and Canter, S. Developmental sentence scoring. Journal of Speech and Hearing Disorders, 1971, 36, 315-340.

Longhurst, T. Effects of communication disorder on speaker and listener behavior. Unpublished doctoral dissertation, University of Minnesota, 1971.

McNeill, D. The acquisition of language: The study of developmental psycholinguistics. New York: Harper and Row, 1970.

McNeill, D. Developmental Psycholinguistics. In Smith and Miller (Eds), The Genesis of Language. Cambridge: MIT Press, 1966, 15-83.

Mecham, M. J., Jex, L. I., and Jones, J. D. Utah test of language development. Salt Lake City, Utah: Woodruff Printing Co., 1967.

Miner, L. E. Scoring procedures for the length-complexity index: A preliminary report. Journal of Communication Disorders, 1969, 2, 224-240.

Siegel, G. M. Interexaminer reliability for mean length of response. Journal of Speech and Hearing Research, 1962, 5, 91-94.

Siegel, G. M. Appendix H: Prototypes for instructions to typists. Monograph 10. Journal of Speech and Hearing Disorders, 1963, 10.

Templin, M. Certain lnaguage skills in children. Minneapolis: University of Minnesota Press, 1957.

LINGUISTIC ANALYSIS OF CHILDREN'S SPEECH: A COMPARISON OF FOUR PROCEDURES

by

Trudy Ann Marie Schrandt

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ABSTRACT

The purpose of this study was to investigate the use of four currently used linguistic procedures for assessing the development of a child's language. This research was justified by the critical need of the language researcher and clinician for an accurate procedure for assessing a child's language performance. An accurate, reliable, easily applied procedure is necessary to effectively assess the child's performance in such a way as to prescribe treatment that will improve deficient performance.

The two subjects for this study were chosen on the basis of their chronological age, mental age, and a series of pre-test evaluations of their relative oral language skills. One child with above average and one child with below average language ability was chosen for analysis.

The four linguistic analysis procedures were graphically represented in similar tabular forms to facilitate comparison. The experimenter scored the language samples collected from the two children according to instructions, in the four procedures, and inter-examiner reliability coefficients were computed for each procedure by another similarily trained student.

Each procedure was analyzed in terms of: (1) ease of application; (2) inter-scorer reliability; (3) ability to discriminate language differences between the two subjects; and (4) ability to describe specifically the differences between the subjects.

Of the procedures used, those utilizing a slot-filler (tagmemic) analysis appeared to handle the language samples most adequately. It was generally felt that a renewed interest in basic structural linguistic concepts would prove valuable to the assessment of language development in children.