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SYNTACTIC STYLES AND UNIVERSAL ASPECTS OF
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1974

SYNTACTIC STYLES AND UNIVERSAL ASPECTS
OF LANGUAGE EMERGENCE

by

ANDRYA L.H. RAMER

A dissertation submitted to the Graduate
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CHAPTER 1

INTRODUCTION

I. LINGUISTIC INVESTIGATION AND THE
UNIVERSAL NATURE OF LANGUAGE

Linguistic investigation is the scientific examination of language. The scientific method involves hypothesis making and observation for the purpose of hypothesis testing. In terms of language study, this scientific method is employed for the purpose of developing a theory of language structure. This involves a dual approach. First, the descriptive rules for any language must be delineated. The transformational-generative approach to language study involves delineation of rules in such a way that the application of these rules in a prescribed order automatically generates all the grammatical sentences of a language and none of the ungrammatical ones (Chomsky, 1965). Second, questions arise regarding similarities and differences among language. It is necessary to delineate similarities among languages since once that is done there is no need to account for those universal aspects in the generative component. The specification of universal features is a difficult problem since surface differences among languages are immediately obvious. Phonological, morphological and syntactic differences are readily observable. The question of inherent similarities poses a far more difficult question since the aim here is to describe those characteristics which are common to all natural human languages (Greenberg, 1963). These universals

are of two types, formal and substantive. Formal universals involve a broad class of characteristics such as those concerning the application of rules and the cyclic nature of such rules. Substantive universals are more specific and indicate similarities among languages which involve, for example, construction types and word classes (Chomsky, 1965).

Thus, attempts to uncover inherent similarities or language universals have dealt with the question of the nature of all language and the universality of its structure. One of the reasons that the nature of language is believed to be universal has stemmed from the observation that any normal child is capable of acquiring any natural human language to which he is exposed. This occurrence immediately presumes that there are some deeper level structural similarities among languages. This is presumed to be the case since if all children are equally capable of learning all languages then there must be some equivalence among the languages and/or among the children.

II. DEVELOPMENTAL PSYCHOLINGUISTICS AND THE UNIVERSAL ORDER OF ACQUISITION

Developmental psycholinguistic investigation differs from purely linguistic investigation in that it is concerned with such psychological factors as the universality of the human cognitive apparatus in relation to the sequence of acquisition of syntactic constructions (Brown and Hanlon, 1970) and semantic notions (Antenucci et al, 1972) as well as the universal characteristics of language.

Modern psycholinguistic investigation grew from the renewed interest in linguistics in the late 1950s and early 1960s. The transformational-

generative approach to language which emerged at that time gave a new structure to research in child language development. Distinguishing between two types of rules, phrase structure rules that generate base sentences (simple, active, affirmative, declarative sentences-SAAD) of the form subject+verb+object for English, and transformational rules that are involved in generating more complex sentences (e.g. passives, truncates, negatives and questions) allowed researchers a starting point for the examination of emerging grammars. Since the transformational-generative approach was concerned with the universal nature of language and the deeper level similarities among languages, psycholinguistic research in this period tended to stress the examination of the universal nature of thought and language and the discovery of a universal sequence of acquisition across languages (Slobin, 1971d and Bar-Adon, 1971), or across children (Klima and Bellugi, 1966 and Brown and Bellugi, 1964).

In contrast to the developmental psycholinguistic research of the early current period, other psychological investigation has emphasized individual differences in function. For example, the literature on cognitive style outlines individual styles of thought processing (Wallach and Kogan, 1965) and perception (Witkin et al, 1962). The literature in developmental psycholinguistics, however, contains few comments on differences in psycholinguistic abilities in relation to the developmental process (Brown, Cazden and Bellugi, 1969 and Cazden, 1967 and 1968) and none of the major studies on language acquisition have aimed specifically at revealing differential patterns in style of language acquisition. It appears, however, that individual differences are as likely to occur in the language acquisition process as in other areas of psychological concern

and other areas of development.

Although all children acquiring any language must emerge from the developmental period producing utterances which are consonant with expectations of language use by the adult speakers of that language, it is possible that not all children approach the acquisition of language in identical ways. In other, non-linguistic, areas of development, there appears to be evidence of not only universal characteristics but also individual differences. Motor development offers a possible parallel to linguistic development in terms of the presence of universal characteristics as well as individual differences in the developmental process. An example of the possible analogy between language and motoric development lies in the method of acquisition of competence. All normal children will eventually walk in an upright position given that they have observed other humans doing so. Similarly, in language acquisition given exposure to humans employing spoken language, all normal children will learn to communicate verbally (Chomsky, 1965). In both areas of development, therefore, the presumption has been that no teaching is necessary, the only requirement being observation on the child's part. This factor is presumed to be universal in both developmental areas. There are, however, individual differences in the child's development of walking upright (Crowell, 1967). "Before he acquires the upright position he exhibits a number of primitive and abortive modes of locomotion: rolling, pivoting, forward crawl, backward crawl, regression, rocking, creep-crawling, creeping and cruising" (Gesell, 1954, p. 347). Not all children, however, employ all primitive modes of locomotion. Similarly in

language acquisition, parents frequently report differences among children in the ways in which language is acquired. The implications of these observations are that although universal aspects of language development certainly exist, individual differences in children's approach to language acquisition probably exist also.

The methods of analysis that have been employed in developmental psycholinguistic investigation were devised to examine the universal nature of language (Brown and Fraser, 1963, Gruber, 1967a and Kelley, 1967). They have been largely successful in this regard. A method of analysis devised to uncover systematic differences may also be successful, but no previous attempts have been made.

III. PURPOSE OF THE STUDY

This study was conceived as a longitudinal investigation of emerging syntax, with the purpose of describing both individual differences and universal aspects of development. Specific questions to be answered by the results of the study were:

1. Do individual differences in language acquisition appear in the period of emerging syntax?
2. If individual differences exist, can they be grouped into distinct styles of language acquisition each with its own characteristics?
3. What universal factors exist in the order of acquisition of sentence structures and semantic notions in this early period?

To reveal both differences and similarities in syntax, a method of ordering syntactic complexity in the earliest syntactic period was developed. Syntactic utterances were grouped according to a hypothesized

sequence of complexity against which to observe the developing syntactic system. The analysis was based upon the three basic grammatical relations: subject, verb and object. To reveal differences and similarities in development, utterances were analyzed for a number of previously noted semantic categories (Antenucci, et al, 1972; Bloom, 1970; McNeill, 1968).

This study is primarily an empirical one attempting to describe observed phenomena rather than to draw theoretical conclusions. The reporting of this research takes the following form: Chapter 2 covers earlier longitudinal research projects in language acquisition as well as theoretical considerations about the emergence of the first syntactic constructions. Chapter 3 is a description of the subjects and procedures of the present research including how the data were collected, transcribed, interpreted and analyzed. Chapter 4 contains the data obtained from each child, organized according to the methods of analysis applied. Chapter 5 deals with interpretation of the data according to the differing styles of syntactic acquisition. Finally, Chapter 6 deals with those aspects of acquisition which were observed in all the children studied.

CHAPTER 2

REVIEW OF THE LITERATURE

I. UNIVERSALS IN THE ACQUISITION OF SYNTACTIC-SEMANTIC STRUCTURE

The bulk of research on early stages of language acquisition has emphasized universal aspects of development. Psycholinguistic researchers have concentrated almost exclusively upon research that will reveal universal elements and an invariant order or progression of development. The purpose of this research was to specify universal stages of development, therefore, the analytical methodology applied to the data tended to obscure any differences within stages. The following quotation characterizes the conception of some recent research on early language acquisition.

The underlying semantic-cognitive structure of human experience is universal, and these universals of structured experience seem to be expressed in strikingly similar fashion in child language around the world . . . but what is remarkable at first glance is the uniformity in rate and pattern of development (Slobin, 1971c, p. 175).

While modern psycholinguistic investigators (Braine, 1963; Brown and Fraser, 1963; Brown, Cazden and Bellugi, 1969; Kelley, 1967; Sinclair, 1971) have hypothesized universals of acquisition, the conception of the nature of the acquisition process has differed from researcher to researcher. A review of the current literature on two word utterances reveals a wide range of opinions on this very issue.

Distributional Analyses

Braine (1963) undertook a distributional examination of the first syntactic structures. His analysis revealed that even the earliest two word utterances were not unstructured but involved construction of forms from two possible word classes. These utterances appeared to be composed of words which fell into the pivot class, a small relatively closed class, and a larger pool of open class words. Combinations of the pivot (P) and open (O) classes were constrained to four out of six possibilities. P items could be juxtaposed with O's initially or finally (P+O or O+P). O+O combinations or O class items alone were also possible. P alone or P+P combinations were never noted. Since this was a distributional analysis, a lack of exclusions in possible word class combinations would have indicated a failure of the grammatical description to delineate two distinct word classes. Thus, pivot constructions of the form P+O, O+P and O constituted the first stage of syntactic acquisition. In later development, pivot constructions continued and there was no real discontinuity between the two stages. There was, however, an increase in the number of O+O combinations. Braine concluded that ". . . these are not pivotal constructions but seem rather to exemplify a primitive sentence form" (Braine, 1963, p. 10). These O+O constructions are considered to be later developing forms based upon a greater knowledge of syntax.

Brown and Fraser (1963), employing a pivot-open framework for child language analysis, viewed this earliest syntactic speech as ". . . a systematic reduction of adult speech largely accomplished by omitting function words that carry little information. From this corpus of reduced sentences, we suggest that the child induces general rules which govern his

construction of new utterances" (Brown and Fraser, 1963, p. 195). These authors further stated that there was something about the operation of the child's mind which caused all children to reduce English in similar ways at the same stage of development.

On the basis of a distributional analysis, Brown and Bellugi (1964) found three processes to be involved in the progression from single word utterances to full syntactic form. Process One involved the use of pivot utterances. Process Two was the progressive differentiation of the privileges of occurrences of word items, producing a progressive differentiation of syntactic classes. Process Three was considered to be integrative. Whole phrases that had been undifferentiated earlier were integrated into larger structural units. These three processes always occurred in this predetermined order.

Resulting from a similar distributional analysis, Brown, Cazden and Bellugi (1969) concluded that the only significant difference among children in linguistic development was rate of acquisition. The ordering of stages was uniform among the three children they studied. Significant variation existed only in terms of speed of acquisition.

These distributional analyses dominated the study of early syntactic development. They assumed, at most, two basic types of syntactic classes, a pivot class and an open class. Pivot grammar was used to describe the earliest syntactic classes until the time when descriptions could employ subject of-, verb of- and object of- classifications in adult terms. At a later stage of emerging grammar, syntactically complete utterances were described in terms of traditional adult word classes with the application of transformational rule grammars. In the intervening period, no

within stage distinctions were allowed for in the analytic framework that had been established. The pivot-open construction was considered to be a universal of the child's earliest stage of syntactic acquisition. Furthermore, pivot grammar was believed to be fully descriptive of the child's syntax at this stage.

Reexamination of Pivot Grammars

The so-called pivot grammars were later found to be inadequate descriptions of the syntax of even the earliest two word utterances. K. L. Kelley (1967) attempted to speculate upon the order of emergence of grammatical markers. She stated that while pivot constructions might signal the occurrence of two word utterances, topic plus modifier constructions specifying attribution, possession, quantification and specification, or the use of action+acted upon (Verb + Object) grammatical combinations also occurred. Subject specification appeared later. Subject+Predicate constructions were assumed to exemplify the emergence of the first hierarchical construction. Kelley argued that:

The model thus accounts for the origin of the subject-predicate analysis of English sentences by assuming that the initial structure of the child's language acquisition mechanism . . . will eventually evolve into the adult predicate before the functional relation of sentence subject is available to him. The eventual predicate phrase acquires a psychological unity. . . . Later as the model's grammatical competence is extended by the addition of the functional relation "sentence subject," the psychologically unified predicate phrase analysis is combined with another element functioning as subject, and a hierarchical subject-predicate analysis has been accomplished (Kelley, 1967, pp. 125-126).

Gruber's ideas (1967) regarding sequencing of acquisition agree with those of Kelley. In Gruber's description, all children pass through two basic stages during the two word utterance period. In the earliest

two-word stage, utterances consist of predicate constructions that function as performatives. These performatives do not attribute a topic to the sentence but are used to demand or indicate. They serve the functions of declaration, imperative command, negation and question. They do so without the use of a full structure. The omitted grammatical subject is signalled by the use of context and intonation. Later productions, considered a second stage in the two word utterance phase, are reportatives. Only in the later stage are Subject+Predicate constructions possible.

Similarly, Menyuk (1969) found topic+modifier constructions to emerge later in the acquisition of grammatical relations. She explains the emergence of predicates before subjects on the basis that the earliest two word utterances are communicative rather than referential. Subject constructions are not used in the early stage because they ". . . do not tell about overt acts" (Menyuk, 1969, p. 31).

Sinclair (1971) proposed a very similar developmental process of definitive stages based on cognitive growth. Prior to syntactic formations, the child's single word utterances express possible action patterns related to himself. In these utterances the actor, the action and the eventual patient are intermeshed. When syntactic forms begin to emerge the distinction between forms is drawn from the verb. During this early syntactic period, all utterances express: a) an action that the child himself performed or was going to perform (an extension of the V relation) or b) the result of an action done by someone else (an extension of the O relation) or c) a combination of action+object. In all these cases, the subject is implicit because all utterances involve the self

as the ultimate subject. The distinction between self and not-self as the subject of the event is expressed only later. These predetermined stages through which all children pass, are presumed to result from universal cognitive activity.

Kelley (1967), Gruber (1967), Menyuk (1969) and Sinclair (1970) agree upon a universal sequence of acquisition for all children at this stage of language development. Bar-Adon's speculation (1971) followed these other theorists in kind, although he did not take as strong a stand regarding the absolute order of emergence. He proposed that two word utterances are composed of implicator+explicator. All sentences are of the form:

$$S \longrightarrow \begin{array}{l} \text{(Implicator)} \\ \text{(Subject)} \end{array} + \begin{array}{l} \text{Explicator} \\ \text{Predicate} \end{array}$$

For Bar-Adon, the predicate construction need not precede the subject formation in all cases. However, ". . . the implicator may not be mentioned, but the explicator which carries the important, novel, explicit information is always present" (Bar-Adon, 1971, p. 439).

In contrast, Roman Jakobson (1961) posited a developmental sequence in which the subject relation preceded the object relation. He attributed this phenomenon to the "iconic" aspect of word order. "The order of elements in language parallels that in physical experience or the order of knowledge" (Jakobson, 1961, p. 269). Thus, children learn and practice subjects before they learn and practice objects due to the organization of the non-linguistic environment and the human perceptual mechanism.

Developmental Sequence of Syntactic Acquisition
According to Grammatical Complexity

Another type of psycholinguistic research is that which attempts to relate linguistic complexity of structure to the order of acquisition of such structures in children. This approach is exemplified by Brown and Hanlon (1970) who tested the hypothesis that the linguistic derivational complexity of a sentence was related to the order in which constructions emerge in usage by children. The sentence types examined included simple-active-affirmative-declarative sentences (SAAD), questions, negatives, truncated questions, negative questions, truncated negatives and truncated negative questions. These researchers predicted that:

1. SAAD is a neutral sentence of the simplest type and will therefore emerge first.
2. Questions, negatives and truncates are more complex than SAAD sentences and will develop later.
3. Any combination of questions, negatives and truncates are still more complex and thus will develop later than any single sentence type alone.

Although the hypotheses in this study were in general supported by their findings, the direct linking of the linguistic grammar and the mental grammar of the child was considered questionable by Watt (1970b) in his critique and discussion of the study. Watt (1970a) exposed certain fallacies associated with relating formal linguistic theories directly to the psychological processes involved in the use of language. He cited two fallacious underlying assumptions in research of this type, the Correlation Hypothesis and the Strong Inclusion Hypothesis.

The Correlation Hypothesis posits a close relationship, in fact, an intimate congruence, between the mental grammar in each speaker and the linguistic grammars currently being constructed and modified by generative-transformational grammarians. In the several versions of this hypothesis, linguistic derivational theory of complexity is assumed to correspond to a mental grammar. According to these theories the linguistic grammar and the mental grammar generate the same set of sentences with the same structural descriptions and derivational paths. Watt discusses several variants of the Correlation Hypothesis, pointing out that each of them predicts that the mental grammar has complexity functions such that truncated forms are more complex than the corresponding full forms. In the linguistic grammar, truncates are derived from the full sentence forms by additional deletion transformations applied to the base form. For the mental grammar, however, the reverse is intuitively true. Even when differences in length are considered, the truncates are the more simply derived in the mental grammar. The Correlation Hypothesis thus fails to explain the variations in psychological complexity of certain linguistic forms.

In place of a direct isomorphism between the linguistic and the mental grammars, Watt proposes an "abstract performative grammar" which puts a premium on economy of derivation in sentential paradigms. While the Correlation Hypothesis is concerned with overall economy, in an "abstract performative grammar" the economy is specific to particular sentence types.

The Strong Inclusion Hypothesis, the second underlying assumption of psycholinguistic research which Watt discusses, implies a derivational closeness between the adult mental grammar and the child or developing

mental grammar. This notion has widespread implications for developmental psycholinguistics. It implies that every well formed child-produced utterance in the child's mental grammar has the same derivation as a fully formed adult sentence of the same deep structure.

Although most of the research which relates linguistic structure to the mental representation and psychological processes involved in language use deals with utterances that are more grammatically developed than two word constructions, Watt shows the tenuousness of the relationship between formal linguistic theory and psycholinguistic application. If utterances are to be ordered according to grammatical complexity, that complexity must be based upon the child's structure alone.

Semantic Categories in Affirmative Constructions

Bloom's analysis (1970) of the Noun+Noun constructions in her data revealed that ". . . there were five possible structural descriptions that could explain the semantic relationship between constituents in utterances with the surface description: Noun+Noun . . ." (Bloom, 1970, p. 62). Bloom found conjunctive, attributive, genitive, subject-locative, and subject-object relations among the Noun+Noun instances in her data. Conjunctive constructions occurred when "the two constituents name simultaneous aspects of the same referent or two referents within the bounds of a single utterance, with no connection between them. . . ." (Bloom, 1970, p. 62). Attributive constructions were those in which the first noun was an attribute of the second noun. Genitive constructions were those in which the first noun was the possessor and the second noun was the possessed object. In subject-locative constructions ". . . the

initial position noun was the subject of a locative predication . . ." (Bloom, 1970, p. 60). Finally, subject-object constructions were those ". . . where the initial-position noun related to the whole string as sentence subject, and the subsequent noun represented the predicate of the subject-a direct object" (Bloom, 1970, p. 62).

The semantic relations which held between nouns for Bloom's data resemble types of cases which are describable for most languages whether they are inflected or not. The case relations between the nominal elements exist although not all cases are marked grammatically in all languages. A long though not exhaustive list of possible cases would include: nominative, accusative, instrumental, dative, ablative, genitive, locative, benefactive, factitive, ablative, instructive, and objective.

Antenucci et al (1972) attempted to find a method of coding the semantic clause types they noted in child-produced language. For this coding process they identified several useful semantic categories, including: 1) explicit deixis which refers to the speaker, hearer, time or place of reference and is marked by such demonstratives as: "this," "that," and "there." 2) addition which refers to aspects of recurrence expressed by such words as "again," and "too." They also coded clauses or utterances semantically into these other categories: 3) manner, 4) locative, 5) possessive, and 6) temporal.

Semantic Categories in Negative Constructions

Bellugi's research (1967) on negative constructions showed that negative forms begin appearing during the early syntactic period. The first type of syntactic negation that children produce may be expressed as

Neg+S or S+Neg. In these utterances a negative element (usually "No" or "Not") is placed outside an otherwise affirmative sentence. In addition, several different types of semantic negation may be observed to occur during this period.

Lois Bloom (1970) described three types of semantic negation in this early period. 1) Non-existence of the referent in the context after it had been present. 2) Rejection, or the pushing away or turning from an object. In this case, "the referent actually existed within the contextual space of the speech event and was rejected or opposed by the child" (Bloom, 1970, p. 173). 3) Denial, or those utterances in which "the negative utterance asserted that an actual or supposed predication was not the case. The negated referent was not actually manifest in the context as it was in rejection, but it was manifest symbolically in a previous utterance" (Bloom, 1970, p. 173).

David McNeill (1968) described a similar type of categorization including a fourth category of negative utterances. He described the following semantic categories of negation for Japanese:

1. Existence-Nonexistence of objects and events. This category is equivalent to Bloom's non-existence grouping in which, for example, "no apple" means, "I don't see an apple."

2. Falsity of statements. This category coincides with Bloom's denial class in which "no apple," means, "That's not an apple."

3. External-Internal refers to an internal desire or lack of it. This category is equivalent to Bloom's rejection in which, for example, "no apple," means "I don't want the apple," when the apple is present.

4. Entailment-Nonentailment is a second form of denial in which

"the negative of one statement entails the truth of another" (McNeill, 1968, p. 55). Utterances of this type take the following form: "no apple" means, "No, I don't have an apple, I have a pear." The critical point is that when the truth of one proposition is negated, a true alternative is entailed. This fourth type of semantic negation is not accounted for in Bloom's analysis.

II. DIFFERING STRATEGIES IN THE ACQUISITION OF SYNTACTIC STRUCTURE

Bloom (1970) studied three children and attempted to write a grammar to describe their productions. Her descriptions began with the grammatical relations which each child employed in his productions (subject, verb or object). Analysis of child-produced utterances according to grammatical class had presented some difficulty since adult word order constraints are often not observed and grammatical elements and markers may be missing. Bloom developed and reported on a method of determining grammatical class specification which overcame these difficulties. Bloom's method emphasized semantic function as a determiner of grammatical class. The semantic function of a particular word or group of words within an utterance was determined by the non-linguistic contextual information. The child's actions, the environmental situation and the adult's utterances all served as clues to the semantic intent of any child utterance and thus also to determining whether a word functioned as a subject or an object of any specific utterance.

Using this method, Bloom noted that at comparable stages of early syntactic development it was not possible to describe the grammatical

relations used by all children in the same way. She described these differences as strategies of language acquisition. In her work she noted two basic strategies. Two of the children she studied employed a strategy which involved manipulation of substantive forms with variable grammatical meaning. The result of the combination of these substantive forms was different grammatical (SVO) relations. Words occurred with variable grammatical function. These two subjects, Kathryn and Gia, produced SO, VO and SV relations from the earliest point at which they were studied. Eric, the third child, employed a somewhat different strategy. Bloom described Eric's language as pivotal with the application of a single form having invariable grammatical function. He employed relatively fixed syntactic frames and mostly specified the VO relation. Bloom's study of three children in the early stages of syntactic development therefore begins to suggest patterns of individual differences in style of language acquisition.

III. THE NATURE OF SINGLE WORD UTTERANCES

Considerable controversy exists concerning the nature of single word utterances. Early theory held that in the first stages of language development, the child's utterances are holophrastic. According to this theory, when a child employs single word utterances he does not refer to an object or event alone, but expresses a complex idea with implicit grammatical structure. According to McNeill ". . . while children are limited to uttering single words at the beginning of language acquisition, they are capable of conceiving something like full sentences" (McNeill, 1970, p. 20). Sentential forms fail to exist at this stage because of

mnemonic and motoric limitations, not because the child has no notion of syntax. Holophrastic theory provides that the child has some innate knowledge of syntactic structure, at least in its universal form. Syntactic learning involves elaboration of language specific rules. The child does, however, come to the learning task with expectations of hierarchical structure. Only memory and motor limitations and the lack of knowledge of a particular language's specific syntactic forms inhibit earlier emergence of syntax.

More recent speculations have proposed a non-holophrastic theory of language emergence to explain the nature of single word utterances. According to this hypothesis, when a child uses and responds in single words he is referring not to a particular object but to the action schema or conceptual relation in that situation. This proposal accords with the Piagetian approach that objects come to be known through the actions that can be performed with them (Piaget, 1970). No underlying knowledge of the structure or grammatical relationships in language is assumed. This position, stated recently by Bloom (1973), is in agreement with Piagetian notions of the relationship between cognition and language (Slobin, 1971). This account of single word utterances is also consonant with Werner's (Langer, 1970) view that the earliest utterances are referentially and linguistically undifferentiated.

The question of underlying syntactic knowledge in the presyntactic period is, however, irrelevant for the explanation of single word utterances which continue to occur after two word and longer utterances have emerged. Further speculations may be raised regarding, however, whether

single word utterances produced in the early syntactic period continue to represent the action schema of the objects to which they are tied or at this later period come to represent the object more directly. A more direct representation can be argued for successfully at this stage of development for two reasons. First, the words can be combined and recombined with other words at this same period in development. Second, cognitive processes have attained a higher level in the intervening months. Classifying single word utterances produced during the early syntactic period of development into traditional word classes may therefore be feasible.

IV. SEX RELATED DIFFERENCES IN LANGUAGE ACQUISITION

A large body of research deals with sex related differences in the language acquisition process. "One of the most consistent findings to emerge from the mass of data . . . seems to be a slight difference in favor of girls in nearly all aspects of language that have been studied" (McCarthy, 1954, p. 577). For numerous studies at various stages of language acquisition, girls are generally favored. Early research has indicated superiority in the following areas during the early acquisition period:

1. Concerning the number of phonetic types, ". . . girls begin to surpass boys by about the tenth month of life" (McCarthy, 1954, p. 577).
2. Concerning syntactic acquisition, "Approximately twice as many girls as boys begin to use sentences in the third year of life" (McCarthy, 1954, p. 577).
3. "The mean age of learning to talk appears to be slightly lower

with girls than with boys" (Terman, 1954, p. 1071).

4. "Girls tend to start talking before boys and the superiority lasts until two to three years of age" (Rebelsky, Starr and Luria, 1967, p. 330).

5. "Girls are superior with respect to the development of various parts of speech" (Rebelsky, Starr and Luria, 1967, p. 330).

6. "There is a clear superiority of girls with respect to sentence complexity" (Rebelsky, Starr and Luria, 1967, pp. 330-331).

7. In almost all measures of linguistic complexity, ". . . measures which show developmental trends with age also reveal a slightly more rapid linguistic maturity for girls" (McCarthy, 1954, p. 579).

Through the early developmental period, therefore, a wide range of studies have indicated female superiority especially with regard to sentence structure. Superiority has been defined as rate of acquisition in all cases. None of the studies cited attempted to examine sentence structure differences corresponding to the male-female division.

CHAPTER 3

DESCRIPTION OF THE STUDY

I. THE NEED FOR A NEW APPROACH

This study intended to investigate early syntactic forms systematically and longitudinally to identify similarities and differences in acquisition. Almost all previous research on early syntactic acquisition has centered upon the universal aspects of development. Although individual differences in the process of language acquisition have been assumed to exist, practically no attempts in the recent psycholinguistic literature have been made to uncover these distinctions systematically. Bloom (1970) revealed possible broad differences in approach to syntactic development among children while attempting to write a grammar for a collected corpus. Although her initial purpose for the investigation was not to unearth individual differences in the language acquisition process, Bloom's findings pointed toward the existence of such individual differences without, however, stating conclusive findings with respect to individual variation. Because the three children in her study were first observed while already producing syntactic forms, it was not possible to know whether, at some earlier developmental period, all three children had indeed been producing identical utterance types.

Bloom refers to these distinctions in approach to language acquisition as differences in strategy. The term "style" will be employed here because "strategy" may imply intentionality on the part of the child to

select from possible avenues open to him. Style, however, implies only individual differences over which the child may have no control and among which he makes no selection.

To approach these distinctive differences, it is necessary to begin the examination of syntactic emergence at some period prior to the use of syntactic forms of any kind. A definition of syntactic structure is needed that is capable of differentiating successive single word utterances from utterances in which two or more words are relationally combined. Intonation markers or phrase boundaries determined by pause constitute a simple means of differentiating successive single word utterances from syntactic constructions. Syntactic utterances are here defined as combinations of two or more words within one intonation frame. They are bounded by juncture pause initially and finally. Because a complete account of developmental differences in style of syntactic acquisition requires data from the entire early syntactic period, observations must begin while the subjects are still producing only single word utterances. This procedure eliminates the possibility, as in Bloom's study, that distinctions in the use of subject, verb and object specification result from the stage at which observation began. In order that the complete range of early syntactic emergence be examined, the children in this study were all observed at least once while still employing only single word utterances.

II. PROCEDURE FOR DATA COLLECTION

Seven children served as subjects in this study. Six were seen individually in their homes for approximately two hours once every three

weeks. Pilot investigations revealed that two hours was a reasonable session length since the amount of verbalization appeared to drop off after this period. Seeing children as frequently as once every three weeks insured that no developmental change was omitted due to the interval between observations. The seventh child was videotaped in a nursery setting described below.

Each session was recorded on an Ampex cassette recorder using Norelco 200 cassette tapes. A non-directional standing microphone allowed the children freedom of movement and made it possible to place the entire recording apparatus at some distance from the field of play. The children adapted quickly to the presence of the equipment, and although they occasionally approached the recorder and referred to it in their conversation, its presence was largely ignored. Some noise was picked up by the non-directional microphone, but recording quality was adequate for transcription.

The examiner arrived at each play session with a uniform group of toys so that some portion of each taping with the different children would contain reference to consistent objects. This technique proved unnecessary because the children involved in the study owned the same toys and made the same environmental references. Further, certain children were eager to play with their own toys, sometimes leaving the examiner's toy bag untouched for an entire session. Children were not discouraged, nor were they encouraged to play with either their own or the examiner's toys.

To maintain the naturalistic setting, the children were allowed relative freedom to explore their environment. In most cases the child

determined the content of the taping session. The mothers (or in some instances, the housekeeper) typically were in and out of the room. Occasionally they spent the entire session with the child and examiner but more often they left the playroom and continued with their own chores. For each child on some occasion the child's father was also part of the play session. Older siblings were occasionally included in the taping. Although most of each taped session involved play, there were instances of toilet behavior and feeding situations. The children seemed to consider the investigator to be a very unusual playmate who allowed the child a constant focus of attention. Generally, the examiner was recognized from session to session and was greeted with delight. This was especially the case for those children who had older siblings and for whom it was unusual to have a visitor whose interest was solely in them.

The six children whose development was recorded as described above were seen at regular three week intervals, beginning when they were producing only single word utterances and concluding when at least 20% of their syntactic utterances specified Subject+Verb+Complement structures within one intonation frame. The critical cutoff percentage was established at 20% in order to allow for two types of typical utterances which could be considered syntactically complete within an adult framework but did not constitute part of a total subject-verb-complement construction. Commands, in which subject specification is typically deleted, are considered syntactically complete in the adult form. These utterances were not counted in the 20% syntactically complete Subject+Verb+Complement construction to meet the criterion of this study. Constructions involving intransitive verbs were treated similarly. The relatively low

percentage criterion for syntactically complete utterances thus permitted normal occurrence of commands and constructions with intransitive verbs.

The seventh child was obtained through the Albert Einstein Medical Center Infant Nursery. This child attended the nursery four mornings weekly. Her behavior in the nursery setting with her mother and the regular nursery school teacher was recorded on videotape. For this child, biweekly forty five minute language samples were taken during free play. There was no direct contact between the examiner and the mother or child, but the examiner observed each taping session through a one-way mirror. This child was observed between the ages of 12 and 23 months because the data were being collected by the nursery for other purposes as well. The time span fully included the developmental interval observed for the other six children.

III. PROCEDURE FOR DATA TRANSCRIPTION

All child utterances and examiner and parental responses were transcribed from the tapes. In the earliest tapes, when the children had not attained phonemic stability for a great many of their productions, child utterances were transcribed phonetically employing the International Phonetic Alphabet. All child utterances were transcribed exactly as produced in all instances including jargon strings. As phonetic stability increased and jargon decreased, English orthographic representation was used to replace phonetic notation. Wherever the productions were not fully recognizable, phonetic transcription was reapplied for that utterance only. The phonetic transcriptions were not employed exclusively throughout because the study was not concerned with phonemic development. Once

it was possible to identify consistent representations of English words, the need for phonetic transcription ended.

Adult utterances were transcribed in English orthography. The only examiner and parental responses transcribed were those related to the child utterances. Each child utterance was therefore flanked by the examiner and parental responses that preceded and followed it. The adult utterances were essential to recording a complete transcript of the verbal interaction. These adult utterances assisted in the later interpretation of the mother-child and examiner-child interactional process and for the interpretation of incomplete child productions.

The sequence of utterances of all individuals related to the same subject matter and all relevant contextual material were defined as one speech event. The data could thereby be segmented into cohesive units. The unity of the interactional process, although not directly examined in this study, was helpful in determining the interpretation of the children's utterances when syntactically incomplete.

Finally, non-linguistic contextual material was reported for both adult and child utterances. Information dealing with the speech event as a whole was also included. For example, in one of David N.'s protocols his mother took a book from the toy shelf. This action set the scene for one speech event which was recorded as information relative to the total speech situation. David's mother asked him, "What's this?" which was transcribed exactly as it occurred. The non-linguistic context was recorded as "Mother points to a picture of Indians." David's response was, "Indians" followed by "David Indians" and "Want Indians." These utterances were transcribed as they had been recorded. The non-linguistic

context for these three utterances was that David grabbed the book from his mother.

Child utterances, examiner and parental utterances, and contextual material were transcribed within one day of the taping session. Since transcription followed the time of recording so closely, the contextual material was recalled with relative ease. At times when the audio information seemed insufficient for later interpretation, the investigator read into the tape, at the time of recording, an exact description of the ongoing activity.

The final product of the data transcription was a total written transcript of the entire taped session including all verbal and non-verbal material that had been recorded. No relevant audible information was deleted from the transcript. In those cases where the quality of the recording made later comprehension and transcription difficult, no attempt was made to guess at the produced forms. Instead, the words "Poor Quality" were written next to the speaker's name and that data excluded from later analysis.

IV. PROCEDURE FOR INTERPRETATION OF DATA

Grammatical Classes

If any method of analysis is to be useful, it must be able to account for all the obtainable data. Most research on child language acquisition has studied the grammatical classes: subject of-(actor), verb of-(action), and object of-(acted upon). This type of specification, however, excludes a certain percentage of obtainable utterances that could occur within the predicate frame. Although it accounts for

direct and indirect objects, it does not allow for the analysis of predicate constructions which are composed of prepositions, prepositional phrases, adverbials, adverbial phrases and predicate adjectives that modify the subject. All of these constitute possible child constructions. All these types of predicate constructions were described as complements. Thus, the grammatical classes were subject, verb and complement.

Semantic Intent

Basically, Bloom's technique for determining grammatical relations, as described earlier, was employed. The semantic intent of each utterance was determined on the basis of three types of disambiguating situational information: 1. the non-linguistic context; 2. the preceding adult utterances; and 3. the child's utterances immediately following the utterance under analysis. For example, three utterances, "Danielle money" "Danielle pants" and "Danielle watch" are composed of two nouns (N) in a N+N construction. The utterances alone reveal no differences in grammatical structure. The differing relations within each utterance are revealed by examination of the situational context. When "Danielle money" was produced, the examiner was holding several pennies that she had taken from her bag. Danielle had her hand extended and was reaching for the money. It was clear that the money belonged to the examiner and not to Danielle and that Danielle knew this because "Danielle money" was followed by "Danielle want" and "want money." Thus, it appears that "Danielle money" was functioning as a subject+complement construction. The context plus the child's own utterances disambiguated the grammatical relations. In the second example, "Danielle pants," the examiner had said, "Oh, what

pretty pants. Whose pants are they?" Danielle then touched her pants saying, "Danielle pants." On the basis of the examiner's utterance and the non-linguistic context, the utterance was construed to be a complement. For the example "Danielle watch," the examiner had said, "It's a watch over there. Whose watch is on the floor?" Danielle uttered, "Danielle watch." This utterance supplied the requested information indicating the subject. In this case, the adult utterance served to indicate the grammatical relations in the child's utterance. Determination of grammatical class for every utterance was based upon at least one of these three sources of disambiguating information. Since all contextual information as well as adult utterances were transcribed from the audio and video tapes, interpretation of this type was possible. The above examples cover most instances of N+N constructions in the data. A list of guidelines for analysis of the data is found in Appendix VIII.

Productivity

Within the collected corpus, the notion of productivity was consistently applied as a criterion for counting. It was required that all utterance types occurred more than two times before that structure could be considered as a countable form. Utterance types which occurred less frequently were discounted from the analyses. The notion of productivity was employed in order that chance or error forms would not be mistakenly included in the analyses. In adult language systems where knowledge of the syntactic aspect of the language is presumably complete, grammatical errors due to performance factors are a relatively common occurrence. It would be inconsistent to believe that these same factors do not operate

in the child's developing system. The notion of productivity thus eliminates from the corpora errors of this type.

Mean Length of Utterance

The analyzed data for each child at every observational session was analyzed for mean length of utterance in general accordance with Brown's rules (1973). The one exception was that mean length of utterance was calculated on the total corpus for each child at each session rather than on the first 100 utterances. Brown does not set any guidelines for pre-syntactic constructions. In this study reduplications and Empty forms were counted as separate morphemes while Dummy+_____ constructions were counted as a single morpheme since the dummy element showed no evidence of morphemic status. (See page 35 for definitions of these terms.)

V. SUBJECTS

1. Emily was first seen at 18-3/4 months. She is a second child, with one female sibling 2-1/2 years older than she. Both of Emily's parents are physicians and a housekeeper has cared for Emily at least part of the day for most of her life. Both parents were only occasionally directly involved in the taping sessions. The examiner and Emily were often left alone while the housekeeper cared for her older sister. Emily's parents had a moderate approach to language learning. They were not as concerned as some of the parents about speed of acquisition nor did they require imitative routines. However, they often compared Emily's language development to her older sister's developmental progress, noting that it was slow in comparison.

2. David N. was 16 months old when he was first seen. He is also

a second child, with one female sibling one year older. David's father is a physician and his mother is a nurse. When observations were begun, Mrs. N. was not employed outside of the home. However, she returned to work, hired a housekeeper and enrolled David's sister in nursery school at about the time of the sixth taping. Both before and after David's mother returned to work, she only occasionally was involved in the taping sessions. She was not anxious about David's language acquisition progress. Only occasionally were attempts made to initiate repertoire routines and imitative language behavior.

3. Danielle, 16-1/2 months old at the time of the first taping, is an only child. Her father is a physician and her mother a former teacher. Danielle's mother often played with her and the examiner throughout the taping sessions. Danielle's mother stressed language skills. She often read books with Danielle and required imitation of animal and people names, common objects and activities.

4. David S. was 18 months old at the time of first contact. An only child, he was cared for both by his mother and a housekeeper. His mother was present at all of the taping sessions. His father is an attorney and his mother an actress. David's mother was extremely concerned with his language acquisition skills. Naming, imitation and imitative singing were often part of the mother-child interaction.

5. Greg was 20 months old when he was first seen. He is a second child with a female sibling three years his senior. His father is a dentist and his mother a teacher. His mother dedicated herself to child rearing during the early years and his day was spent almost exclusively with his older sister and mother. Greg's mother had a relaxed attitude

with regard to development as a whole. This attitude also characterized her interaction with Greg concerning language. She never required imitation and readily accepted an articulatory approximation that was minimally decipherable.

6. Lisa was 15-1/2 months old when she was first seen. A second child, her brother was two years older. Lisa's father is a physician and her mother is a full time homemaker who was in the home at all times during taping sessions. Lisa's mother stressed language development to a considerable degree. She often required Lisa to imitate her utterances and pressed for articulatory competence.

7. Marjorie is an only child. Her father is also a physician and her mother a full-time homemaker. Marjorie's recordings were obtained within the nursery setting and involved the interaction of mother, child and nursery school teacher. There was no direct contact between examiner and mother or child. Marjorie's mother placed great importance upon language development. The recorded sessions were filled with language routines. These routines involved the mother's pointing to objects and Marjorie's naming of them or question-answer routines revolving around animal sounds, numbers and people naming.

VI. CLASSIFICATION OF SYNTACTIC CONSTRUCTIONS

Presyntactic Forms

Examination of the data revealed that some children produced utterances composed of more than a single element which were not truly syntactic since no meaningful relation obtained between the elements. These utterances have been termed "presyntactic" in line with the criterion

for syntax used in this research (See p. 36). There were three types of presyntactic forms.

Dummy Forms. Dummy forms are those utterances in which a real word is preceded by a single phonetic unit, the dummy element. Single phonetic elements that were used in this way were: /ɪ/, /æ/, /a/, /ə/, and /ʌ/. These single phonetic elements were called dummy elements since they extended the utterances without having a true relational component or semantic base. This was obvious since different phonetic elements were combined with the same word in identical situations.

Reduplication. Reduplicative constructions were composed of a single word produced successively, usually twice but occasionally three times, within one intonation frame. It did not appear to be a means of signaling plurality or recurrence because in most cases it referred to only one object or event.

Empty Forms. Empty forms combined some stable group of phonetic elements with a traditional word. This group of phonetic elements is termed an empty form because it has no apparent referent. In fact, those children who employ this type of presyntactic form use the empty element to refer to many objects. Described first by Bloom (1973), these forms refer to everything and hence to nothing. Bloom named these forms "empty pivots." The term "empty form" has been employed here because one major characteristic of pivots is that they may not occur as single word utterances or in combination with one another (Menyuk, 1969, p. 30). In the corpora from those children who produced empty forms, there are many instances of their occurrence singly and in reduplication. Such occurrences immediately drop them from the pivot class.

Syntactic Forms

The criterion for syntactic constructions was two or more words produced within one intonation frame bounded initially and finally by juncture pause in which all elements had commonly agreed upon reference. Syntactic constructions were affirmative syntactic constructions, negative syntactic constructions, questions, explicator constructions and indeterminate constructions. Different types of analyses were used for different construction forms.

Affirmative Syntactic Constructions. It was expected that by far the largest number of utterances would fall into this class. Affirmative syntactic constructions were analyzed in two ways: 1) A complexity analysis was undertaken to determine developmental complexity of structure and 2) Subject, verb and complement grammatical class structure was determined for each utterance.

Complexity Analysis. Individual variation in the developmental language process should be describable according to the simplicity-complexity dimension of syntactic structure. To this end, analytical methods are needed to delineate developmental progression according to the number of syntactic relational classes employed per utterance. For English, the three possible grammatical classes are subject (actor), verb (action) and object (patient). As explained earlier, however, the object class may be replaced by complement structures which encompass adverbials, prepositions, and predicate adjectives as well as direct and indirect objects. One aspect of the complexity of structure may be explained by the number of these grammatical classes employed in any one utterance. Complexity may also be affected purely by the number of

elements which are produced within one grammatical class. Thus, the simplicity-complexity dimension may be defined by the number of grammatical classes used and expanded in a particular utterance. According to the analysis used here, a syntactic utterance in which one grammatical class is expanded is less complex than a syntactic utterance which specifies two grammatical classes. For example, a two word utterance specifying an expansion of the object class, such as "Pretty dress," would be considered to be less complex than another two word utterance, "Run home," which specifies a Verb+Complement relation. Both of these utterances would be considered less complex than an utterance which specified the expansion of one grammatical class in combination with a second unexpanded grammatical class. Thus, "Want that dress" specifies a verb plus an expansion of the complement class. This utterance is syntactically more complex than a simple Verb+Complement relationship.

Using this method of classification, the increasing complexity of the children's utterances is examined in this study for each particular sentence type individually and independently of the adult model of linguistic description. Specifically, increasing sentential complexity is judged by combining the following classifications:

1. The number of grammatical classes per utterance
 - a. Subject, Verb or Complement alone: one grammatical class
 - b. Subject+Verb, Subject+Complement, or Verb+Complement: two grammatical classes
 - c. Subject+Verb+Complement: three grammatical classes
2. The number of expansions of grammatical classes per utterance

- | | | |
|--|---|----------------|
| <p>a. Expanded Subject
Expanded Verb
Expanded Complement
Expanded Subject+Verb
Expanded Subject+Complement
Expanded Verb+Complement
Subject+Expanded Verb
Subject+Expanded Complement
Verb+Expanded Complement</p> | } | one expansion |
| <p>b. Expanded Subject+Expanded Verb
Expanded Subject+Expanded Complement
Expanded Verb+Expanded Complement</p> | } | two expansions |

The above measures are combined to order degree of complexity in the following sequence from least to most complex:

1. Group I Utterances: One Grammatical Class Expanded

The least complex type of syntactic constructions according to this classification are those utterances which specified only one grammatical class. For only one grammatical class to occur in a two word utterance, that class must be expanded. Possibilities within this grouping are: Expanded Subject (SS), Expanded Verb (VV) and Expanded Complement (CC). Expanded complements may occur in adverbial phrase, prepositional phrase, direct object and indirect object constructions (See Table 3.1).

2. Group II Utterances: Two Grammatical Classes

The next more complex construction is the combination of two grammatical classes, neither of which is expanded. Possible constructions within this grouping are: Subject+Verb (SV), Subject+Complement (SC), and Verb+Complement (VC) (See Table 3.2).

3. Group III Utterances: Two Grammatical Classes--One Expanded

The next more complex construction type involves the combination of two grammatical classes where one element is expanded. Possible constructions in this grouping are: Expanded Subject+Verb (SSV), Expanded Subject+

Table 3.1

Group I Utterances: One Grammatical Class

Group I	Utterance	Relevant Context
SS	"Rocking chair"	A rocking chair bumped Marjorie in the head, the examiner asked, "What bumped you?"
VV	"Want go"	Emily was standing at the front door to her apartment after her sister had left.
CC	"Down stairs"	Examiner asked, "Where did Mickey go?"
CC	"In there"	After Greg had put money into a box.
CC	"Racing car"	Lisa handed the examiner a car.
CC	"Pretzels Margie"	This was preceded by, "to Margie," as Marjorie reached for the pretzel box.

Table 3.2

Group II Utterances: Two Grammatical Classes

Group II	Utterance	Relevant Context
SV	"Mommy come"	David S. grabbed his mother from the phone and pulled her into the living room.
SC	"Daddy hospital"	The examiner asked Danielle, "Where does Daddy work?"
VC	"Play sand"	Marjorie is asked by her mother, "What does Marjorie do at school?"

Complement (SSC), Expanded Verb+Complement (VVC), Subject+Expanded Verb (SVV), Subject+Expanded Complement (SCC) and Verb+Expanded Complement (VCC) (See Table 3.3).

Table 3.3

Group III Utterances: Two Grammatical Classes -
One Expanded

Group III	Utterance	Relevant Context
SSV	"Her foot stuck"	Marjorie said this to her mother when the doll's foot got stuck in the carriage.
SSC	"The money inside"	Emily to the examiner when she tried to get the money that had fallen into the radiator.
VVC	"Want see that"	Greg pushed his sister away from the guinea pig cage.
SVV	"Baby go sleep"	Emily put her doll into its bed.
SCC	"Raggy this carriage"	Danielle put the Raggedy Ann doll in the carriage.
VCC	"See boat outside"	David N. points out window to the boats on the river.

4. Group IV Utterances: Two Grammatical Classes--Both Expanded

The fourth type of construction in order of complexity is the syntactic combination of two grammatical classes in which both are expanded. Possible constructions in this grouping are: Expanded Subject+Expanded Verb (SSV), Expanded Subject+Expanded Complement (SSCC) and Expanded Verb+Expanded Complement (VVCC) (See Table 3.4).

Table 3.4
 Group IV Utterances: Two Grammatical Classes -
 Both Expanded

Group IV	Utterance	Relevant Context
SSVV	"My mommy want see"	No instances of this construction occurred in the data. This example is hypothetical.
SSCC	"That hat on Ernie"	Greg pointed to a picture of Ernie in a book.
VVCC	"Want see the car"	Emily grabbed the toy car from the examiner's toy bag.

5. Group V Utterances: Three Grammatical Classes

These utterances, the most complex type of construction within this framework, specified a combination of subject plus verb plus complement forming an SVC construction. Although the same number of words would be necessary to specify an SVC relation as for the specification of two grammatical classes--one expanded (Group III Utterances) and a greater number of words would be needed to produce an utterance with two expanded grammatical classes (Group IV Utterances), this grouping was considered the most complex type of construction here examined. The number of grammatical relations specified is considered to be more relevant to syntactic complexity than the number of words per utterance (See Table 3.5).

Data from this complexity analysis was interpreted to answer the following questions:

1. Was a universal sequence of complexity revealed for all children studied?

- 2. If there was a universal sequence of complexity, was it ordered as hypothesized?
- 3. Were there any evidences of individual variation in the sequence of acquisition?

Table 3.5

Group V Utterances: Three Grammatical Classes

Group V	Utterance	Relevant Context
SVC	"Snoopy fall down"	Snoopy fell off the motorcycle.
SVC	"Daddy come in room"	David N. to his father who is in the living room as David pulled him into the play room.
SVC	"Me open cheese"	Greg took cheese from his mother and began unwrapping it.
SVC	"Danielle give it Mommy"	Danielle handed her mother a toy.

Grammatical Class Analysis. To determine whether all the children in this study progressed through the same stages in the specification of grammatical elements and relations, the data from each observational session for each child was analyzed in two ways. 1) The number and percentage of subjects, verbs and complements specified in all syntactic utterances was computed. a) Subject specification was determined by the number of subject classes included in the following groupings: SS, SV, SC, SSV, SSC, SVV, SCC, SSVV and SSCC. b) Verb specification was determined by the number of verbs present in the following groupings: VV, SV, VC, SSV, VVC, VCC, SSVV and VVCC. c) Complement specification was determined by the number of complements included in these groupings: CC, SC, VC, SSC, SCC, VVC, VCC, SSCC and VVCC. 2) The number of SV, SC and VC

relations which appeared in each session was recorded and percentages computed. a) SV, SSV, SVV and SSVV types were included in the Subject+Verb count. b) SC, SSC, SCC and SSCC utterances were included in the Subject+Complement count. c) VC, VVC, VCC and VVCC were included in the Verb+Complement count.

Data from these two analyses were interpreted in order to answer the following questions:

1. At comparable developmental periods, do all children specify subjects, verbs and complements to the same degree? That is, is the percentage of grammatical class specification approximately equal for all children studied?
2. Do subject, verb and complement structures emerge in the same order for all children?

Negative Constructions. All negative utterances were grouped together in an effort to examine the syntactic structure of negative constructions at this period of development. The questions which were asked were:

1. What types of negative markers were employed?
2. In the earliest negative syntactic constructions, was the negative element incorporated into the sentential string?
3. If not, at what point in development did it become so incorporated?

Questions. In the effort to account for all possible productions, a method of analysis for question formation was necessary. In English there are eight possible "wh" question words: what, where, whose, who, why, how, when and which. Although it was not expected that the children

would produce all of these forms, they were included in the analysis so that the possibility of their occurrence would be accounted for. Each utterance including one of these question words was removed from the other analyses and classified according to the question word used. An attempt was made to determine order of acquisition of 'wh' question constructions.

Explicator Constructions. Utterances serving purely communicative functions were labelled explicator constructions and were not analyzed syntactically. These utterances were described functionally rather than structurally. Two types of explicators were noted: the vocative, serving the function of calling or addressing as in "Mommy here" when Danielle called her mother in the other room, then ran to her and handed her a diaper; and the phatic, serving the function of establishing communication. Instances of phatic explicators are: "Oh babies," "Bye bye shoe," "Hello mommy," and "Night night baby." Malinowski (1949) applied the term "phatic communion" to utterances that serve to establish and maintain a feeling of social solidarity.

Bloom (1970) classified several forms such as, "hi+_____" in her data as pivot forms because they ". . . occurred in linear and invariant semantic-syntactic relation to the other forms with which they occurred" (Bloom, 1970, p. 32). Although the words in the explicator class in these data are similar to the pivot items in Bloom's work, these words in this sample could not be classified as pivots. The difference in classification arises because they do not meet the criteria for pivots as they have been previously described. One of the major descriptive

criteria for pivots is that they may not occur alone or in combination with one another (Menyuk, 1969). Although these explicator forms tend to occur in invariant sequence as Bloom suggests and cannot be combined with one another, they do in fact appear alone in many instances as single word utterances.

Indeterminate Constructions. Most natural languages observe word ordering constraints with regard to the three basic grammatical classes of subject, verb and object. Possible combinations given these three basic classes are: SVO, SOV, VOS, OSV, and OVS. Anthropological linguistic investigation of universal factors across languages has revealed that in no language does the object ordinarily precede the subject in base sentences (Greenberg, 1963). Thus, from the combinatorial possibilities of six word orders, only three ordinarily occur. They are: SVO, SOV and VSO. Each natural language assumes one of these word orders as its base form although other of the possible combinations do, in fact occur. English is considered to be a SVO language. There are instances, however, of SOV and VSO constructions.

Utterances considered to be indeterminate forms in this sample were those in which the expected word order for English was not observed. Although it was possible to interpret such an utterance, there was no related adult structure into which the utterance could be expanded retaining its meaning and observing word order constraints. Any utterances in which object or complement structures preceded subjects were classified as instances of indeterminate form. Also, any utterance in which the object or complement preceded the verb was classified as an indeterminate structure. Finally, utterances in which the verb or action preceded the

subject or actor were classed as indeterminate. Examples of these construction types are:

1. OS or CS - "Room Baba" was said by Emily after the examiner had asked "Where is Baba?"
2. OV or CV - "Fast run" as Lisa ran out of the room.
3. VS - "Cry Mona" was said by Emily when she observed baby Mona crying.

In addition, instances of double indication were considered indeterminate forms. In these cases the indicator was noted in two different ways, which are not common to English structure. Indication occurred first with the use of a pronoun and then with the use of the noun to which it referred. An example of utterances of this type is: "Want it sock."

VII. SEMANTIC CLASSIFICATIONS

Affirmative Semantic Categories

Analyses were undertaken of the semantic function of syntactic utterances. All utterances including an expansion of the subject or complement structure were involved in this analysis. All SS, CC, SSV, SSC, SCC, VCC, SSVV, SSCC and VVCC utterances from the syntactic analysis were classed according to the semantic function that the expansion served within the utterance as signaled by the relationship between the words and the non-linguistic context. Only utterances containing an expansion were included because they were the most interesting. A total of twelve semantic categories were included in this analysis. The categories were drawn from those described as productive semantic types by Bloom (1970)

and Antenucci et al (1972). These categories are described in Table 3.6.

Negative Semantic Categories

For the purpose of categorizing negative utterances, a modification of McNeill's analytical categorization (1968) of negative utterances described in Chapter 2 was employed. Each negative construction was placed into one of four possible negative categories: 1) Non-existence, when the child indicated the absence of an object in the environment. 2) Internal rejection, when the child rejected an offering. 3) Denial (falsity of statement), when the child denied the truth of a previous statement. 4) Denial (entailment), when the negation of one statement entailed the truth of another. The data revealed that while the entailment category did not occur in the form that McNeill described, the same semantic function was expressed by these subjects. The difference between McNeill's description and the one used in this study related to which part of the adult string was left unspecified. In McNeill's description of utterances in this category, the child utterance, "no pear" meant, "I don't have a pear, I have an apple." Utterances from this study expressing the same meaning took the form: "no apple." Thus, the child combined the negative element with the entailed component instead of the denied component as in McNeill's examples.

Finally, a table was drawn which allowed for the specification of the order of acquisition of these categories. With this method of analysis it was possible to note which types of semantic negation occurred first for each child. Later comparisons among children allowed for the specification of a universal versus an individual order of acquisition.

Table 3.6

Affirmative Semantic Categories

Semantic Category	Description	Utterance	Relevant Context
Genitive	Indication of possession that would answer the question 'Whose?'	"Mommy bun"	Marjorie observed her mother eating a bun. The nursery school teacher asked, "Whose bun is it?"
Attributive	The first element specifies an attribute of the second element and would answer the question 'What kind?'	"Rubber ball"	David N. selected a rubber ball from a selection of balls.
Locative	Indication of location that would answer the question 'Where?'	"In bed"	David N.'s response to the question, "Where is Mommy?"
Temporal	Indication of time that would answer the question 'When?'	"heavy now"	When Danielle tried to pick up a bin that she had filled with blocks.
Manner	Indication of the way something occurred that would answer the question 'How?'	"Other way"	Said after Greg had tried to put a block into the wrong part of a shape box.
Instrumental	Indication of causal object that would answer the question 'With what?'	"Nail in hammer"	As Greg pounded a toy nail with a hammer.
Explicit Deixis	Specific indicator or pointer that would answer the question 'Which?'	"That one"	The examiner asked, "Which book do you want?" Lisa pointed to a specific book.

Table 3.6 (continued)

Semantic Category	Description	Utterance	Relevant Context
Quantitative	Indication of number which would answer the question 'How many?'	"Two spoon"	Marjorie had several spoons in front of her.
Recurrence	Indication of repetition or recurrence of an action, event or object.	"More juice"	Greg is standing at the refrigerator holding an empty cup.
Dative	Indication of indirect object.	"give me this"	David S. to examiner when he couldn't reach a toy hammer.
Conjunctive	Indication of more than one referent or simultaneous aspects of the same referent.	"Sock shoe"	Examiner asked, "What do you wear on your feet?"
Disjunctive	Indication of either-or relationship between two referents.	"Bunny either"	David imitated the examiner's "Don't give it to me from the cat or the bunny either."

VIII. SINGLE WORD UTTERANCES

Single word utterances were examined only after syntactic constructions had emerged, thereby avoiding the holophrastic-non holophrastic issue. To analyze these single word productions, two assumptions were made: 1) Single word utterances produced during the early syntactic period come to directly represent the objects, actions or attributes they label. 2) Single word utterances at this stage may be classified according to their use in the adult language.

Each of the single words analyzed in this study were classified according to the following specification: a. Nouns-names of entities or objects. b. Verbs-names for actions. c. Adjectives-words which limited, described or qualified an entity or object. d. Adverbs-words which modified, described or limited an action. e. Others-all other single word utterances were left unspecified. A count was taken of the number of nouns, verbs, adjectives and adverbs produced singly for each session in which syntactic utterances were also produced. Percentages of these word classes were also computed in an attempt to discover any correlation between the word class used in single word utterances and the grammatical class specification noted in two word utterances at the same stage of development. The purpose of this analysis was to note whether the style of syntactic production related to the style of single word utterance production.

This analysis, however, proved an extremely difficult task. Because nouns and adjectives could function both as subjects or complements in syntactic utterances, the only possible correlations were between verbs

and verb specification. It was not possible to correlate adverbs to complement specification because nouns and adjectives as well as adverbs fell into this class. Therefore, the only correlation carried out was between single word utterance verbs and verbs specified in syntactic constructions.

CHAPTER 4

RESULTS

In this chapter the obtained data are discussed separately for each child. Both descriptive and tabular information are included. The data for each of the subjects are organized into the following categories:

Presyntactic Forms

Affirmative Syntactic Constructions: Complexity Analysis

Affirmative Syntactic Constructions: Grammatical Class Analysis

Negative Constructions

Questions

Explicator Constructions

Indeterminate Constructions

Single Word Utterances During Syntax

Affirmative Semantic Categories

Negative Semantic Categories

Since the emergence of syntax was the first point at which the corpora were analyzed, the session at which this occurred was labeled Session 0. Preliminary sessions, prior to the emergence of syntax, are indicated by negative numbers and all sessions in which syntax was observed are labeled in positive numbers.

I. LISA

At the first session in which Lisa was observed and recorded she was 15½ months old. All productions at that time were single words.

Three weeks later, at $16\frac{1}{2}$ months, the first emergence of productive syntax was noted. She was seen a total of five times. During four of the observational sessions syntactic constructions were produced. By Session +3 Lisa, at $19\frac{1}{2}$ months, had met the required criterion. The interval between the emergence of the first syntactic utterance and the time when 20% of her syntactic constructions specified a combination of SVC, was therefore three months (See Table 4.1).

Presyntactic Forms

Lisa's data were examined for the possible occurrence of presyntactic forms. At no point in the observation, however, did Lisa produce any dummy forms, reduplications, or empty forms. Lisa's data therefore reveals that not all children employ presyntactic forms. In this respect there appears to be some allowable option according to need or style of development.

Affirmative Syntactic Constructions: Complexity Analysis

The first syntax noted, and in fact the only syntactic constructions observed in Session 0, were Group I utterances. By Session +1 Lisa continued to expand single grammatical elements, and had also begun to specify Group II utterances, the combination of two grammatical relations. At Session +2 the data showed considerable increase in the number and type of constructions employed. Not only was there a sharp increase in the number of syntactic constructions (four syntactic constructions in Session 0, 29 affirmative syntactic constructions in Session +1, and 102 in Session +2), but Lisa now produced utterances characterized by two grammatical relations with one expansion, Group III utterances. There were

Table 4.1
Utterance Types: Lisa

Session	Age in Months	Time in Weeks	SWU	Pre- Syntax	Syntax					Indeter- minate	Total	MLU
					Affirm- ative	Nega- tive	Ques- tion	Expli- cator	Total			
-1	15½	-4	85	0	0	0	0	0	0	0	85	1.0
0	16½	0	98	0	4	0	0	0	4	0	102	1.03
+1	17½	+4	121	0	29	0	1	5	35	4	160	1.23
+2	18½	+8	84	0	102	0	2	28	132	8	223	1.78
+3	19½	+12	148	0	230	1	0	0	231	2	366	1.99

seven instances of VCC constructions, one instance of SVV, and seven examples of VVC constructions at Session +2. At this session Lisa also combined S, V, and C within one intonation marker for the first time specifying Group V utterances. Seven such constructions were recorded.

At Session +3 Lisa produced 230 affirmative syntactic constructions of which 88 constructions were of SVC form. At this session Lisa also produced one utterance specifying two grammatical relations both of which were expanded, Group IV utterances. Lisa's data appeared to indicate that the order of emergence of syntactic forms was regularized along the simplicity-complexity dimension described for this study. Except for constructions in which two grammatical relations were expanded, Lisa's pattern of development follows the expected course. The ordered steps from least to most complex for Lisa were: 1. single grammatical form expanded, 2. two grammatical forms combined, 3. two grammatical forms combined - one expanded, 4. three grammatical forms combined, 5. two grammatical forms combined and expanded (See Table 4.2).

Affirmative Syntactic Constructions: Grammatical Class Analysis

From the first session in which syntax was noted, Lisa produced utterances containing subjects, verbs and complements (See Table 4.3). It was noted that for the S, V, C analysis there was a relatively constant percentage of subjects, verbs, and complements throughout. Examination of utterances indicating grammatical relationships between elements revealed two consistent patterns. First, Lisa specified all three grammatical relations SV, SC, and VC from the first evidence of constructions involving two grammatical relations. Secondly, the greatest percentage

Table 4.2

Affirmative Syntactic Utterances - Number and
Percentage of Utterances at Each Level of
Syntactic Complexity: Lisa

Session	Group I	Group II	Group III	Group IV	Group V	Total
	SS VV CC	SV SC VC	SSV SSC VVC	SVV SCC VCC	SSVV SVC VVCC	
0	4 (100%)					4
+1	18 (62.1%)	11 (37.9%)				29
+2	35 (34.3%)	44 (43.1%)	15 (14.1%)		8 (7.8%)	102
+3	31 (13.4%)	84 (36.5%)	26 (11.3%)	1 (0.4%)	88 (38.2%)	230

Table 4.3

Subject, Verb and Complement Specification -
Number and Percentage: Lisa

Session	S	V	C	SV	SC	VC
+1	7 (15.5%)	13 (28.8%)	25 (55.5%)	3 (18.7%)	4 (25.0%)	9 (56.2%)
+2	7 (4.5%)	57 (37.2%)	89 (58.1%)	5 (8.4%)	2 (3.4%)	52 (88.1%)
+3	26 (10.3%)	94 (37.4%)	131 (52.1%)	10 (9.0%)	16 (14.4%)	85 (76.5%)

of grammatical relations which she produced specified Verb+Complement (VC) (See Table 4.3). Lisa's data indicate that not all children employ predicate constructions prior to the use of subject constructions as had been proposed by Gruber (1967a), Sinclair (1971) and Menyuk (1969).

Negative Constructions

Lisa produced only one negative construction during the entire observational period. At Session +3, as an imitation of the immediately preceding adult production, Lisa said, "No wheels" while looking at a broken car without wheels. The examiner had just said, "It has no wheels." Since negative constructions were non-productive for Lisa syntactic analysis is impossible.

Questions

Lisa produced three interrogative utterances employing 'wh' questions. All instances were imitations of adult forms. At Session +1 she said, "How you Daddy?" when Lisa and the examiner were looking at a book with a picture of a man. Her utterance followed the examiner's, "How are you, Daddy?" At Session +2 Lisa said, "How you do?" imitating her mother's utterance, "How do you do?" when she and her mother were playing. At that same session Lisa and her mother were playing with a toy phone and Lisa imitated exactly her mother's utterance, "How are you grandma Pearl?" There was no further evidence on any of the tapes that Lisa regularly employed 'wh' words to form questions.

Explicator Constructions

Lisa produced a total of 33 Explicator constructions. "Hi" or "Hello"

was used in this way ten times. Other explicator constructions employed "Bye" or "Bye bye" six times. There were eight instances of "Thank you" within an explicator frame, two of "Oh" and eight involving the use of "Here." In all cases the explicator constructions seemed to serve the purpose of establishing communication, thus functioning for phatic communion (See Appendix I).

Indeterminate Constructions

In Sessions +1, +2 and +3 Lisa produced a total of 14 utterances of indeterminate syntactic form. All these indeterminates were reversed order constructions in which the verb preceded the subject, the grammatical class analysis being based upon the semantic intent of the utterance in the non-linguistic context. For all instances of indeterminate construction see Appendix I.

Single-Word Utterances During Syntax

Single-word utterances produced at the time of syntactic emergence were analyzed only for the percentage of single word utterance verbs in relation to the percentage of verb specification in syntax, because verbs are the only word type in this data that can fall within only one grammatical class (See p.). Examination of Table 4.4 reveals that for Lisa the percentage of single word utterances is unrelated to syntactic specification.

Affirmative Semantic Categories

The affirmative semantic categories which Lisa employed productively throughout the observation period were examined. Although Lisa had

Table 4.4

Percentage of Single Word Utterance Verbs in Relation to
Percentage of Verb Specification in Syntax: Lisa

Session	Verbs Uttered as Single Words	Verbs Specified in Syntactic Utterances
+1	2.4%	28.8%
+2	7.1%	37.2%
+3	2.0%	37.4%

produced utterances which fell into seven semantic categories, only five of these were employed productively (See Table 4.5). The productive semantic categories were: genitive, attributive, locative, quantitative and recurrence.

Negative Semantic Categories

Lisa produced only one negative syntactic utterance, "No wheels." This utterance was produced while she was looking at a car whose wheels were missing and was imitative since it followed the examiner's, "It has no wheels." This single negative utterance signaled non-existence of the referent.

II. MARJORIE

At the first observation, Session -4, Marjorie was 15 months old and produced only single-word utterances. Single-word productions existed as

Table 4.5

Number of Utterances in Each Semantic Category: Lisa

Session	Geni- tive	Attrib- utive	Loc- ative	Temp- oral	Man- ner	Instru- mental	Deixis	Quanti- tative	Recur- rence	Da- tive	Con- junc- tive	Dis- junc- tive
0	1	2										
+1	2	9										
+2		14	5		1		2	2	3			
+3		25	7		1			2				

her only recorded means of linguistic communication until the fifth observation, Session 0, when she was 19-1/4 months old. At that point an abrupt shift occurred in the type of productions noted. Developmentally, Marjorie's movement from the first syntactic production to criterion for this study lasted $2\frac{1}{2}$ months. She began producing syntactic utterances at 19-1/4 months and at 21-3/4 months she had met the required criterion (See Table 4.6).

Presyntactic Forms

The data for Marjorie revealed only minimal use of presyntactic forms. In all sessions, Marjorie produced six utterances which included a dummy element and reduplicated forms. She produced dummy forms at Sessions +1 and +4. Reduplicated forms occurred at Sessions +2 and +3 (See Appendix II).

Affirmative Syntactic Constructions: Complexity Analysis

Marjorie's first true syntactic utterances, at Session 0, included verb and complement expansions as Group I utterances. She produced one verb and fifteen complement expansions. Also appearing at Session 0 was the first evidence of the combination of grammatical elements, Group II utterances. Marjorie produced 11 utterances employing SV combinations, ten SC constructions and nine VC constructions. In total she produced 46 incomplete syntactic utterances at this session.

At Session +1, only two weeks later, Marjorie continued to specify the expansion of complements, and also began to specify subject expansion. The combination of two grammatical relations continued to appear,

Table 4.6

Utterance Types: Marjorie

Session	Age in Months	Time in Weeks	SWU	Pre- Syntax	Syntax					Indeter- minate	Total	MLU
					Affirm- ative	Nega- tive	Ques- tion	Expli- cator	Total			
					-4	15	-17	38	0			
-3	16	-13	29	0	0	0	0	0	0	29	1.0	
-2	17	-9	64	0	0	0	0	0	0	64	1.0	
-1	18	-5	83	0	0	0	0	0	0	83	1.0	
0	19-1/4	0	80	0	46	0	0	7	53	0	133	1.39
+1	19-3/4	+2	40	1	47	0	0	2	49	2	92	1.77
+2	20	+3	75	1	77	1	0	6	84	4	164	1.73
+3	20-3/4	+6	25	1	54	1	0	4	59	4	89	2.13
+4	21-3/4	+10	24	3	72	0	0	3	75	3	105	2.36

including one utterance in which two grammatical relations occurred with one expansion, Group III utterances. SVC combinations, Group V utterances, were noted for the first time. At Session +1 Marjorie produced 34 incomplete syntactic constructions and 13 SVC constructions. Although the total number of syntactic utterances decreased from Session 0 to Session +1, the complexity of the utterances increased.

Session +2 was recorded only one week after Session +1. In this session, while a greater number of utterances in each class were produced, there were no new utterance types. Group III utterances became more productive, reaching a total of twelve. In all, Marjorie produced 66 incomplete syntactic constructions and 11 SVC constructions at Session +2.

At Session +3, when Marjorie was 20-3/4 months old, there was a steady growth of the already existing classes. The number of expansions of a single grammatical element, Group I, and combinations of two grammatical elements, Group II, continued to increase. The utterance category of two grammatical elements including one expansion, Group III, began to include SSV, SSC, and VVC groups in addition to the SCC type that had appeared earlier. In total, 36 incomplete syntactic utterances and 18 SVC constructions were produced.

At 21-3/4 months, in Session +4, Marjorie reached criterion. She produced 28 SVC constructions which constituted 38.8% of her syntactic output. Again, there was no drastic change in Marjorie's development. Each category that had been previously specified continued to be part of her repertoire (See Table 4.7).

Table 4.7
Affirmative Syntactic Utterances - Number and
Percentage of Utterances at Each Level of
Syntactic Complexity: Marjorie

Session	Group I	Group II	Group III	Group IV	Group V	Total
	SS VV CC	SV SC VC	SSV SSC VVC	SVV SCC VCC	SSVV SSCC VVCC	SVC
0	16 (35.3%)	30 (64.7%)				46
+1	11 (23.4%)	22 (46.8%)	1 (2.1%)		13 (27.6%)	47
+2	22 (28.5%)	32 (41.5%)	12 (15.5%)		11 (14.2%)	77
+3	7 (12.9%)	23 (42.5%)	6 (11.1%)		18 (33.3%)	54
+4	9 (12.5%)	16 (22.2%)	19 (26.3%)		28 (38.8%)	72

Affirmative Syntactic Constructions:
Grammatical Class Analysis

From the first appearance of syntax Marjorie produced utterances which specified all three classes. The data for Marjorie showed no consistent pattern in percentage of usage of each of these classes across time (See Table 4.8).

A review of utterances indicating a grammatical relation between elements showed that Marjorie specified SV, SC and VC relations from the first recorded appearance of syntax. Further, Marjorie's data appears

Table 4.8
 Subject, Verb and Complement Specification -
 Number and Percentage: Marjorie

Session	S	V	C	SV	SC	VC
0	11 (23.9%)	10 (21.7%)	25 (54.3%)	11 (36.6%)	10 (33.3%)	9 (30.0%)
+1	18 (42.8%)	6 (14.2%)	18 (42.8%)	9 (39.1%)	8 (34.7%)	6 (26.0%)
+2	42 (38.1%)	17 (15.4%)	51 (46.3%)	13 (29.5%)	27 (61.3%)	4 (9.0%)
+3	28 (41.7%)	13 (19.4%)	26 (38.8%)	10 (33.3%)	17 (56.6%)	3 (10.0%)
+4	15 (18.9%)	29 (36.7%)	35 (44.3%)	7 (20.0%)	6 (17.1%)	22 (62.8%)

to add additional evidence to the hypothesis that not all children do in fact specify predicate constructions prior to specification of subjects since all three grammatical relations appeared at Session 0 (See Table 4.8).

Negative Constructions

Marjorie produced two negative constructions during the entire observational period. At Session +2 Marjorie said, "No baby" as she pulled several toys from the toy shelf but left the doll in place. In Session +3 she said, "No dolls bed." This utterance was a partial imitation of her mother's utterance, "There are no dolls in the bed." In both examples the earliest form of syntactic structure for negation, $no+ ______$, was employed

(Bellugi, 1967). These examples however, do not reach the criterion for productivity.

Questions

Marjorie produced no utterances in which a 'wh' word was used to signal the interrogative. Therefore, from her data it is impossible to know the degree of knowledge, if any, that she has regarding 'wh' word questions.

Explicator Constructions

Explicator productions were rather plentiful in Marjorie's data and were of both vocative and phatic type. Vocative explicator constructions consisted of 15 utterances in which "Mommy" functioned as the explicator and served the purpose of calling or directing attention. There were also seven instances of phatic explicators that served the purpose of establishing communication. These were, "Night-night," "Bye-bye," "Hello," and "Hi." For all instances of explicator constructions see Appendix II.

Indeterminate Constructions

Marjorie produced a total of 13 indeterminate constructions at all sessions. In all instances there was a reversal of the order of the word based upon the determination made regarding the semantic intent of the utterances. For example, Marjorie said, "Slide on Marjorie" as she climbed up the sliding board. Based upon the non-linguistic context it appeared that she was referring to herself as the actor, however, the subject of the utterance followed the apparent verb and complement. For all instances of indeterminate construction see Appendix II.

Single Word Utterances During Syntax

A comparison of the percentage of single word utterance verbs with syntactic verb specification indicates no direct correlation. The percentages of verbs specified in syntax and verbs used at the same session in single word utterances were quite different (See Table 4.9).

Table 4.9

Percentage of Single Word Utterance Verbs in Relation to
Percentage of Verb Specification in Syntax: Marjorie

Session	Verbs Uttered as Single Words	Verbs Specified in Syntactic Utterances
0	2.5%	21.7%
+1	17.5%	14.2%
+2	8.0%	15.4%
+3	0	19.4%
+4	20.8%	36.7%

Affirmative Semantic Categories

Marjorie produced seven semantic categories productively over all sessions. At Session 0 the attributive and recurrent categories became productive. At Session +1 the genitive and locative categories were added. Deixis was productively produced for the first time at Session +2. Finally, at the last observational session, Session +4, the quantitative and conjunctive categories were productively produced (See Table 4.10).

Table 4.10

Number of Utterances in Each Semantic Category: Marjorie

Session	Geni- tive	Attrib- utive	Loc- ative	Temp- oral	Man- ner	Instru- mental	Deixis	Quanti- tative	Recur- rence	Da- tive	Con- junc- tive	Dis- junc- tive
0	2	6	2						3			
+1	2	4	3	1					1			
+2	2	7	5		1		3	2	3	1	1	
+3		5	1	1			2	3			1	
+4	4	10	8			1	1	1	1	1	1	

Negative Semantic Categories

Marjorie produced only two negative constructions. At Session +2 she said, "No baby" while pulling toys from the shelf and leaving the doll. This utterance signaled rejection. In Session +3 she indicated non-existence when she said "No dolls bed." She imitated the mother's utterance, "There are no dolls in the bed." Marjorie had been looking for several dolls and had looked into the toy crib.

III. EMILY

At the first observational session Emily, 18-3/4 months old, produced only single word utterances. Four weeks later the first indication of her ability to deal with syntactic relations was apparent. She was 19-3/4 months old at that time and 19 weeks later at 24 $\frac{1}{2}$ months she reached the required criterion (See Table 4.11).

Presyntactic Forms

Of the three possible presyntactic forms, Emily produced only constructions of the Dummy+_____ type. These constructions were employed 25 times in Sessions 0 through +5. By Session +6 they had dropped from use. For all instances of presyntactic form see Appendix III.

Affirmative Syntactic Constructions: Complexity Analysis

At the second observational session, Session 0, the first indications of syntax were the expansion of a single grammatical element, Group I utterances. At that time Emily specified expanded subjects, expanded verbs, and expanded complements. Session +1 occurred four weeks later and

Table 4.11
Utterance Types: Emily

Session	Age in Months	Time in Weeks	SWU	Pre- Syntax	Syntax				Indeter- minate	Total	MLU
					Affirm- ative	Nega- tive	Ques- tion	Expli- cator			
-1	18-3/4	-4	97	0	0	0	0	0	0	97	1.0
0	19-3/4	0	93	3	5	0	0	2	7	103	1.06
+1	20-3/4	+4	108	5	22	3	0	4	29	142	1.22
+2	21-1/2	+7	156	3	35	1	2	11	48	211	1.26
+3	22-1/2	+11	115	5	51	0	8	7	66	192	1.40
+4	23	+13	128	3	32	8	2	6	48	132	1.28
+5	23-1/2	+15	147	6	78	2	6	3	89	253	1.46
+6	24	+17	72	0	105	0	1	1	107	181	1.79
+7	24-1/2	+19	44	0	68	0	1	0	69	114	2.01

revealed considerable syntactic advancement. Emily was now producing Group II utterances in which two grammatical elements were related, and development indicated an ordered movement toward syntactic complexity as defined for this study. At this session she also produced one utterance in Group III.

In Sessions +2 through +5 development consisted of increased production of previously produced syntactic types. Session +2 yielded 33 incomplete syntactic constructions. There was a steady increase in the number of these incomplete syntactic utterances, reaching 72 by Session +5. Session +2 also revealed the first instance of SVC combinations. These constructions increased only slightly during this period. At Session +2 Emily produced two utterances containing SVC specification. At Session +5 she produced six SVC sentence forms.

Session +6 signaled the next significant structural change in Emily's language skills. There was an abrupt increase in the number of SVC constructions produced at this time (14 SVC utterances in contrast to six at Session +5). Also, this was the first session in which Emily produced utterances in which both grammatical elements were expanded, Group IV utterances, (SSCC) and (VVCC). Data for the last session with Emily, Session +7, were collected only two weeks after Session +6. While the Session +7 data reveal few changes, the criterion for this study was reached. Emily's productions included 48 incomplete syntactic constructions and 20 SVC sentence forms. Thus, 29.4% of Emily's syntactic constructions at this session specified all three grammatical elements in one intonation frame (See Table 4.12).

Table 4.12
 Affirmative Syntactic Utterances - Number and
 Percentage of Utterances at Each Level of
 Syntactic Complexity: Emily

Session	Group I	Group II	Group III	Group IV	Group V	Total
	SS VV CC	SV SC VC	SSV SSC VVC	SVV SCC VCC	SSVV SSCC VVCC	SVC
0	5 (100%)					5
+1	15 (68.2%)	6 (27.3%)	1 (4.5%)			22
+2	13 (37.1%)	17 (48.6%)	3 (8.6%)		2 (5.7%)	35
+3	21 (41.2%)	23 (45.1%)	4 (7.8%)		3 (5.9%)	51
+4	8 (25.0%)	23 (71.8%)			1 (3.1%)	32
+5	33 (42.3%)	35 (44.8%)	4 (5.1%)		6 (7.6%)	78
+6	35 (33.3%)	43 (40.9%)	11 (10.6%)	2 (1.9%)	14 (13.3%)	105
+7	20 (29.4%)	23 (33.8%)	5 (7.4%)		20 (29.4%)	68

Affirmative Syntactic Constructions:
Grammatical Class Analysis

Examination of the subject, verb and complement specification for Emily reveals that from the first occurrence of syntactic construction all three types of grammatical classes occurred. Although there was a greater percentage of complement structures than subject or verb structures, all three types emerged simultaneously. Furthermore, the percentage of subject, verb and complement specification changed considerably from session to session. A stable ratio of subject-to-verb-to-complement was never established. Instead, the percentages fluctuated as shown in Table 4.13.

Examination of utterances in which two grammatical elements are related revealed that for Emily, all three grammatical relationships of SV, SC and VC were specified from the first. Although Emily concentrated most heavily on VC relations, SC and SV specification occurred to a considerable degree (See Table 4.13).

Negative Constructions

Emily produced 14 negative constructions. All negative constructions were of the same syntactic form: no+____. Utterances included: Neg+Verb, Neg+Noun, Neg+Verb+Noun and Neg+Adj+Noun. This type of negative syntactic structure, where the negative element is placed before an essentially affirmative string, has been reported as the earliest type of negative formation (Bellugi, 1967). For all instances of negative syntactic constructions see Appendix III.

Table 4.13
 Subject, Verb and Complement Specification -
 Number and Percentage: Emily

Session	S	V	C	SV	SC	VC
+1	6 (20.6%)	12 (41.3%)	11 (37.9%)	3 (42.8%)	2 (28.5%)	2 (28.5%)
+2	6 (11.3%)	26 (49.0%)	21 (39.6%)	5 (25.0%)	1 (5.0%)	14 (70.0%)
+3	16 (21.3%)	20 (26.6%)	39 (52.0%)	5 (18.5%)	10 (37.0%)	12 (44.4%)
+4	6 (11.1%)	29 (53.7%)	19 (35.1%)	5 (21.7%)	1 (4.3%)	17 (73.9%)
+5	24 (21.6%)	38 (34.2%)	49 (44.1%)	10 (25.6%)	8 (20.5%)	21 (53.8%)
+6	30 (20.9%)	44 (30.7%)	69 (48.2%)	5 (8.9%)	18 (32.1%)	33 (58.9%)
+7	10 (13.5%)	22 (29.7%)	42 (56.7%)	5 (18.5%)	5 (18.5%)	17 (62.9%)

Questions

Emily produced both 'what' and 'where' questions during the observational period. 'What' questions emerged in Session +2. 'Where' questions first occurred in Session +3, but were far more frequent in number. Emily produced 17 where+_____ questions in Sessions +3 through +7 and three what+_____ questions in Sessions +2 through +7. In most cases 'what' or 'where' preceded a single word, usually a noun. There was one instance of 'where'+verb. The verb in this case was "Happened." Finally,

there were two examples of 'wh'+ (two words). At Session +2 she said, "What all this?" and in Session +5 Emily said, "Where toys car?" For all instances of question formation see Appendix III.

Explicator Constructions

Emily began producing utterances which fell in the explicator class at Session 0. She produced 32 Explicator+_____ utterances. All of Emily's explicator utterances specified a phatic function of establishing and maintaining communication. Although there were a fairly large number of explicator constructions, they were all of the following types:

hi+_____grandma

uhoh+_____broke

bye+_____Mona

oh+_____baby

look+_____Daddy

goodnight+___monkey

For all instances of explicator constructions, see Appendix III.

Indeterminate Constructions

Emily produced a total of 15 indeterminate constructions in all the observational sessions. In all cases there was a reversal of the order of the words based upon the determination made regarding the semantic intent of the utterances. For example, Emily said, "The fall down money" as pennies fell out of a purse. The only possible interpretation for this utterance would be, "The money fell down." Emily's utterance indicates a reversal of part of the subject with the verb complement structure. For all instances of indeterminate constructions see Appendix III.

Single Word Utterances During Syntax

Single word utterances produced at the time of syntactic emergence were compared for the percentage of single word utterance verbs against the percentage of verb specification in syntax. According to Table 4.14 it is apparent that for the same developmental period, Emily's single word utterances do not correlate with her syntactic specification.

Affirmative Semantic Categories

Emily specified seven semantic categories: genitive, attributive, locative, manner, deixis, quantitative, and recurrence. In Session +1 the genitive and attributive classes were employed productively. Locative utterances became productive at Session +2. The quantitative and recurrent classes became productive at Session +3. The semantic category manner became productive at Session +4. Finally, at Session +6, deixis appeared for the first time (See Table 4.15).

Negative Semantic Categories

Emily produced 15 negative constructions. All negative utterances signaled either rejection or denial. Negative constructions occurred at Sessions +1, +2, +4, and +5. Rejection, as a form of semantic negation occurred first in the data. At Session +1 Emily produced three utterances which signaled rejection. All instances of negative constructions can be found in Appendix III.

Table 4.14
 Percentage of Single Word Utterance Verbs in Relation to
 Percentage of Verb Specification in Syntax: Emily

Session	Verbs Uttered as Single Words	Verbs Specified in Syntactic Utterances
+1	21.5%	41.3%
+2	28.2%	49.0%
+3	16.5%	26.6%
+4	21.1%	53.7%
+5	30.6%	34.2%
+6	27.0%	30.7%
+7	15.9%	29.7%

IV. DANIELLE

Danielle was 16½ months old when she was first seen. She was seen for two consecutive sessions during which time she produced only utterances of the single word type. At Session 0, when she was 18-1/4 months old, she began to produce presyntactic utterances. True syntax did not appear until eight weeks later when Danielle was 20-1/4 months old. Danielle met the criterion for this study at Session +5 when she was 22-1/4 months old. Sixteen weeks had lapsed from the emergence of pre-syntax until the criterion was met, but only eight weeks between the emergence of true syntax and the required 20% of her syntactic utterances

Table 4.15

Number of Utterances in Each Semantic Category: Emily

Session	Geni- tive	Attrib- utive	Loc- ative	Temp- oral	Man- ner	Instru- mental	Deixis	Quanti- tative	Recur- rence	Da- tive	Con- junc- tive	Dis- junc- tive
0	2	1										
+1	4	2	1					1				
+2	1	1	2		1			1	1		1	
+3	4	10			1			2	2			
+4		1	1									
+5		16	2	1	2			1	2		1	
+6	1	24			2		3					
+7	3	7	5		2		2	2				

specified a SVC construction (See Table 4.16).

Presyntactic Forms

At Session 0, the third observational session, Danielle produced 25 presyntactic forms. They consisted of two Dummy+Verb forms: "I found" as Danielle found the apple puzzle piece, and "ride" as she walked over to her bicycle plus 23 reduplications. At Session +1 Danielle produced 32 presyntactic forms all of which were reduplications. Session +2 revealed 87 reduplicated presyntactic forms and nothing else. At Session +3 Danielle produced the last of her presyntactic forms, consisting of 23 reduplications. See Appendix IV for all instances of presyntactic forms.

Affirmative Syntactic Constructions: Complexity Analysis

True syntactic constructions did not emerge for Danielle until Session +3 when she was 20-1/4 months old. At that time she began producing utterances of several types. Danielle produced 33 Group I utterances involving an expansion of a single grammatical element (SS, CC), 38 Group II utterances consisting of two grammatical elements (SV, SC and VC), one Group III utterance composed of two grammatical elements with one expansion (VCC), and nine SVC utterances, Group V. Session +3 therefore represented an abrupt shift in syntactic development.

At Session +4 syntactic constructions included 149 single grammatical elements expanded, Group I utterances, 87 utterances specifying the combination of two grammatical elements, Group II utterances, 5 utterances in which two grammatical elements were combined with one expansion, Group III, and 15 SVC constructions. Session +5 indicated still greater

Table 4.16
Utterance Types: Danielle

Session	Age in Months	Time in Weeks	SWU	Pre- Syntax	Syntax				Indeter- minate	Total	MLU	
					Affirm- ative	Nega- tive	Ques- tion	Expli- cator				Total
-2	16-1/2	-7	62	0	0	0	0	0	0	62	1.0	
-1	17-1/2	-3	183	0	0	0	0	0	0	183	1.0	
0	18-1/4	0	195	25	0	0	0	0	0	222	1.10	
+1	19	+3	166	32	0	0	0	0	0	198	1.16	
+2	19-1/2	+5	155	87	0	0	0	0	0	242	1.36	
+3	20-1/4	+8	134	23	81	0	0	2	83	5	245	1.50
+4	21-1/4	+12	103	0	256	2	0	4	262	10	375	1.88
+5	22-1/4	+16	190	0	219	5	0	6	230	13	433	1.85

growth in Danielle's production of syntactically complex constructions. Less complex syntactic forms decreased in frequency of occurrence and more highly complex ones increased. Utterances composed of single grammatical elements expanded dropped from 149 to 80. Group II utterances dropped from 87 to 58. Group III utterances increased significantly in number. At Session +5 Danielle produced 29 such constructions, up from five at Session +4. Also, Group IV utterances consisting of two grammatical elements, both expanded, appeared for the first time. Danielle produced four SSCC constructions in this session. At Session +5 the final criterion for this study was met. Danielle produced 48 SVC combinations, constituting 22.0% of all syntactic constructions (See Table 4.17).

Table 4.17

Affirmative Syntactic Utterances - Number and
Percentage of Utterances at Each Level of
Syntactic Complexity: Danielle

Session	Group I	Group II	Group III		Group IV	Group V	Total
	SS VV CC	SV SC VC	SSV SSC VVC	SVV SCC VCC	SSVV SSCC VVCC	SVC	
+3	33 (40.7%)	38 (46.9%)	1 (1.2%)			9 (11.1%)	81
+4	149 (58.2%)	87 (34.0%)	5 (2.0%)			15 (5.8%)	256
+5	80 (36.5%)	58 (26.5%)	29 (13.2%)	4 (1.8%)		48 (22.0%)	219

Affirmative Syntactic Constructions:
Grammatical Class Analysis

Examination of Danielle's subject, verb, and complement specification indicated that from Session +3, when true syntax first appeared, all three grammatical class specifications were present. This specification from session to session indicated a relative stability in the ratios among the three grammatical classes occurring in the same session (See Table 4.18).

A review of the utterances in which Danielle produced grammatical relations between elements indicated that she specified SV, SC and VC relationships from the first appearances of these construction types (See Table 4.18).

Table 4.18

Subject, Verb and Complement Specification -

Number and Percentage: Danielle

Session	S	V	C	SV	SC	VC
+3	36 (32.4%)	17 (15.3%)	58 (52.2%)	10 (25.6%)	22 (56.4%)	7 (17.9%)
+4	74 (21.6%)	36 (10.5%)	232 (67.8%)	15 (16.1%)	57 (61.2%)	21 (22.5%)
+5	57 (22.2%)	37 (14.4%)	162 (63.3%)	5 (5.6%)	51 (57.9%)	32 (36.3%)

Negative Constructions

During the observational period Danielle produced seven negative constructions, one of which was an imitation. All non-imitative

constructions were syntactically formed as no+____. One negative utterance was a partial imitation of the examiner's statement, "Not on the floor today." Danielle responded with, "Not floor today." Although imitative utterances are generally considered to be no more sophisticated structurally than non-imitative utterances (Menyuk, 1969), in this instance the syntactic structure employed in imitation differed from the usual pattern employed in self-productive utterances. See Appendix IV for all instances of negative syntactic construction.

Questions

Danielle produced no 'wh' questions in the sessions recorded.

Explicator Constructions

Danielle's explicator constructions consisted of six vocatives and six phatic forms. Explicator+____ construction types emerged in Session +3 and were present throughout the rest of the data. She produced two explicator constructions in Session +3, four in Session +4 and six in Session +5. Vocative explicators which Danielle employed were "Mommy," and "Andrya." Phatic explicators were, "Oh," "Night," and "Bye." See Appendix IV for all examples of explicator constructions.

Indeterminate Constructions

Utterances of indeterminate form consisted of two reversed order constructions (i.e. "In door this" as Danielle tried to put the toy slide through the front door of the doll house) and three utterances in which two words referred to the same object (i.e. "Turn it box" as Danielle wanted the examiner to turn the toy bin around). See Appendix IV for

all examples of indeterminate constructions.

Single Word Utterances During Syntax

Comparisons between the percentage of single word utterance verbs and the percentage of verb specification in syntactic utterances are reported in Table 4.19. There appears to be a correlation between the percentages of single word utterance verbs produced and the percentage of verb specification in syntax at each session for Danielle.

Table 4.19

Percentage of Single Word Utterance Verbs in Relation to
Percentage of Verb Specification in Syntax: Danielle

Session	Verbs Uttered as Single Words	Verbs Specified in Syntactic Utterances
+3	13.4%	15.3%
+4	9.7%	10.5%
+5	13.6%	14.4%

Affirmative Semantic Categories

Danielle productively employed seven semantic categories over all observed sessions: genitive, attributive, locative, temporal, deixis, quantitative, and recurrence. In Session +6 the genitive, attributive, and locative categories were employed for the first time. At Session +7 the temporal, deictic, quantitative and recurrent categories emerged productively (See Table 4.20).

Table 4.20

Number of Utterances in Each Semantic Category: Danielle

Session	Genitive	Attributive	Locative	Temporal	Manner	Instrumental	Deixis	Quantitative	Recurrence	Dative	Conjunctive	Disjunctive
+6	6	15	3				1	2	2			
+7	11	26	13	4	1		2	3	13			
+8	5	39	25	1	1		5	4	6		1	

Negative Semantic Categories

Danielle produced seven negative constructions, all of which expressed non-existence or rejection. The initial expressions of negative semantic categories indicated rejection and this category continued to be the more prevalent one (See Appendix IV).

V. GREG

Greg was seen for his first observational session at 20 months. The first evidence of syntactic production was noted four weeks later at Session 0. Greg was seen a total of nine times over a period of 30 weeks. He was 21 months old at the time of his first productive syntactic utterance. He did not meet the required criterion for this study until he was 27-1/4 months old. Greg required just over 6 months to progress from his first syntactic utterance until the criterion for this study was met (See Table 4.21).

Presyntactic Forms

During the observational period Greg made considerable use of presyntactic forms. Specifically, he employed dummy elements and reduplicated forms. Examination of Table 4.21 reveals that the presyntactic forms continued to be produced throughout all observational sessions. See Appendix V for all examples of presyntactic utterances.

Affirmative Syntactic Constructions: Complexity Analysis

Analysis of Greg's syntactic utterances in Groups I through V along the simplicity-complexity dimension was undertaken. Group I utterances,

Table 4.21
Utterance Types: Greg

Session	Age in Months	Time in Weeks	SWU	Pre- Syntax	Syntax				Indeter- minate	Total	MLU
					Affirm- ative	Nega- tive	Ques- tion	Expli- cator			
-1	20	-4	46	0	0	0	0	0	0	46	1.0
0	21	0	75	1	1	0	0	0	1	77	1.01
+1	22	+4	123	1	3	0	0	0	3	128	1.02
+2	23	+8	192	16	12	0	0	0	12	235	1.05
+3	24	+12	245	14	17	2	0	0	19	284	1.10
+4	24-3/4	+15	180	5	13	2	0	1	16	204	1.08
+5	25-1/2	+18	311	23	54	9	0	4	66	417	1.18
+6	26-1/2	+22	154	3	108	3	0	5	116	273	1.55
+7	27-1/4	+26	67	2	98	12	0	2	112	181	1.92

composed of a single expanded grammatical element (CC), appeared non-productively at Session 0. At Session +1 Greg produced one utterance involving the expansion of a single grammatical element (VV). Group II utterances, composed of two grammatical elements combined, appeared at Session +1 as well. The number of Group I and II utterances increased in the following sessions but no advance in the use of more syntactically complex structures was evidenced until Session +5.

At Session +5 Greg produced one utterance combining two grammatical elements, one of which was expanded. At Session +6 these utterance types became productive, reaching a total of 23 Group III utterances. Also at Session +6 Greg produced one non-productive occurrence of two grammatical elements, both expanded, Group IV. This was also the first appearance of SVC constructions. By Session +7 all levels of syntactic complexity had emerged and criterion was reached. Greg produced 23 SVC constructions constituting 23.5% of his syntactic output at Session +7 (See Table 4.22).

Affirmative Syntactic Constructions:
Grammatical Class Analysis

Table 4.23, dealing with subject, verb and complement specification, reveals that at Session 0 Greg produced utterances in all three classes although in no case were the utterance types productive. At Session +2 the verb and complement classes became productive, but the subject class did not become productive until Session +4. The heaviest concentration of specification remained on complement structures throughout the obtained corpora.

Examination of utterances in which a grammatical relation between the elements existed indicated that Greg's heaviest concentration was

Table 4.22

Affirmative Syntactic Utterances - Number and

Percentage of Utterances at Each Level of

Syntactic Complexity: Greg

Session	Group I	Group II	Group III	Group IV	Group V	Total
	SS VV CC	SV SC VC	SSV SSC VVC	SVV SCC VCC	SSVV SSCC VVCC	SVC
0	1 (100%)					1
+1	1 (33.3%)	2 (66.6%)				3
+2	3 (25.0%)	9 (75.0%)				12
+3	14 (82.3%)	3 (17.7%)				17
+4	7 (53.9%)	6 (46.1%)				13
+5	36 (66.6%)	17 (31.4%)	1 (1.8%)			54
+6	45 (41.6%)	35 (32.4%)	23 (21.3%)	1 (1.0%)	4 (3.7%)	108
+7	28 (28.6%)	30 (30.6%)	16 (16.3%)	1 (1.0%)	23 (23.5%)	98

Table 4.23
 Subject, Verb and Complement Specification -
 Number and Percentage: Greg

Session	S	V	C	SV	SC	VC
+1	1 (20.0%)	2 (40.0%)	2 (40.0%)	0 (0.0%)	1 (50.0%)	1 (50.0%)
+2	1 (5.0%)	8 (40.0%)	11 (55.0%)	0 (0.0%)	1 (11.1%)	8 (88.8%)
+3	0 (0.0%)	3 (15.0%)	17 (85.0%)	0 (0.0%)	0 (0.0%)	3 (100%)
+4	1 (52.6%)	5 (26.3%)	13 (68.4%)	0 (0.0%)	1 (16.6%)	5 (83.3%)
+5	11 (15.2%)	10 (13.8%)	51 (70.8%)	2 (11.1%)	8 (44.4%)	8 (44.4%)
+6	27 (16.3%)	43 (26.0%)	95 (57.5%)	6 (10.0%)	17 (28.3%)	37 (61.6%)
+7	16 (12.6%)	38 (30.1%)	72 (57.2%)	3 (61.2%)	12 (24.4%)	34 (69.4%)

upon VC constructions throughout all sessions. At Session +3 the only relational structures which appeared specified the VC relation. SC constructions did not emerge as productive until Session +4. SV constructions did not appear until Session +5 and were not productive until Session +6.

All of the early non-productive SC constructions that Greg produced were utterances in which the missing grammatical form would appear to be a copula. For example, Greg said, "Here Gregie" while he was hiding in

the corner. The examiner had asked, "Where's Greg?" A completed form of this utterance might be, "Here is Gregie." This can be the assumed meaning since the examiner had just asked, "Where is Greg?" Utterances in which the copula functions as the verb may be considered to be structurally different from utterances with true verbs. The copula never appeared in any of Greg's utterances. Because none of Greg's SC constructions were of the type where the missing element was a true verb, it is not possible to verify the SC constructions. These data are summarized in Table 4.23 and all instances of SC constructions can be found in Appendix V.

Negative Constructions

Greg began to produce negative utterances in Session +3 and continued to do so throughout the rest of the observational period. Totally, he produced 28 negative constructions. Twenty-seven of the negative syntactic utterances were of the type not _____. In one instance the negative element was "not": Greg said, "Not it," when a shape did not fit into the shape box. This utterance occurred at Session +5. In any case, Greg's negative construction rule was: Neg+_____ with the negative element preceding the essentially affirmative string. For all instances of negative constructions see Appendix V.

Questions

Greg produced no 'wh' questions in the obtained corpora.

Explicator Constructions

Explicator constructions first appeared at Session +4. Greg

continued to employ these communicatively based utterances throughout the rest of the sessions. He employed a total of 12 explicators, 11 of which functioned phatically. The 11 phatic explicators were: "Upsee," "Bye," "Bye-bye," "Uh-oh," "Oh," and "Hi." The one vocative explicator was: "Mommy." See Appendix V for all examples of explicator constructions.

Indeterminate Constructions

Greg produced no indeterminate constructions in any of the observational sessions.

Single Word Utterances During Syntax

A comparison of the percentage of single word utterance verbs with syntactic verb specification indicated no correlation. The percentages differed significantly at each session (See Table 4.24).

Affirmative Semantic Categories

Greg's acquisition of the 12 semantic categories was examined for the entire observational period. Greg produced 10 semantic categories productively in this period. The order of emergence was such that locative and explicit deictic forms emerged first at Session +3. At Session +5 the attributive and recurrent categories appeared. In Session +6 the genitive, manner, instrumental, quantitative, and dative were productively produced. At the final session, +7, the conjunctive semantic category was produced (See Table 4.25).

Negative Semantic Categories

Greg produced 28 negative constructions involving three types of

Table 4.24
 Percentage of Single Word Utterance Verbs in Relation to
 Percentage of Verb Specification in Syntax: Greg

Session	Verbs Uttered as Single Words	Verbs Specified in Syntactic Utterances
+1	8.9%	40.0%
+2	18.0%	40.0%
+3	22.8%	15.0%
+4	17.7%	26.3%
+5	21.2%	13.8%
+6	16.8%	26.0%
+7	5.9%	30.1%

semantic negation. Nonexistence and modified denial entailment occurred for the first time at Session +3. Rejection appeared for the first time in Session +5. The greatest number of negative utterances expressed modified entailment. For example, at Session +3 Greg said, "No water." Greg had been pushing a boat on the rug and saying, "Water." The examiner said, "You're pretending it's water, but it's really a rug." The expanded form of Greg's utterance would be, "No it's not a rug, it's water." For all instances of negative semantic categories see Appendix V.

Table 4.25

Number of Utterances in Each Semantic Category: Greg

Session	Genitive	Attributive	Locative	Temporal	Manner	Instrumental	Deixis	Quantitative	Recurrence	Dative	Conjunctive	Disjunctive
0							1					
+1												
+2			1				1		1			
+3			2				1					
+4				1			3					
+5		6	8		2	1	3		2	1		
+6	4	16	26		4	2	3	3	4	3	2	
+7	1	11	14			1	2	2	2	1	2	

VI. DAVID S.

David S. was 18 months old at the first observational session. He produced only single word utterances at that time. Syntactic constructions emerged four weeks later. David S. was seen a total of ten times before the syntactic criterion for this study was met. In Session +8, when David was 26 months old, utterances in which SVC structure were employed exceeded 20% of his total syntactic output. Twenty-seven weeks had elapsed from the time syntax had emerged until the last session (See Table 4.26).

Presyntactic Forms

At Session 0 David S. began producing presyntactic constructions, he continued to employ these forms throughout the entire sample. There was a marked decrease in their use in Sessions +7 and +8, when syntax was firmly established. Table 4.26 indicates this developmental pattern. David's data showed evidence of three types of presyntactic constructions. At Session 0, dummy elements and reduplicated forms appeared. Dummy element constructions were present throughout all sessions. Reduplicated forms continued only through Session +6. At Session +1 empty form constructions emerged. David S. used a single form, /*ɪdi*/, in all empty form constructions. /*ɪdi*/ appeared in combination with both nouns and verbs. For example, David said, /*ɪdiɔpɾn* / while he gave his mother an apple to be cut and /*ɪdi ɔpɾɔ* / was produced as David tried to put his slipper into a box. The criterion used for the determination of empty forms was the presence of an idiosyncratic 'word' used in combination

Table 4.26

Utterance Types: David S.

Session	Age in Months	Time in Weeks	SWU	Pre- Syntax	Syntax					Indeter- minate	Total	MLU
					Affirm- ative	Nega- tive	Ques- tion	Expli- cator	Total			
-1	18	-4	34	0	0	0	0	0	0	0	34	1.0
0	19	0	147	2	9	0	4	4	17	0	167	1.13
+1	20	+4	139	9	13	0	2	0	15	0	164	1.16
+2	21	+8	99	3	18	0	0	2	20	0	122	1.18
+3	22	+12	126	3	8	0	3	1	12	0	141	1.19
+4	23	+16	144	17	56	0	7	4	67	0	238	1.29
+5	24	+20	203	7	42	0	2	0	46	0	255	1.18
+6	24-3/4	+23	116	8	100	0	0	14	114	0	238	1.56
+7	25	+24	78	1	107	12	8	6	133	0	212	1.84
+8	26	+27	31	1	81	6	6	5	98	0	130	2.32

with numerous 'real' words such that the idiosyncratic word had no apparent semantic referent. David's use of /*rdi*/ in this way was noted in Sessions +1, +2 and +4. At Session +1 David S. was 20 months old. He was 23 months at Session +4. The life span of the empty form as a type of presyntactic construction was therefore considerably shorter than either dummy or reduplicated forms. See Appendix VI for all instances of presyntactic constructions.

Affirmative Syntactic Constructions: Complexity Analysis

The complexity analysis of David S.'s syntactic constructions revealed that Group I utterances, expanded complement structures (CC), appeared as the first syntactic utterances. At the next session, +1, David produced eight Group I utterances (CC) and five Group II utterances (two grammatical elements combined). This level of complexity was maintained through Session +3 with no marked increase in the number of utterances produced.

In Sessions +4 and +5 David S. produced Group V utterances, SVC forms. Although these syntactically complete constructions appeared prior to the production of utterances in which two elements were combined with one expansion, Group III utterances, in apparent violation of the proposed complexity dimension used in this analysis, inspection of these SVC utterances revealed that these SVC forms in Sessions +4 and +5 were of a special character. All SVC utterances produced in Sessions +4 and +5 were of the form:

I love _____ baby
 raisin
 Mommy
 Andrya
 Papa
 Jill

In each case the contextual information revealed that these utterances were produced when David and his mother were involved in a language interaction routine. Language routines may be considered language 'games' that are repetitive and are carried out in the same fashion on a regular basis. They usually consist of naming and labeling procedures. This particular routine consisted of the following verbal interactions:

Mother: "Who do you love? I love _____."
 David: "I love Mommy."
 Mother: "Who else do you love? I love _____."
 David: "I love baby."
 Mother: "Who else do you love? I love _____."
 David: "I love Jill."

Thus, each of these SVC constructions represent overlearned patterns rather than novel instances in the usual sense. The unexpected sequence of emergence in David's data may therefore only superficially appear to violate the proposed order of syntactic complexity.

The data obtained during Session +6 further support this explanation. At this time Group III constructions became productive. Also, SVC utterances appeared which were not imitative, rote productions but rather novel constructed forms. They were: "Snoopy sit up," "Here we go," "Mommy open this," "Snoopy fall down," and "Mommy go cook."

At Session +7 David's production of Group III utterances increased sharply (14 at Session +7 in contrast to 3 at Session +6). Also, Group IV utterances, in which two combined grammatical relations were both expanded, appeared. At Session +7 all levels of syntactic complexity were therefore produced. In Session +8, the ratio of complete to incomplete syntactic constructions increased sufficiently to meet final criterion. David S. produced 30 SVC constructions which constituted 37.1% of his

affirmative syntactic output (See Table 4.27).

Affirmative Syntactic Constructions:
Grammatical Class Analysis

Classification of syntactic constructions revealed a heavy dependence on complement structure. Table 4.28 indicates that complements were specified to the exclusion of other grammatical types for the first session in which syntactic combinations were noted. Verb specification became productive at Session +1; subject specification was not productive until Session +3. Complement specification continued as the predominate structure throughout the obtained data. There was a consistent pattern of decreasing dependence upon complements and increasing use of subjects and verbs as David's syntactic abilities developed.

In the analysis dealing with grammatical relations between elements, the VC relation was produced first at Session +1. The SV relation was not produced until Session +6. Constructions involving SC relations did not reach productivity until Session +3. The early non-productive SC constructions implied a deleted copula, i.e. "That a book" as David pointed to a book. Because there was never an instance in which copula structures were manifested, it is difficult to verify the apparent copula deletion in SC constructions. In any case, at Session +6 all three grammatical relations appeared. For David S., predicate specification appeared to occur first (See Table 4.28).

Negative Constructions

David S. produced a total of 18 negative constructions beginning at Session +7. Seventeen of these negative constructions were formed by

Table 4.27
 Affirmative Syntactic Utterances - Number and
 Percentage of Utterances at Each Level of
 Syntactic Complexity: David S.

Session	Group I	Group II	Group III	Group IV	Group V	Total
	SS VV CC	SV SC VC	SSV SSC VVC	SVV SCC VCC	SSVV SSCC VVCC	SVC
0	9 (100%)					9
+1	8 (61.5%)	5 (38.5%)				13
+2	13 (72.2%)	5 (27.8%)				18
+3	5 (62.5%)	3 (37.5%)				8
+4	19 (33.9%)	29 (51.8%)			8 (14.3%)	56
+5	22 (52.3%)	18 (42.8%)			2 (4.7%)	42
+6	54 (54.0%)	37 (37.0%)	3 (3.0%)		6 (6.0%)	100
+7	38 (35.5%)	38 (35.5%)	14 (13.1%)	3 (1.8%)	14 (13.1%)	107
+8	21 (25.9%)	15 (18.5%)	14 (17.3%)	1 (1.2%)	30 (37.1%)	81

Table 4.28

Subject, Verb and Complement Specification -

Number and Percentage: David S.

Session	S	V	C	SV	SC	VC
0	0 (0.0%)	0 (0.0%)	9 (100%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
+1	1 (5.8%)	3 (17.6%)	13 (76.4%)	0 (0.0%)	1 (25.0%)	3 (75.0%)
+2	1 (4.3%)	4 (8.7%)	18 (76.2%)	0 (0.0%)	1 (20.0%)	4 (80.0%)
+3	1 (9.0%)	2 (18.1%)	8 (72.7%)	0 (0.0%)	1 (33.3%)	2 (66.6%)
+4	0 (0.0%)	30 (38.9%)	47 (61.0%)	0 (0.0%)	0 (0.0%)	29 (100%)
+5	0 (0.0%)	18 (31.0%)	40 (68.9%)	0 (0.0%)	0 (0.0%)	18 (100%)
+6	15 (12.3%)	30 (24.5%)	77 (63.1%)	7 (18.4%)	8 (21.0%)	23 (60.5%)
+7	28 (18.9%)	43 (29.0%)	77 (52.0%)	16 (29.0%)	12 (21.8%)	27 (49.0%)
+8	14 (17.7%)	24 (30.3%)	41 (51.9%)	9 (31.0%)	5 (17.2%)	15 (51.7%)

placing the negative element, "No," in front of an affirmative utterance. In all cases the structure was No+Noun or No+Noun+Noun. At the final observational session David said, "Chuchu no go," as a neighbor was putting the leash on her dog. This is the only instance of his incorporation of a negative element directly into the sentence structure. For all instances of negative constructions see Appendix VI.

Questions

David's first form of questioning involving 'wh' words occurred in Session 0 and was purely imitative. He imitated the examiner's, "Where is it?" three times and "Where is she?" once. This type of construction became firmly established in later sessions and was used in non-imitative utterances. Although there was variation in the word choice, the structure, "Where is _____," showed evidence of being an indivisible unit since neither "Where" nor "Is" were ever used in other combinations. The "Where is" construction was employed with the following variations:

Where is _____ it
 he
 she
 tennis shoe
 chuchu
 the truck
 you Snoopy
 jalopy
 soda
 Alan

There was a total of 23 "Where is _____" questions. "What" questions emerged in Session +4 and reached a total of nine. For all instances of 'wh' question formation see Appendix VI.

Explicator Constructions

David S. produced a total of 36 explicator constructions of which eight were vocatives. Vocative explicators were: "Mommy" and "Daddy." He also produced 27 phatic explicators. They were "Hi," "Uh-oh," "Oh," "Bye-bye," "Thank you," "Okay," and "Hello." For all examples of explicator constructions see Appendix VI.

Indeterminate Construction

David S. produced no utterances of indeterminate structure.

Single Word Utterances During Syntax

Table 4.29 indicates that for David S. it is not possible to detect a correlation between the grammatical class of single word utterances and the grammatical class specification of syntactic construction in terms of percentages of utterances produced.

Table 4.29

Percentage of Single Word Utterance Verbs in Relation to
Percentage of Verb Specification in Syntax: David S.

Session	Verbs Uttered as Single Words	Verbs Specified in Syntactic Utterances
+1	6.4%	17.6%
+2	8.8%	8.7%
+3	13.4%	18.1%
+4	9.0%	38.9%
+5	9.8%	31.0%
+6	22.4%	24.5%
+7	11.5%	29.0%
+8	3.2%	30.3%

Affirmative Semantic Categories

Of 12 possible semantic categories, David S. productively employed ten. They emerged in the following order: attributive (Session +1), locative and manner (Session +2), recurrence (Session +4), instrumental

(Session +6), genitive, deictic and quantitative (Session +7), and dative and conjunctive (Session +8) (See Table 4.30).

Negative Semantic Categories

David S. employed all four types of semantic negation. Utterances signaled nonexistence, rejection, denial and modified denial entailment. All four types of semantic negation appeared contemporaneously at Session +7. For all instances of negative semantic categories see Appendix VI.

VII. DAVID N.

David N. was first seen when he was 16 months old. At this session the first evidence of early syntactic acquisition was noted. He was observed and his language productions recorded a total of eleven times before the syntactic criterion for this study was reached. A period of 36 weeks elapsed from Session +1 to Session +11 (See Table 4.31).

Presyntactic Forms

David N.'s pattern of linguistic development during this observation indicated high dependence upon presyntactic constructions. Table 4.31 indicates his use of presyntactic forms throughout the observational period. David N. employed dummy elements and reduplicated forms beginning at Session +1. See Appendix VII for all examples of David's presyntactic constructions.

Affirmative Syntactic Constructions

An analysis of David N.'s true syntactic productions revealed that

Table 4.30

Number of Utterances in Each Semantic Category: David S.

Session	Geni- tive	Attrib- utive	Loc- ative	Temp- oral	Man- ner	Instru- mental	Deixis	Quanti- tative	Recur- rence	Da- tive	Con- junc- tive	Dis- junc- tive
0		2			1							
+1		1	1		1				1	1		
+2		1	2		1							
+3		2			1							
+4		7	2		1	1			4			
+5	1	7		1		1	1	1	3			
+6		10	3		3	2			1	1	1	
+7	3	17	7		7	2	2	3	2		1	
+8	5	17	1		2	1	3	2	1	3	1	

Table 4.31

Utterance Types: David N.

Session	Age in Months	Time in Weeks	SWU	Pre- Syntax	Syntax				Indeter- minate	Total	MLU	
					Affirm- ative	Nega- tive	Ques- tion	Expli- cator				Total
+1	16	0	38	13	4	0	0	0	4	0	67	1.18
+2	17	+4	38	29	2	0	0	0	2	0	98	1.02
+3	18	+8	89	6	3	0	0	0	3	0	98	1.03
+4	19	+12	115	5	11	0	2	0	13	0	133	1.10
+5	20	+16	153	22	58	0	0	0	58	2	235	1.29
+6	20-3/4	+19	189	56	25	0	4	0	29	0	274	1.25
+7	21-1/4	+21	242	76	36	4	0	0	40	0	358	1.25
+8	22-1/4	+25	505	123	37	1	0	1	39	4	671	1.15
+9	23-1/4	+29	272	51	78	0	0	0	78	1	402	1.31
+10	24	+32	332	64	131	0	0	1	132	1	529	1.39
+11	25	+36	97	6	272	3	1	1	277	7	387	2.05

Group I utterances, in which a single grammatical element was expanded, emerged at Session +1. At Session +2, a single Group II construction, in which two grammatical elements were combined, came into use. Group II utterances became productive at Session +3. David N. increased his use of these utterance types without the addition of a higher level of syntactic complexity through Session +4. At Session +5 there appeared to be a developmental shift. Not only was there a far greater number of incomplete syntactic constructions in each class, but also Group III constructions emerged as productive. David produced five utterances in this class. They consisted of SSC, SSV and SCC grammatical combinations. Session +6 revealed a regression which continued until the tenth observation. During this period, from the time David N. was 20-3/4 months old until he was 24 months, there was no further evidence of the Group III construction types that had emerged at Session +5. However, the number of utterances in Groups I and II increased significantly in this period. No explanation is suggested for this pattern.

Session +10 revealed David N.'s first real growth in syntactic complexity in six months. At this session utterances containing two grammatical elements with one expansion appeared. One SVC construction was also produced. At Session +11 David produced 116 Group II utterances (as contrasted with 27 at Session +10), 26 Group III utterances (as contrasted with three at Session +10), and one non-productive occurrence of a Group IV utterance in which two grammatical elements were combined and expanded. SVC constructions numbered 55 and the syntactic criterion for this study was reached (See Table 4.32).

Table 4.32
 Affirmative Syntactic Utterances - Number and
 Percentage of Utterances at Each Level of
 Syntactic Complexity: David N.

Session	Group I	Group II	Group III	Group IV	Group V	Total
	SS VV CC	SV SC VC	SSV SSC VVC	SVV SCC VCC	SSVV SSCC VVCC	SVC
+1	4 (100%)					4
+2	1 (50.0%)	1 (50.0%)				2
+3	1 (33.3%)	2 (66.6%)				3
+4	6 (54.5%)	5 (45.4%)				11
+5	34 (58.6%)	19 (32.7%)	5 (8.6%)			58
+6	8 (32.0%)	17 (68.0%)				25
+7	11 (30.5%)	25 (69.4%)				36
+8	17 (45.9%)	20 (54.1%)				37
+9	56 (71.1%)	21 (26.9%)			1 (1.2%)	78
+10	100 (76.3%)	27 (20.6%)	3 (2.2%)		1 (0.7%)	131
+11	74 (27.2%)	116 (42.6%)	26 (9.5%)	1 (0.3%)	55 (20.2%)	272

Affirmative Syntactic Constructions:
Grammatical Class Analysis

Examination of utterances according to grammatical class specification revealed that complement structures were produced first. Subject and verb specification did not become productive until Session +5. Throughout the data complements were the most frequent class specified (See Table 4.33).

Utterances in which grammatical relations held between two elements revealed that David N. began by specifying only the VC relation and that it continued to be the predominant relational specification (See Table 4.33).

Negative Constructions

David produced a total of eight negative constructions. The syntactic structure of the negative constructions appeared to be related to the category of semantic negation that was specified. See section I. Negative Semantic Categories for David N. in this chapter, p.

Questions

During the nine months in which David N. was observed, he produced only three different interrogatives employing question words. "What" and "Where" questions were the only types produced. He said, "What that?" twice in Session +4, both times while pointing to an object. No other "What" questions occurred during later tapings. In Session +6 David said, "Where Mommy?" on four separate occasions. In all cases he was talking to the examiner. His mother had left the house earlier in the session and he repeatedly referred to her absence. The only other

Table 4.33
 Subject, Verb and Complement Specification -
 Number and Percentage: David N.

Session	S	V	C	SV	SC	VC
+1	0 (0.0%)	0 (0.0%)	4 (100%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
+2	0 (0.0%)	0 (0.0%)	2 (100%)	0 (0.0%)	0 (0.0%)	1 (100%)
+3	0 (0.0%)	0 (0.0%)	3 (100%)	0 (0.0%)	0 (0.0%)	2 (100%)
+4	1 (8.3%)	1 (8.3%)	10 (83.3%)	1 (20.0%)	0 (0.0%)	4 (80.0%)
+5	21 (25.6%)	13 (15.8%)	48 (58.5%)	4 (16.6%)	12 (50.0%)	8 (33.3%)
+6	11 (26.1%)	17 (41.4%)	14 (33.3%)	8 (47.0%)	0 (0.0%)	9 (52.9%)
+7	16 (26.2%)	16 (26.2%)	29 (47.5%)	7 (28.0%)	9 (36.0%)	9 (36.0%)
+8	4 (7.0%)	18 (31.5%)	35 (61.4%)	2 (10.0%)	2 (10.0%)	16 (80.0%)
+9	5 (5.0%)	19 (19.1%)	75 (75.7%)	2 (9.5%)	2 (9.5%)	17 (80.9%)
+10	4 (2.4%)	29 (17.9%)	129 (79.6%)	1 (3.3%)	2 (6.6%)	27 (90.0%)
+11	35 (10.4%)	110 (32.7%)	191 (56.8%)	9 (6.9%)	23 (17.5%)	99 (75.5%)

"Where" question produced was in Session +11 and was addressed to his mother. David asked, "Where going?" when his mother put her coat on.

Explicator Constructions

David produced only three explicator constructions. They were "Bye-bye smoke" as David waved his hand to move the cigarette smoke away from himself, "Bye soda" as David finished drinking his soda, and "Hi Teddy" after he had picked up his teddy bear from the bed. All three of these utterances served a phatic function.

Indeterminate Constructions

Indeterminate form constructions in which the expected word order for English was not observed appeared in David N.'s data. He produced 15 such constructions. Until Session +11 all of these indeterminate forms were reversed order constructions. He had produced ten utterances of this type. At the eleventh session he produced five constructions in which two words were used to refer to one object in the context, i.e. "Nother one chick" as David pointed to another chicken in a book. For all instances of indeterminate construction see Appendix VII.

Single Word Utterances During Syntax

A comparison of single word utterance verbs with syntactic verb specification indicated no direct correlation. The percentage of verbs specified in syntax and verbs used at the same session in single word utterances were quite different (See Table 4.34).

Table 4.34

Percentage of Single Word Utterance Verbs in Relation to
Percentage of Verb Specification in Syntax: David N.

Session	Verbs Uttered as Single Words	Verbs Specified in Syntactic Utterances
+4	20.8%	8.3%
+5	13.7%	15.8%
+6	10.0%	41.4%
+7	3.7%	26.2%
+8	9.4%	31.5%
+9	7.7%	19.1%
+10	9.3%	17.9%
+11	12.3%	32.7%

Affirmative Semantic Categories

David N. productively employed ten different semantic categories, emerging in the following order: genitive and locative (Session +4), attributive and deictic (Session +5), recurrent (Session +8), temporal, manner, quantitative and conjunctive (Session +10), and dative (Session +11) (See Table 4.35).

Negative Semantic Categories

David N. produced three types of semantic negation: nonexistence, denial and modified denial entailment. All three occurred for

Table 4.35

Number of Utterances in Each Semantic Category: David N.

Session	Genitive	Attributive	Locative	Temporal	Manner	Instrumental	Deixis	Quantitative	Recurrence	Dative	Conjunctive	Disjunctive
+1	1	1							1			
+2	1											
+3			1									
+4	4		2									
+5	6	9	4				5	1	1		1	
+6	1	4	1									
+7		2	4									
+8	1	6	3	1	1				3	1		
+9		17	5		1		1		5		1	
+10	7	33	12	2	1		2	6	7	1	1	1
+11	1	28	32	1	2		2	9	17	2	1	

the first time at Session +7. Denial was the most frequent type of negation expressed. Nonexistence and modified denial entailment occurred only in the seventh session. David's method for forming negatives which signaled nonexistence and modified entailment-nonentailment was the same. The negative element, "No," was placed before a single word. For example, David said, "No ball" when he could not find a ball. This signaled nonexistence. David also said, "No box" when he was standing in a box. The examiner said, "Come out of there," and David would not. This signaled modified denial entailment since the expanded form would be, "No, I don't want to come out, I want to stay in the box."

The syntactic structure employed in the formation of negatives which signaled denial took several forms. In Session +7 David said, "It no" when the examiner had a spinning music box and asked, "Should I put it down?" In Session +8, David said, "No no down" when the examiner said, "We'd better take some of these blocks down before they fall." In Session +11 David said, "Can't do it" and "Can't turn it" when he was trying to spin the top but could not make it turn. Denial, which occurred most frequently, appeared to be the type of negation for which David N. tried out new ways of forming the negative.

CHAPTER 5

DISCUSSION: STYLES OF SYNTACTIC EMERGENCE

I. RATE OF ACQUISITION

The analyses of the emerging language produced by the seven children studied were of two basic types: emergent syntactic structure and developing semantic categories. These analyses were examined in an effort to reveal inherent differences in style of language acquisition. The most outstanding difference among the children was the number of months required to pass from the single-word utterance stage to the time when early syntactic structure was established.

The time lapse between the appearance of the first syntactic utterance and the time when at least 20% of the child's syntactic forms included a SVC structure varied from two and one half to nine months. This measure of difference among the children evidenced what had been long recognized, that speed of language acquisition varies considerably from child to child. In fact, whenever language acquisition differences have been discussed, the speed of acquisition has been described as the primary, if not the only, distinction in language acquisition style (Brown, Cazden, and Bellugi, 1969).

For the seven children examined in this study this speed of acquisition measure did not vary along a continuum. Rather, it was possible to divide the children according to whether their syntax emerged rapidly or slowly. The rapid syntactic developers proceeded from single word

utterances to criterion in less than four and one half months. The slow developers required at least six and one half months to reach criterion. Marjorie reached criterion in two and one half months. Lisa required three months to reach criterion. Emily produced the required percentage of SVC utterances in four and one half months. Danielle reached criterion in exactly four months. Those four children were considered to be rapid syntactic developers. Greg required six and one half months to progress from his first syntactic utterance until criterion for this study was met. David S. reached criterion in just under seven months and David N. required nine months to reach the same stage of syntactic development. Greg, David S. and David N. were grouped as slow syntactic developers. It is obvious that the slow and the fast syntactic developers are divided according to sex. All the boys in the study developed new syntactic classes slowly, while for the girls, syntactic development was considerably more rapid. It should be noted that the measure used was the rate of acquisition or the number of months from the emergence of two word utterances until syntactic criterion was met, rather than the chronological age of the child at the time when this criterion was reached. Rate of acquisition therefore clearly distinguishes the group of boys from the group of girls. The boy/girl split appears unrelated to chronological age at syntactic emergence because these ages varied considerably (Lisa, 15-1/2 months; Marjorie, 19-1/4 months; Emily, 19-3/4 months; Danielle 20-1/4 months; Greg, 21 months; David S., 19 months; David N., 16 months). The boy/girl split may however be partly related to age at criterion, because all the boys were older at this point than any of the girls. However, in some cases, the difference was

small (for example, Emily, 24-1/2 months; David N., 25 months).

This observation supports the familiar speculation that girls develop language more rapidly than boys. This finding is therefore not startling although it does cast some light on the specific differences between boys and girls. Although it is interesting to note that children may develop syntactically slowly or rapidly and that this distinction appears to be sex-related, it would be more enlightening to know whether the kind of structure that is used is related to this speed-sex difference. In other words, are there style differences which are related to speed of syntactic acquisition?

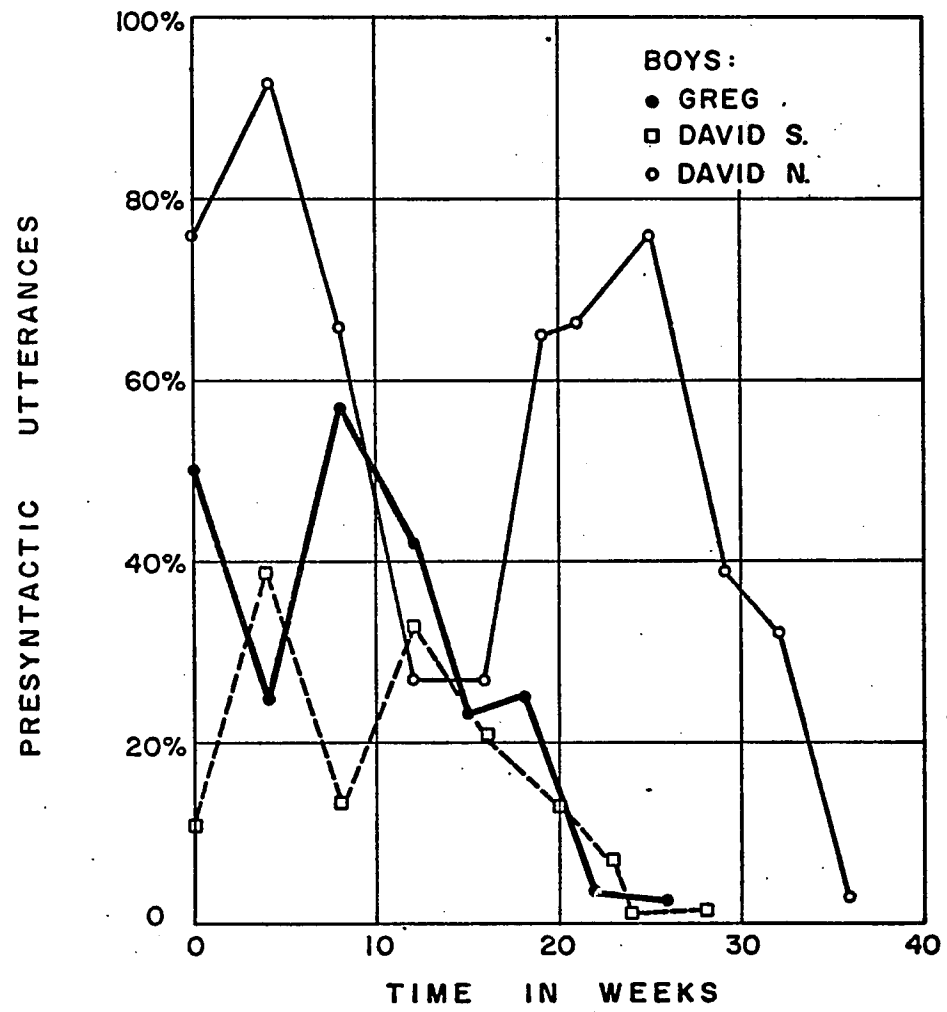
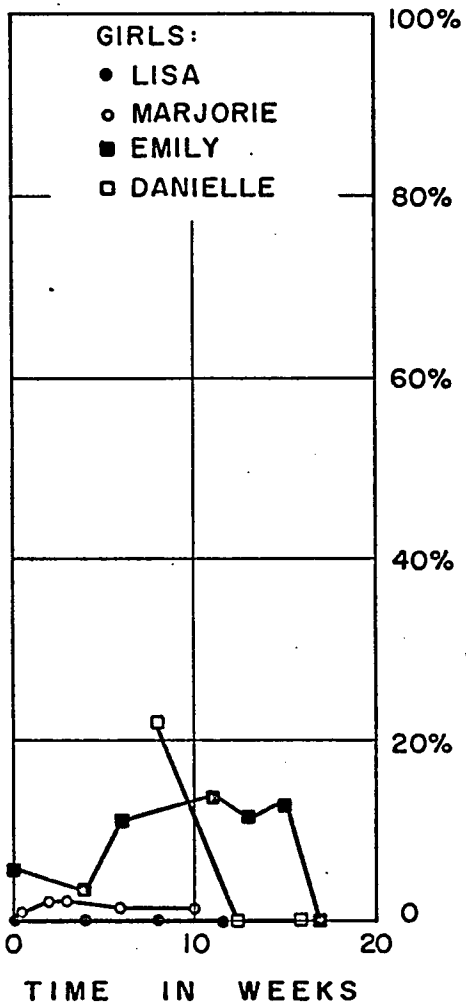
The data reveals many indications that this is the case. The type of structure which the rapid girls versus the slow boys employ in this early syntactic period appears to differ in several ways.

II. PRESYNTACTIC FORMS

The first indication of structural differences in style was in the use of presyntactic forms. Figure 5.1 reveals these differences. The use of dummy forms, reduplication, and empty forms was extensive for those children who developed syntax slowly. The presyntactic forms emerged at the onset of syntax for the slow developers and were employed throughout the observational period. The rapid developers either did not use these forms at all, or if they did appear, they were used only to a limited degree, for a very short time, or only prior to the onset of syntactic constructions.

For Greg, the use of presyntactic forms constituted 22.1% of all

Fig. 5.1 Percent of presyntactic utterances out of presyntactic and syntactic utterances after the productive emergence of syntax.



produced syntax. David S.'s data revealed that 13.5% of his syntactic output was composed of presyntax. David N. depended the most heavily upon these constructions, constituting 63.9% of his total syntactic output. Also relevant here was the boys' continued use of these forms. Each slow developer began employing these forms at the onset of syntax and continued to do so even when criterion was reached. This heavy and continued dependence upon these presyntactic forms signals their possible function. They appear to allow the child to combine elements without having to deal with reference, word order constraints, and relational indicators. The presyntactic forms appear to be a way of easing into syntax. That is, the children were able to practice the combining of elements without having to deal with the substance of these combined elements.

The rapid developers appear not to use these forms as a transition to syntax. Lisa did not employ presyntactic forms at all. Marjorie and Emily employed them only minimally, constituting 3.1% and 6.3% respectively of their total syntactic utterances. Danielle was the only rapid developer to employ these forms to any significant degree. Over the entire observational period, the presyntactic forms made up 31.0% of Danielle's total syntactic output. The distribution of presyntactic forms in Danielle's data was completely different, however, from the distribution noted for any of the boys. Danielle employed these forms only prior to the establishment of true syntactic relations. Upon reexamination, Danielle's data reveal an abrupt shift in her developmental pattern at Session +3. Prior to that time Danielle produced only presyntax. At Session +3, the session at which true syntax appeared, the presyntactic

forms constituted only 4.1% of Danielle's total output and dropped out completely after this session. The minimal use of presyntactic forms for the rapid syntactic developers may reflect the ease with which these children acquire control over syntactic relations.

These results suggest that the presyntactic forms serve a bridging function. They allow for a transition from single word utterances into syntax without requiring the child to deal with content or semantic function. This finding also suggests that it is possible to separate the syntactic and the semantic functions of language. Furthermore, this easing into syntax by the slow developers may signal greater difficulty with syntactic relations. For the rapid developers, where presyntax is nonexistent or minimal, the acquisition of syntax may not present the same problems.

III. COMPLEXITY ANALYSIS

In the original analysis each child's utterances were grouped according to a hypothesized simplicity-complexity dimension. Within this complexity model Group I utterances consisted of an expanded single grammatical element (SS, VV, CC). Group II constructions were composed of two grammatical elements combined (SV, SC, VC). Utterances in Group III combined two grammatical elements one of which was expanded (SSV, SSC, VVC, SVV, SCC, VCC). Group IV was composed of utterances in which two grammatical elements were combined and expanded (SSCC, SSVV, VVCC). Finally, at the highest level of complexity examined in this study, Group V, three grammatical relations were combined (SVC).

The rate differences noted in the length of time required to reach criterion were reflected in the simplicity-complexity dimension described above and displayed in Figure 5.2. The rapid developers moved very quickly from Group I utterances through to criterion once syntax emerged. At each succeeding session, the next highest level of complexity was represented. In contrast, the slow developers acquired a level of syntactic complexity, became productive with it, and then employed that particular type for several weeks before reaching the next highest level of complexity. This was especially true between utterances in Groups II and III. Occasionally a child remained at a particular level of syntactic complexity for several months during which no higher level of syntactic complexity was observed.

IV. INDETERMINATE CONSTRUCTIONS

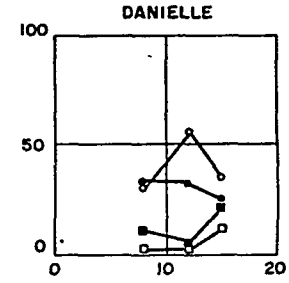
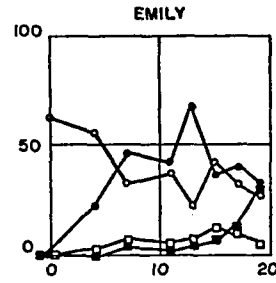
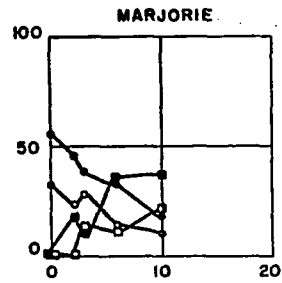
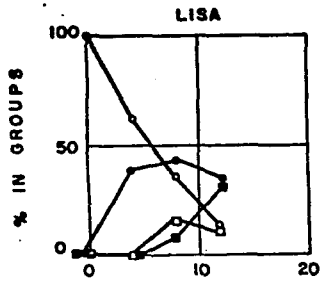
The use of indeterminate constructions--those utterances in which word order constraints for English were not observed--seemed also to be related to rate of acquisition. For the rapid developers, indeterminate forms constituted between 3.3% and 3.8% of the total syntactic output. The slow developers used significantly fewer indeterminate constructions. Greg never employed constructions in which word order constraints were ignored. David S. produced only one such construction. The indeterminate constructions in David N.'s data constituted 1.7% of his total syntactic output. Figure 5.3 displays this difference in the use of indeterminate forms.

As a further distinction, the girls employed reversed ordering almost exclusively for indeterminate constructions. Only three utterances

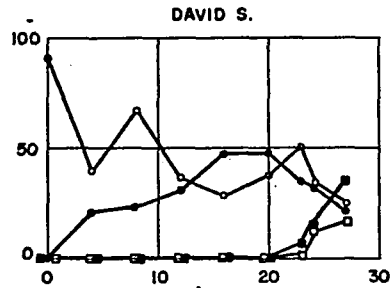
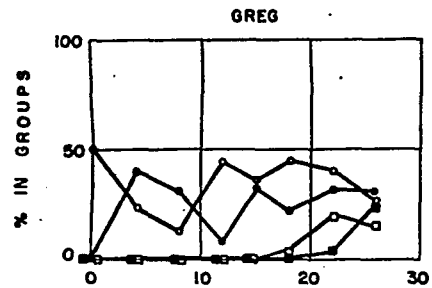
Fig. 5.2 Percent of utterances in Groups I, II, III, and V in weeks after the emergence of syntax.

K E Y

- GROUP I UTTERANCES
- GROUP II UTTERANCES
- GROUP III UTTERANCES
- GROUP IV UTTERANCES



IN WEEKS AFTER EMERGENCE OF SYNTAX



IN WEEKS AFTER EMERGENCE OF SYNTAX

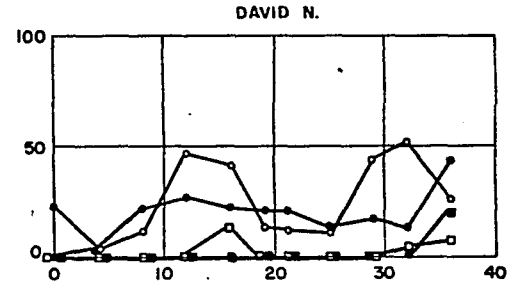
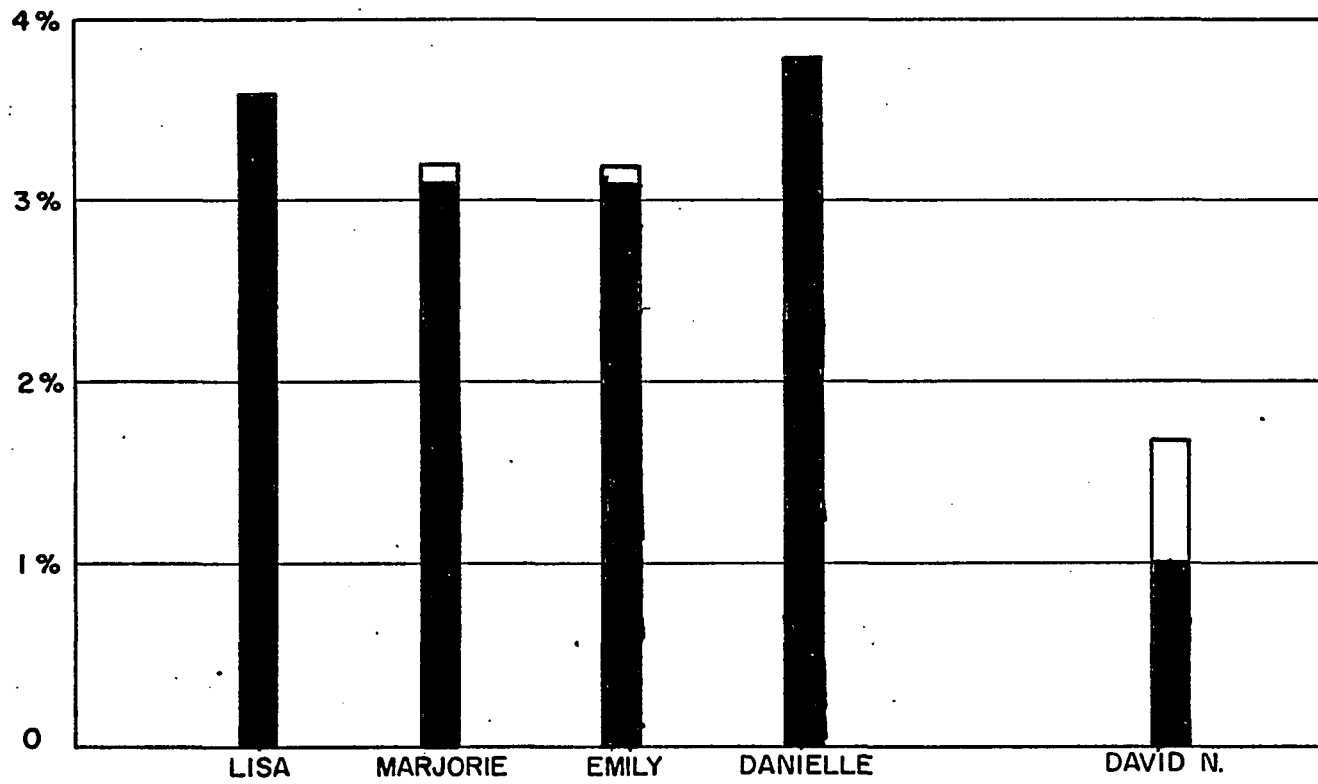


Fig. 5.3 Percent of indeterminate constructions out of total syntactic output and percent of reversed order and double indication in indeterminate constructions.

REVERSED ORDER
DOUBLE INDICATION



contained double indication out of 71 indeterminate constructions for Lisa, Marjorie, Emily and Danielle. David N., the only slow developer to employ indeterminate constructions, produced approximately equal numbers of reversed ordering constructions and double indication. Thus, not only did the percentage of indeterminate constructions vary according to speed of acquisition, but also the type of indeterminate form was different. Figure 5.3 also indicates this difference in type of indeterminate construction employed.

This descriptive difference between the two groups of children may be related to speed of acquisition and syntactic facility. The relatively heavy dependence upon indeterminate constructions by rapid developers compared with the relative lack of indeterminate forms by the slow developers may signal a difference in risk-taking behavior related to speed. The girls proceeded rapidly in syntax often failing to observe word order constraints. The boys proceeded slowly rarely disturbing word order constraints. Although it might be expected that the slow syntactic developers would have more difficulty learning English word order, it may be possible to explain this opposite finding. In the effort to reach syntactic complexity rapidly, the rapid developers may engage in more overt testing behavior. Conversely, the slow syntactic developers may do this testing covertly as they are practicing a particular level of syntactic complexity.

V. GRAMMATICAL CLASS SPECIFICATION

Recent literature on grammatical class specification has been in

almost universal agreement regarding the sequence of acquisition. As discussed in Chapter 2, Kelley (1967), Gruber (1967a), Menyuk (1969), and Sinclair (1971) have asserted that predicate structures emerge prior to subject structures. (See Chapter 2 for a detailed review of these theories).

In this study, the children's syntactic utterances were classified according to whether they specified subjects, verbs or complements. Examination of all children's data directly revealed that only two of the children, Greg and David S., began by specifying only complement constructions. All the girls in the study specified all three grammatical classes from the onset of syntax. David N. specified verb and complement structures at the first appearance of syntax. Although subject specification tends to take up a smaller percentage of all syntactic utterances than verb or complement structures, these data reveal that predicates do not always emerge prior to other structures.

To examine this phenomenon more fully a second type of grammatical class specification was undertaken. In this analysis, only those utterances in which syntactic relations between two grammatical elements existed were included. This analysis indicated a different pattern of development for the boys as compared with the girls. For each of the girls, all three syntactic relations were expressed at the onset of syntax. The results indicated that Lisa and Emily depended heavily upon the VC relation, but SV and SC specification were undeniably productive. Marjorie and Danielle produced variable percentages of SV, SC and VC specification from session to session. For the latter two children, the VC relation was not even

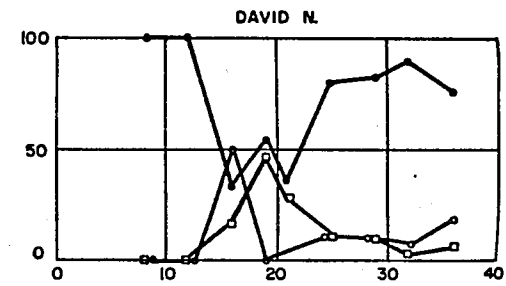
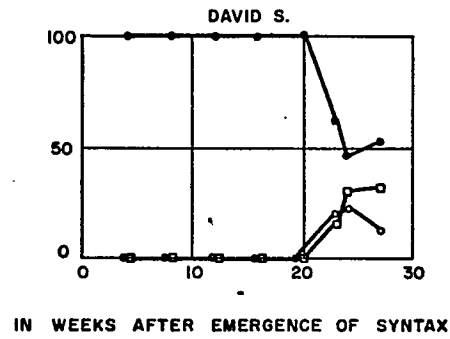
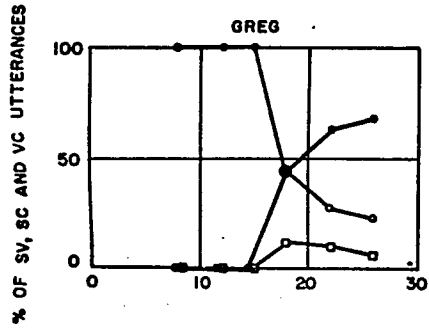
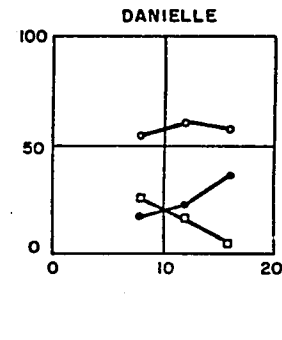
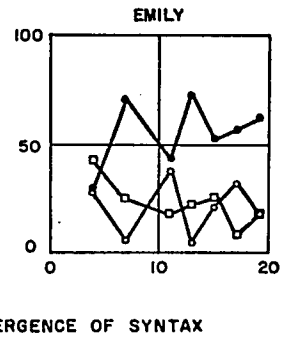
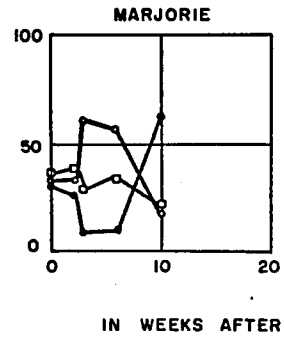
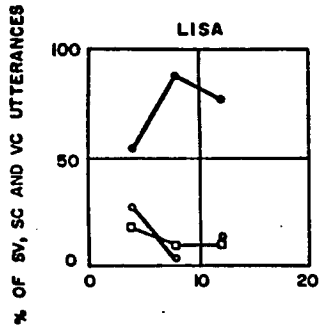
the predominant construction. The pattern of syntactic relational specification noted for the boys was quite different. David N. produced only the VC relation for the first two sessions in which syntactic relations were employed. Greg's and David S.'s analyses show that they began by specifying SC and VC constructions. The SC utterances, however, deserve further comment. First, for neither child was the SC construction a productive form. That is, it never occurred more than twice in the initial observational sessions. Figure 5.4 reveals the difference in the pattern of grammatical class specification for the boys and girls. Further, all of the SC constructions involved implied copula structures (i.e. "This a cookie" was said by David S. as he was holding up a cookie showing it to the examiner). The context of this utterance indicated that the implied structure was "This is a cookie." However, since at no time during any session did any of the children produce full copula constructions, such an assumption may attribute too much structural knowledge to the children. Not one of the early SC constructions for the boys was a non-copula form. If these are deleted from the analysis for all children, it appears that the VC relation was the first syntactic relation that any of the boys did in fact produce. The removal of SC constructions with an implied copula from the girls' data, however, does not change the pattern greatly. The girls had many other SC constructions which implied a true verb rather than a copula. See Appendices for all instances of SC constructions for both the boys and the girls.

These results indicate that grammatical class specification may be tied to style and speed of acquisition. The rapid syntactic developers

Fig. 5.4 Percent of SV, SC, and VC utterances employed productively from the onset of syntax.

KEY

- SV
- SC
- ◆ VC



specified all three syntactic relations (SV, SC, VC) at the onset of syntax. The slow syntactic developers began by specifying only the VC or predicate structures. Earlier theoretical speculations regarding the order of emergence of grammatical classes hold for only one style of syntactic acquisition. The findings of this study are consonant with those of Bloom (1970), of whose three subjects the two girls specified all three grammatical relations when they were first observed. The one boy concentrated most heavily upon predicate constructions.

VI. SUMMARY OF SYNTACTIC STYLES

The foregoing syntactic analyses reveals two distinct styles of syntactic acquisition. These linguistic styles appear to be sex- and speed-related. The rapidly developing girls reached criterion in less than four and one half months. They employed few, if any, presyntactic forms. Once syntax emerged, the girls moved onward in the specification of syntactic complexity smoothly. They often did not observe English word order constraints in their rapid advance to syntactic competence. Finally, they specified SV, SC and VC grammatical relations from the onset of syntax.

The second syntactic acquisition style was different in many ways. The boys in this group developed syntactic competence rather slowly when compared with the girls. They took at least six and one half months to reach criterion. Throughout the developmental period they depended heavily upon presyntactic forms, possibly as a means of acquiring syntax. Each boy in the study appeared to have relative difficulty acquiring higher levels of syntactic complexity as indicated by the long

periods of time spent at each level of syntax prior to the productive use of the next higher level. English word order constraints were almost universally observed by these slow syntactic developers. Indeterminate form constructions either did not appear or were only minimally productive. Finally, the boys tended to specify the VC relation as their first approach to syntactic relationships.

The literature on sex differences in language development has generally indicated a general superiority of girls over boys in the early developmental periods (See Chapter 2). While the findings of this study are consonant with earlier reports, the results reported here further show that certain syntactic constructions appear to be associated with particular styles of acquisition. These differences are summarized in Table 5.1.

Table 5.1
Styles of Syntactic Acquisition

Boys	Girls
I. Slow Syntactic Developers a) use of transitional presyntax b) difficulty in acquiring higher levels of syntactic complexity c) adherence to English word order constraints d) initial specification of predicate constructions	I. Rapid Syntactic Developers a) minimal use or nonexistence of transitional presyntax b) facility in acquiring higher levels of syntactic complexity c) non-observance of English word order constraints d) specification of subject and predicate constructions simultaneously

CHAPTER 6

DISCUSSION: UNIVERSAL ASPECTS OF LANGUAGE EMERGENCE

The major portion of recent research undertaken in early language acquisition has been aimed at uncovering universal aspects of linguistic development. This approach arose from an initial concern with factors that may be held constant across languages and cultures, stemming from the assumption that language is part of man's hereditary, innate endowment. Linguistic and psycholinguistic research have approached the question of the universality of linguistic structure in two ways. Theoretical speculation has produced certain hypotheses regarding the general nature of linguistic universals. Data-based research has attempted to uncover specific examples of universal factors.

Outstanding among the theoretical postulates of universal linguistic structure is Chomsky's reference to the cyclic nature of transformational rules (1965). Similarly, McNeill (1970) hypothesizes three distinct types of linguistic universals: a) a weak linguistic universal is a ". . . reflection in language of a universal cognitive ability" (1970, p. 73); b) a strong linguistic universal is a ". . . reflection of a specific linguistic ability" (1970, p. 74); and c) an erratic linguistic universal reflects both cognitive and linguistic factors.

Data-based psycholinguistic research has sought to unearth specific examples of universal factors applicable to all known languages. Slobin (1970) attempted to detail specific linguistic universals, suggesting

the following examples: a) expressive utterances, i.e. performatives and demands, precede referential utterances; b) expressions of location and direction are acquired earlier than expressions of time. These are only two of many such specific universal factors detailed by Slobin. Principles such as these are derived from examination of data revealing invariances in the order of acquisition.

The results of this study suggest certain data-based universal factors. Invariances in the acquisition process across the seven subjects of this study suggest some conclusions about the sequence of acquisition of grammatical elements and the order of emergence of sentence constructions and semantic categories.

I. COMPLEXITY ANALYSIS

Universal Order of Acquisition

The classification of syntactic utterances according to the hypothesized complexity of grammatical structure allowed for observations regarding universal ordering of early syntactic constructions. When utterances were categorized according to the number of conjoined and expanded grammatical elements it was apparent that the greater the number of different grammatical elements, the later the structure tended to become productive. Table 6.1 displays this ordered progression of development indicating that: 1) The expansion of a single grammatical element (Group I) emerged as the first truly syntactic construction. 2) Utterances in which two grammatical elements were combined (Group II) occurred only after utterances of Group I were firmly established. 3) Constructions in which two grammatical elements, one of which was expanded, were combined

Table 6.1

Sequence of Emergence of Utterances in Groups I-V

Group I	Group II	Group III	Group V	Group IV
SS	SV	SSV SVV		SSVV
VV precedes	SC precedes	SSC SCC precedes	SVC precedes	SSCC
CC	VC	VVC VCC		VVCC

(Group III) always became productive following the emergence of Group II constructions.

Group IV constructions were those utterances in which two expanded grammatical elements were combined. Group V utterances were SVC constructions. Unlike the findings for Groups I-III, the data did not show an orderly progression from Group IV utterances to Group V utterances. Instead, Group III constructions were usually preceded by SVC utterances (Group V). In one instance Group III utterances appeared before but did not become productive until after Group V utterances. Some of the children never acquired Group IV constructions. For those who did, they always emerged contemporaneously with or after the first instance of SVC combinations. Figure 5.1 indicates the total sequence of emergence. Within this ordering at least one utterance type from a grouping became productive before any utterances from the next group occurred.

Explanations for Order of Acquisition

Order of Acquisition of Lexical Items. A possible explanation for the uniform emergent pattern might be that the order of acquisition of

syntactic constructions is related to the order of acquisition of types of lexical items.

MacNamara (1972) states that children may interpret the meaning of a particular word to be the name for an object as a whole rather than a subset of its properties. In that case, vocabulary items would be acquired in the following order: a) names for entities; b) names for actions and variable states; c) names for permanent attributes. To produce a basic SVC construction a child need only combine names of entities with names for actions. The inclusion of lexical items referring to permanent attributes is possible but not obligatory in SVC constructions. Expanded grammatical elements, however, involve adjectives, adverbials and prepositions. Since these word types refer to permanent attributes and variable states, their later syntactic occurrence might be explained by MacNamara's hypothesis regarding the order of acquisition of vocabulary items. In contradiction to what MacNamara's theory predicts, however, the first syntactic constructions in these data are always Group I utterances, expanded single grammatical elements. This theory therefore fails to account for the data.

Utterance Length. Another possible explanation for the finding that Group V constructions emerged before Group IV constructions is the matter of utterance length. For each of the children, the first SVC constructions always consisted of three conjoined elements. It was only in later instances of SVC constructions that more than three words were produced in one SVC utterance. Group IV constructions require four word combinations. Thus, rather than syntactic constraints, mnemonic or productive limitations may be responsible for the later emergence of

Group IV utterances.

The Interaction of Total Linguistic Output
and Increasing Complexity

Related to the interaction of utterance length and complexity was the finding of an apparent interaction between the total linguistic output and the increasing syntactic complexity. For all but two of the children, the total number of utterances at the last observational session was not significantly greater than in earlier sessions when less complex utterances were being produced. Figure 6.1 indicates the total output of each child in number of utterances as well as the number of single word and syntactic utterances. As the number of syntactic utterances increased, therefore, the number of single word utterances tended to decrease. In other words, although the total number of words increased over time, the total number of utterances remained relatively stable. This finding tends to confirm the hypothesis that utterance length and number interacted with structural complexity to affect total output.

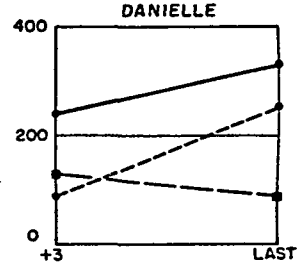
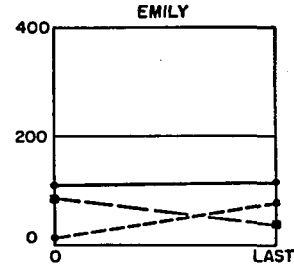
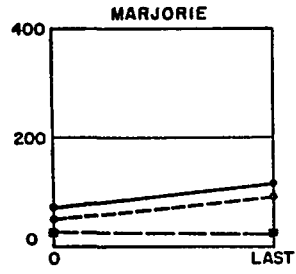
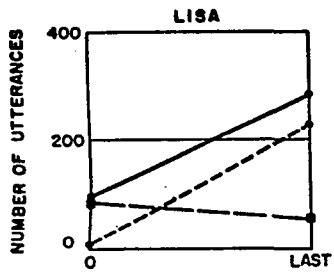
II. SUCCESSIVE SYNTACTIC UTTERANCES

Bloom (1973) discussed successive single word utterances. She described these forms as the successive occurrence of at least two words produced with terminal falling pitch contour and relatively equal stress. The pause between utterances was variable but distinct. Bloom's subject used these successive single word utterances just prior to the onset of syntactic constructions. A related phenomenon was noted in the data obtained in this study at a later stage of development. In the later

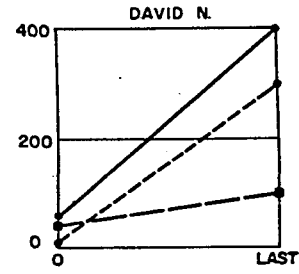
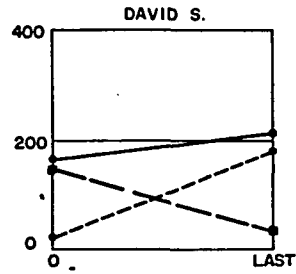
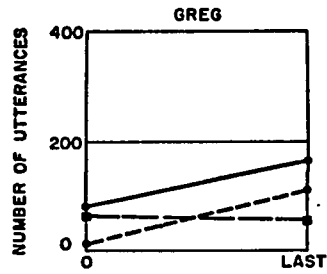
Fig. 6.1 Number of single word utterances, syntactic utterances and total output of each child in number of utterances.

K E Y

- TOTAL NUMBER OF UTTERANCES
- SINGLE WORD UTTERANCES
- SYNTACTIC UTTERANCES



S E S S I O N S



S E S S I O N S

sessions, just prior to reaching criterion, all the children began producing strings of syntactic utterances that were related to the same contextual event. For example, in Session +6 Greg produced the following series of utterances: "Get more," "More," "Get more," "Daddy," "Daddy buy more." These utterances occurred when he noticed that there was no more ice cream in the refrigerator. Each utterance was separated by considerable juncture pause and each had terminal falling contour.

Although sequences of utterances of this type occurred in all later observational sessions, their number increased dramatically just prior to the last session. In the final session, there was a dropping off in the number of these successive syntactic utterances. Table 6.2 indicates this pattern.

Each group of successive syntactic utterances referred to one event, without adult intervention between the separate utterances in the series. In some cases this string of syntactically incomplete phrases ended with an utterance combining all three relations in one intonation frame. For example, when Greg was at the toy shelf he said, "Play toy," "Toy toy," "Boy toy," "Greg pull," "Andrya toy," "Andrya give toy." Whether or not the string ultimately specified all three relations, the use of this pattern had predictive value as an indicator of forthcoming syntactic completion, for a greater number of these strings were produced at the sessions prior to criterion while the number decreased at the final session. The use of these successive syntactic utterances may serve as a transition from incomplete to complete syntactic formation. This finding may be correlated to Bloom's finding (1973) that successive single word

Table 6.2
Number of Successive Syntactic Utterances

Session	Lisa	Marjorie	Emily	Danielle	Greg	David S.	David N.
0	0	2	0	0	0	0	0
+1	0	3	0	2	0	1	0
+2	5	4	3	1	1	1	0
+3	2	7	3	6	2	1	0
+4		3	3	24	1	1	0
+5			6	8	0	1	1
+6			8		9	8	1
+7			3		3	13	3
+8						6	7
+9							10
+10							11
+11							7

utterances occurred with greatest frequency just prior to the emergence of syntax. In this study, the successive syntactic utterances precede the point at which SVC constructions were produced at criterion.

III. ACQUISITION OF SEMANTIC CATEGORIES

Order of Emergence of Affirmative Semantic Categories

In attempting to specify universal aspects of language development, various statements have been made with regard to the order of acquisition of semantic notions or categories. Slobin (1970) stated that "The rate

and order of development of semantic notions expressed by language are fairly constant across languages, regardless of the formal means of expression employed" (1970, p. 1), implying that a child's expression of a semantic notion is dependent upon this cognitive conceptualization of that notion. Further, the cognitive processes themselves are assumed to have a universal nature that represents human thought processing. Based upon these assumptions Slobin predicts the order of emergence of particular semantic categories. Expressions of location and direction are presumed to emerge prior to temporal relations. In sentence conjunction, conjunction precedes disjunction or implication. The data from this study may be examined in the light of Slobin's predictions. Table 6.3 indicates the order of acquisition of semantic categories for the seven children of this study.

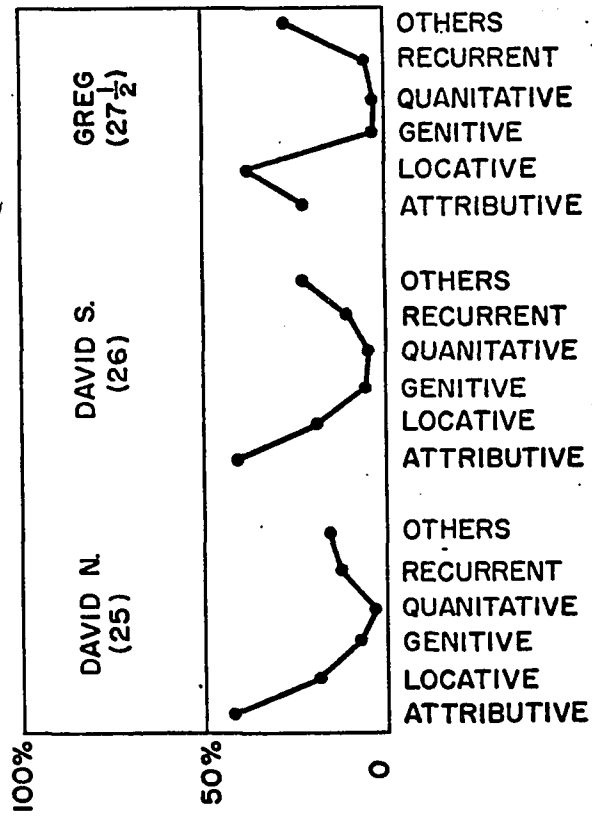
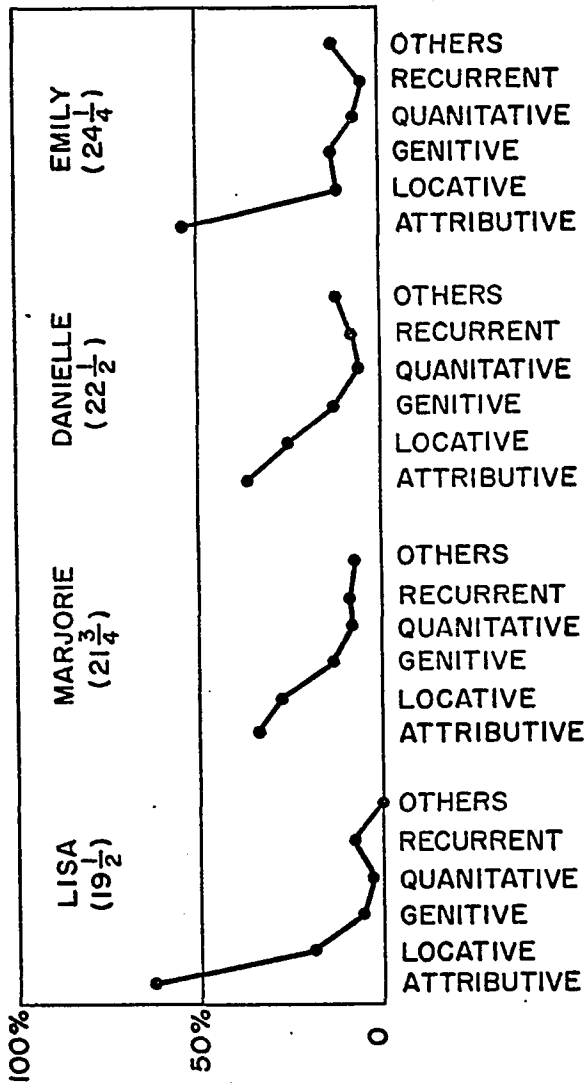
Table 6.3 reveals no uniform sequence across children. There is no one semantic category that always emerges first, nor is there one category that emerges last in all subjects. There are, however, certain possible generalizations from the data. Of the twelve semantic notions that were included for examination, some categories tend to appear early, while other semantic categories rarely or never appear early. The genitive, attributive, locative, quantitative and recurrent classes are always among the first semantic classes to emerge. Temporal, manner, conjunctive, and explicit deictic classes emerge somewhat later. Finally, the dative, instrumental, and disjunctive notions rarely occurred and for some children were not used at all (See Figure 6.2). This finding is consonant with that of Bloom (1970), who reported that although there were differences among her three subjects in the specification of these semantic

Table 6.3

Order of Acquisition of Semantic Categories

Lisa:	1) genitive, attributive 2) locative, recurrent 3) quantitative
Marjorie:	1) genitive, attributive, recurrent 2) locative 3) deictic, quantitative 4) conjunctive
Emily:	1) genitive, attributive 2) locative 3) quantitative, recurrent 4) manner 5) deictic
Danielle:	1) genitive, attributive, locative 2) temporal, deictic, quantitative, recurrent
Greg:	1) locative, deictic 2) attributive, recurrent 3) genitive, manner, instrumental, quantitative, dative 4) conjunctive
David S.:	1) attributive 2) locative, manner 3) recurrent 4) instrumental 5) genitive, deictic, quantitative 6) dative, conjunctive
David N.:	1) genitive, locative 2) attributive, deictic 3) recurrent 4) temporal, manner, quantitative 5) dative

Fig. 6.2 Percent of utterances in the five earliest emerging semantic categories (attributive, locative, genitive, quantitative and recurrent) and in all other semantic categories arranged by the child's chronological age at the last observational session.



notions, the attributive, genitive and recurrent forms were used most extensively while the conjunctive and locative classes occurred infrequently and the dative and disjunctive categories never occurred.

These findings appear to suggest that children learn certain facts about the world early in development. Notions of possession, attribution, location-direction, and quantification are the earliest expressed semantic categories. This finding is consonant with Slobin's hypothesis that expression of location and direction are acquired earlier than expressions of time. Temporal relations, along with coordinating conjunction and manner emerge somewhat later. Slobin also hypothesized that coordinating conjunction would precede subordination and implication. Disjunction, as a form of subordination, was found to be one of the last forms to emerge.

Order of Emergence of Negative Semantic Categories

McNeill (1968) reported on the order of acquisition of negative semantic categories for one child who he studied from age 27 months. For this child the existence-nonexistence distinction emerged first. The second type of semantic negation to appear was denial in the form of falsity of statement. Internal-external rejection emerged as the third category of semantic negation. Finally, denial-entailment-nonentailment emerged last.

Bloom (1970) also reports data on the order of acquisition of semantic categories of negation for Eric, Kathryn and Gia. Eric's and Gia's data revealed that non-existence and rejection emerged contemporaneously although a greater proportion of the produced negative utterances signaled

non-existence. Kathryn produced negative utterances signaling nonexistence, rejection and denial simultaneously. However, since this pattern occurred at the first observational session it is not possible to know whether at some earlier time nonexistence and rejection had preceded the emergence of denial as had occurred with Eric and Gia. It was true, however, that the greatest proportion of Kathryn's negative utterances indicated nonexistence.

A comparison of the results obtained from McNeill's child and Bloom's three children reveals a discrepancy in the sequence of acquisition of semantic types of negation. McNeill's child employed the denial category prior to rejection. The reverse is true for all of Bloom's children. Analysis of data from this study indicates great discrepancies in the order of acquisition for the seven children observed. For Lisa, nonexistence was the only type of semantic negation produced. Danielle produced the nonexistence category first and the rejection category second. Greg also produced utterances indicating nonexistence first but he produced utterances involving modified denial entailment second and rejection third. He never, in the obtained data, produced utterances indicating denial. Marjorie produced utterances signaling rejection followed by utterances signaling non-existence. Neither denial nor modified denial entailment types of negation were used by her. Emily produced utterances signaling rejection and denial at the same time, never having produced utterances signaling nonexistence or modified denial entailment. David N. began by producing denial and modified denial entailment and nonexistence types. Finally, David S. did not produce any negatives until Session +7 and then specified all four types simultaneously. Table 6.4

indicates the first session at which each semantic type of negation occurred for each child. These results indicate that the order of emergence of the four types of semantic negation were extremely variable. These data do not support a universal order of acquisition, but neither do they suggest definable styles of acquisition into which the subjects may be grouped.

Table 6.4
First Occurrence of Negative Semantic Categories

	Nonexistence	Rejection	Denial	Modified Denial Entailment
Lisa	+3			
Marjorie	+3	+2		
Emily		+1	+1	
Danielle	+4	+4		
Greg	+3	+5		+3
David S.	+7	+7	+7	+7
David N.	+7		+7	+7

Relationship between the Number of Semantic
Categories and Chronological Age

The number of affirmative and negative semantic categories produced differed for each of the children. Table 6.5 reveals that the boys produced a greater number of both affirmative and negative semantic category types. An attempt was made to see if this difference was related to the

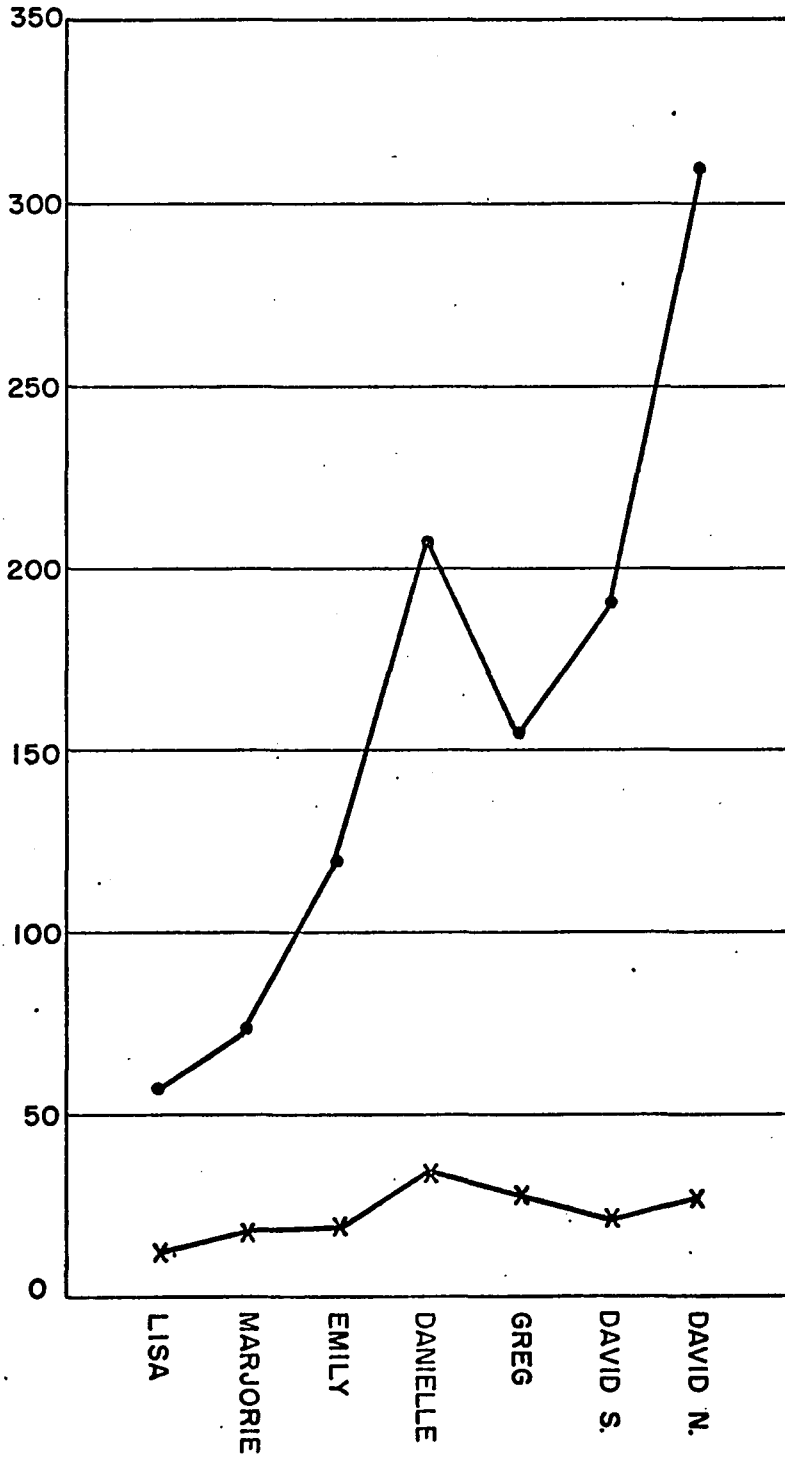
Table 6.5
Age in Relation to Number of Affirmative
and Negative Semantic Categories

	Age at Cri- terion	# Affirmative Se- semantic Categories	# Negative Semantic Categories
Lisa	19-1/2 months	5	1
Marjorie	21-3/4	7	2
Emily	24-1/2	7	2
Danielle	22-1/4	7	2
Greg	27-1/4	10	3
David S.	26	10	4
David N.	25	10	3

number of utterances produced in the categories used for calculating semantic function. For affirmative semantic categories, those utterances which employed an expansion of the subject or the complement were involved in the semantic analysis. Figure 6.3 indicates the total and average number of utterances in the categories used for calculating affirmative semantic utterance types. The results indicate that although there is some correlation it is not complete. For example, all the boys produced the same number of semantic categories while the number of utterances that were involved in the calculation were quite different. Also, although Danielle produced fewer affirmative semantic categories than any of the boys, she produced the greatest total and average number

Fig 6.3 Total and average number of utterances per session in the grammatical classes used for calculating semantic categories (SS, CC, SSV, SSC, SCC, VCC, SSCC, VVCC).

● TOTAL NUMBER UTTERANCES
X AVERAGE NUMBER UTTERANCES

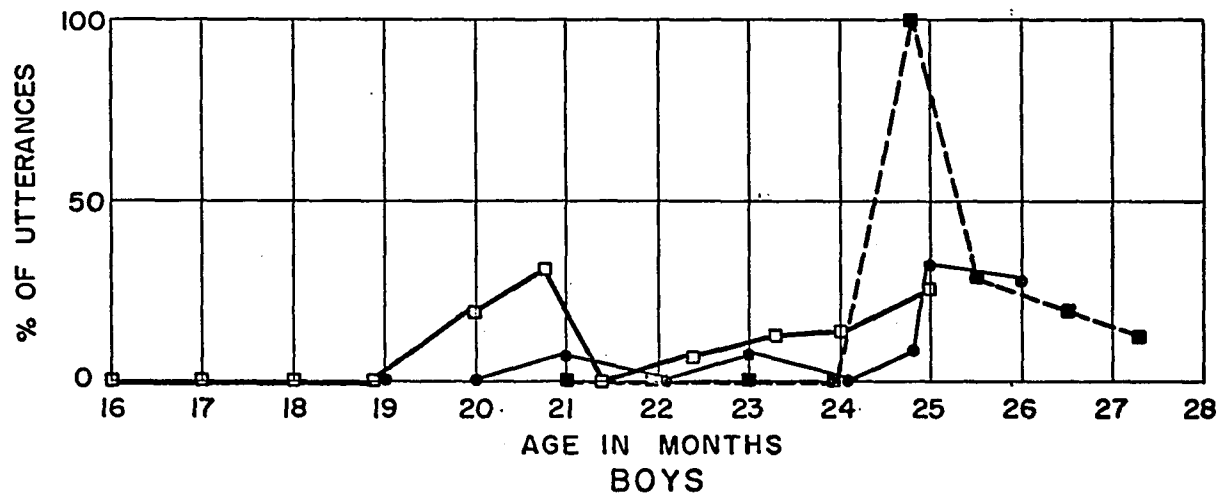
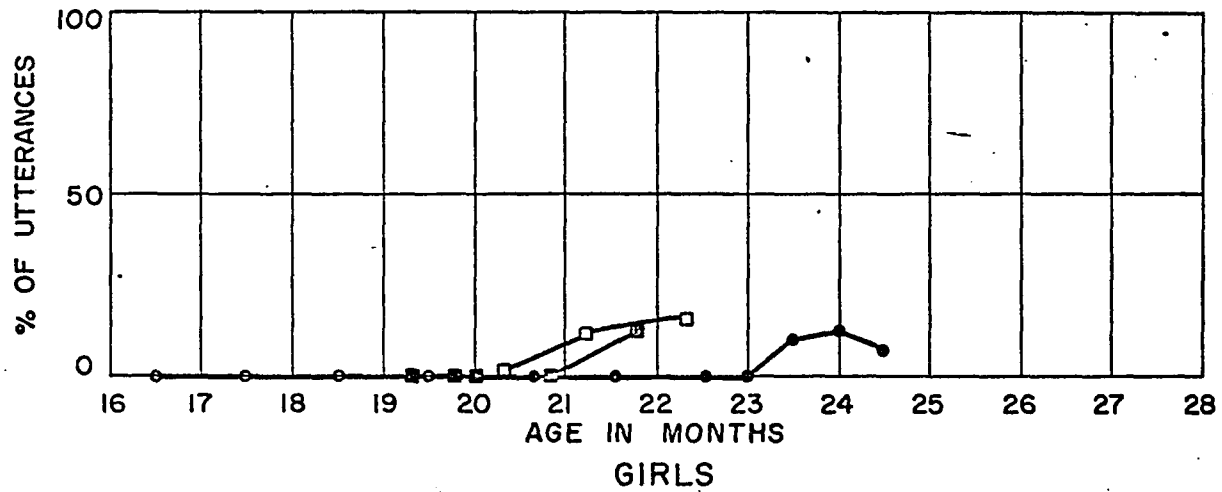


of utterances.

Table 6.5 also indicates each child's age at criterion and the number of affirmative and negative semantic categories produced. The girls, all of whom were several months younger than any of the boys at the final stages of observation, produced fewer semantic categories. Because all seven children produced the same five affirmative semantic categories, chronological age appears to be related to the percentage of utterances in the later developing categories. Figure 6.4 reveals this difference. The girls, whose observational period ended at an earlier age, may have had less opportunity to specify the later developing semantic categories of manner, temporality, instrumentality, dative, conjunction, disjunction and explicit deixis. Therefore, although the level of structural syntactic sophistication was consistent, there were differences between the boys and girls. These differences were related more to the approximate age of the child than to the style of syntactic acquisition. This relationship is revealed better by the percentages of later-developing categories than by the number of utterances in each semantic category. For example, Lisa, who met the syntactic criterion at the youngest age, 19 $\frac{1}{2}$ months, specified the fewest number of affirmative (five) and negative (one) semantic categories. Marjorie, Emily and Danielle specified seven affirmative semantic categories and two negative ones. They met the syntactic criterion before their second birthday. The three boys, all of whom produced ten affirmative semantic categories and three or four negative ones, met the syntactic criterion at least a month past their second birthday. These results are summarized in Table 6.5.

The results of the semantic analysis indicate that semantic

Fig. 6.4 Percent of utterances used productively in categories other than attributive, locative, genitive, quantitative and recurrent by chronological age.



development is not tied to syntactic emergence. Although all children at the last observational period were producing equivalent types of syntactic utterances, the number of semantic categories which they produced varied considerably. When stagewise syntactic development is held constant, therefore, the level of semantic sophistication can and does vary.

The relationship of semantic development to age rather than to syntactic complexity appears related to Cazden's notions (1968) of macrodevelopment and microdevelopment. Macrodevelopment refers to the semantic intention of a communication while microdevelopment refers to ability to syntactically and morphologically code that intention. Cazden believes that, ". . . synchronization of the two aspects can vary. . . ." This lack of synchronization between the two aspects, syntactic development and semantic development, was reflected in the results of this study.

The Developmental Independence of Syntax and Semantics

There have been numerous attempts in the psycholinguistic literature to relate the semantic and the syntactic language functions. Basically the positions have been of two types. It is possible to view language as some very special aspect of human activity as Chomsky (1968) has done. McNeill (1970), following a Chomskian approach to language, proposed a separation of the semantic component from the syntactic component. In this view syntactic knowledge is largely innate while semantic categories have been assumed to be learned. Schlesinger (1971), taking a different view, developed a model in which cognition is central to the use and acquisition of language. In this view, the infant learns his language by first determining, independently of language, the meaning which a speaker

intends to convey. Later, he works out the relationship between meaning and language. In the period when infants begin to learn language, their thought processing is presumed to be more developed than their language. The development of cognitive processing is at first independent of language. Knowledge of syntax comes after knowledge of meaning. The child must know what he intends to express and searches for a syntactic structure that encodes that intention. These two theoretical approaches to the relationship between syntax and semantics can be perhaps best expressed in diagrammatic form. Figure 6.5 displays the difference in theoretical conception.

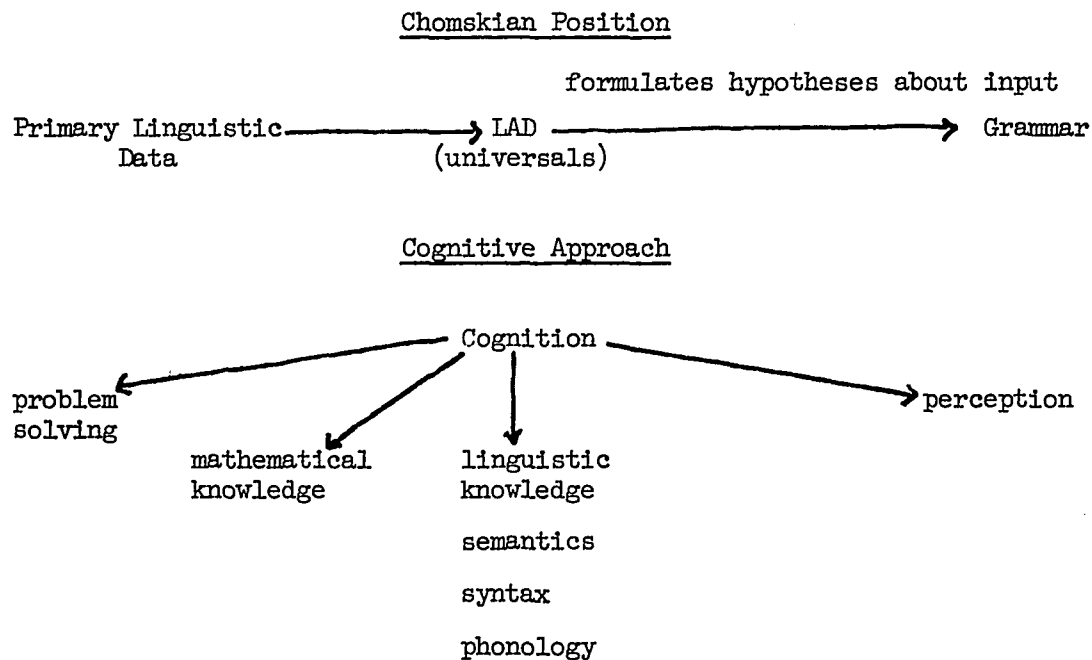


Figure 6.5

Differing Theoretical Conceptions for the Relationship
between Syntax and Cognition

In the cognitive approach, cognitive processing feeds into the total language function in the same way that it feeds into other specialized, cognitively based operations. Semantic coding is essential to the eventual syntactic marking of concepts. The Chomskian position places syntactic relational knowledge, with a large innate component, apart from other types of knowledge.

There is no evidence from this study that relational knowledge is innate since there appear to be discrete steps children take in acquiring competence with syntactic relational conceptions. The semantic component of language, however, appears to develop separately. Thus, linguistic development moves along two dimensions. The conceptualization that concepts are semantically coded prior to being marked syntactically is not inconsistent with the data from this study; however, the types of strictly syntactical categories which a child may express appear not to be limited by the number of semantic categories over which he has mastery.

Acquisition of 'wh' Questions and Their Relation to Semantic Categories

A small proportion of the total syntactic output of three children studied involved the direct expression of interrogative forms marked with 'wh' question words. Only Emily, David S. and David N. produced interrogative utterances of this type. Table 6.6 indicates the 'wh' question words produced and their order of emergence. 'What' and 'where' were the only question words to emerge at this stage of development. This corresponds with Ervin-Tripp's finding (1970b) that 'what' and 'where' questions are the earliest to appear.

Table 6.6
Order of Emergence of 'wh' Questions

	Sessions						
	0	+1	+2	+3	+4	+5	+6
Emily			what	where			
David S.		where			what		
David N.					what		where

The order of acquisition of 'wh' questions may be further examined in relation to the semantic categories produced in declaratives. Many of the semantic categories that were analyzed as declaratives could be regarded as implicitly answering a particular type of 'wh' question. Six semantic categories account for all the basic 'wh' words used in English. Thus, genitive statements implicitly answer questions asking: WHOSE? Attributive categories implicitly answer questions asking: WHAT? Locative forms imply the answer to questions of the form: WHERE? Temporal notions expressed in statements imply the answer to WHEN questions. The semantic category manner implies the answer to questions asking: HOW? Finally, explicit deixis answers the implicit question: WHICH?

The data show that 'what' and 'where' questions occurred first and were the only interrogative forms produced. The attributive and locative semantic categories which relate to these question words were among the earliest semantic notions produced by all the children studied. It is interesting to note that every child produced attributive and locative

notions while only three children produced 'what' and 'where' questions. This finding suggests that the notion expressed in the statement form necessarily precedes the expression of that notion in the interrogative form. Further credibility is attached to this explanation because the attributive and the locative categories occurred prior to the expression of 'what' and 'where' questions for the children that did produce them. Tables 6.7 and 6.8 indicate this sequence of acquisition.

The preceding data seem to indicate that while the semantic notion expressed in the statement form must precede the expression of that same notion in question form, the expression of a particular semantic notion in the statement form does not necessitate the early appearance of the question form. For example, genitive semantic notions were among the earliest semantic categories expressed by all children during the observational period. None of the children ever produced questions in which 'whose' was the question word.

Table 6.7
Emergence of What Questions and
Attributive Semantic Category

		Sessions			
		+1	+2	+3	+4
Emily	attributive		'what' Q		
David S.	attributive				'what' Q
David N.	attributive				'what' Q

Table 6.8

Emergence of Where Questions and
Locative Semantic Category

		Sessions				
		+2	+3	+4	+5	+6
Emily	locative		'where' Q			
David S.	locative		'where' Q*			
David N.				locative		'where' Q

*First non-imitative occurrence.

CHAPTER 7

SUMMARY

This research was a longitudinal study examining the acquisition of language in the early syntactic period. Seven children, four girls and three boys, were observed in a naturalistic setting from the first appearance of two word utterances until at least 20% of their syntactic utterances specified a SVC structure. Several different analyses of the obtained data were undertaken. The corpora obtained for each child was analyzed for the development of grammatical complexity, grammatical class specification and semantic category.

In order to examine the development of grammatical complexity, an analytical method was developed to delineate the developmental progression according to the number of syntactic relational classes employed per utterance and the number of grammatical classes expanded in a particular utterance. Using this method of classifying utterances according to syntactic complexity, the constantly increasing complexity of the children's utterances was examined individually and independently of the adult model of linguistic description. Specifically, increasing sentential complexity was judged by combining the following classifications: 1) The number of grammatical classes per utterance and 2) The number of expansions of grammatical classes per utterance.

To determine whether all the children in this study progressed through the same stages in the specification of grammatical elements and relations, the data from each observational session for each child was analyzed in

two ways: 1) The number and percentage of subjects, verbs and complements specified in all syntactic utterances was computed. 2) The number of SV, SC and VC relations which appeared in each session was recorded and percentages computed.

Analyses were also undertaken to examine the semantic function of syntactic utterances. All utterances that included an expansion of the subject or complement structure were involved in the analysis of affirmative semantic categories. A total of twelve semantic categories were included in this analysis and fully accounted for all expansions. The semantic function of negative utterances was also examined. Four negative semantic categories were expressed.

The results of these analyses are:

1. For this sample, differences in the rate of acquisition of syntax were observed. These differences were noted not in terms of the age of onset of syntactic forms, but in the length of time from the first emergence of syntactic forms until SVC structures were used at criterion level.

2. This speed or rate factor was not alignable on a continuum. The children seemed to fall into one of two groups. Some children could be classed as slow syntactic developers. They took between $6\frac{1}{2}$ and 9 months to reach criterion. The other children were classed as rapid syntactic developers. This group reached criterion in less than $4\frac{1}{2}$ months.

3. For this sample, the rate of acquisition was related to sex. All of the boys studied fell into the group of slow syntactic developers. All the girls observed reached criterion rapidly.

4. The speed or rate of acquisition was relatable to particular

styles of syntactic acquisition. That is, different types of syntactic forms appeared in the corpora of the slow syntactic developers from those that were noted in the corpora of the rapid syntactic developers. There was a difference in: the use of presyntactic forms, adherence to English word order constraints, and specification of subject and predicate structures.

5. The analysis of semantic categories expressed indicated that the rapid syntactic developers employed fewer different semantic categories, both positive and negative, than the slow syntactic developers. However, this result appeared to be related to the child's age at the last observation. Because the boys took longer to reach criterion, they were observed for a longer period of time. The boys therefore produced a greater number of semantic categories as a result of their relative chronological maturity.

6. The same sequence of acquisition of utterances based upon grammatical complexity in this early syntactic period appeared to obtain for all the children in this study.

7. In the session just prior to the one in which criterion was reached, all the children in this study produced sequences of utterances that could be called successive syntactic utterances. These utterances could be identified as strings of separate syntactic utterances that were related to the same contextual event and uninterrupted by an adult response. When taken as a group they expressed a complete notion in the way that adult language user might employ a full sentential form.

8. A review of the semantic category development indicated that there was not an invariant sequence across children. Some semantic

categories did, however, tend to emerge early in the observational period while others appeared later.

9. The results of the question analysis revealed that 'what' and 'where' questions were the earliest to emerge.

10. Examination of the categories of semantic negation revealed that for the four types of semantic negation, there was no one sequence of emergence across children in this study. It was noted, however, that certain semantic negation types were used by more of the children than were other types.

The results of this research can be readily divided into two major groups. Results 1. through 4. directly relate to styles of language acquisition and indicate individual differences in children's approach to language learning. Results 5. through 10. deal with characterizations of the acquisition process which held across all children studied regardless of the style of syntactic acquisition employed.

APPENDIX I

SYNTACTIC CORPORA: LISA

SYMBOLS

L = Lisa

M = Mother

A = Examiner

(I) = Imitation

_X = # times produced

LISA

SESSION +1 CONTINUED

SVV:
 SCC:
 VCC:

GROUP IV:
 SSVV:
 SSCC:
 VVCC:

GROUP V:
 SVC:

EXPLIC+ _____ : "HELLO DADDY" L is playing with toy telephone.
 "HI DADDY" L is playing with toy telephone.
 "BYE DADDY" L is playing with toy phone. M says,
 "Say goodbye."
 "HI GIRAFFE" (I) M brings over the stuffed giraffe
 and says, "Say hi giraffe."
 "BYE BYE BUNNY" (I) M puts away the rabbit toy,
 M says, "Say bye bye bunny."

Q+ _____ : "HOW YOU DADDY" (I) L and A are looking in a book
 at picture of a man. A said, "How are
 you, daddy?"

NEG+ _____ :

INDETERMINATE: "JUICE MORE" L holds out juice glass to M.
 "HOSPITAL DADDY" 3X M asks L, "Where is Daddy?"

LISA

SESSION +2

DUMMY+ _____ :

REDUPLICATED _____ :

EMPTY PIVOT+ _____ :

GROUP I:

SS:

VV:

- CC: "APPLE JUICE" 7X M gives L apple juice.
 "MORE BANANA" L finishes some banana. M asks, "What else do you want?"
 "MORE JUICE" A asks L, "What's in the cup?" L is holding a cup.
 "PINK CUP" L to A. L is holding a pink cup.
 "MORE ORANGE JUICE" 4X M asks L, "What does Lisa want?" L holds out cup.
 "ORANGE JUICE" A asks L, "What's in the cup?" A cup is in front of Lisa.
 "THAT FIRE ENGINE" A asks L, "What do you want to play with?" L points to the fire engine.
 "TELEPHONE BOOK" 2X L was playing with telephone but no apparent reference to a phone book.
 "TWO COVER" 4X L picks up two gloves from the floor.
 "VERY GOOD" (I) A says, "Very good" when Lisa puts blocks on stack.
 "THAT ONE" M asks L, "What does Lisa want?" L points to box on table.
 "PANTS OFF" 3X L starts pulling her pants off.
 "OTHER SOCK" 2X L is wearing one sock. L gets other sock from her room.
 "OTHER SHOE" A had put one of L's shoes on. She gets other shoe.
 "SHOE ON" L says this as A puts L's shoe on.
 "PONY GIRL" L walks over to her rocking horse. (Pony girl is L's name for horse.)
 "TAPE RECORDER" (I) L touches recorder. A says, "That's a tape recorder."
 "PUSSY. CAT" L picks up her stuffed cat.
 "SLIDING POND" (I) L's brother says to L, "Say sliding pond."

GROUP II:

- SV: "LISA TIRED" L looks up at M.
 "DADDY WORKING" M asks L, "Where's Daddy?"
 "IT BROKEN" 2X L breaks her cheese into little pieces.
 SC: "THAT ANNIE" (I) A takes out Raggedy Ann and says, "That's Annie."
 "COVER ON" L has one glove on and holds other glove out to A. A asks, "What goes on?"
 VC: "OPEN IT" 6X L gives M a box to open.
 "DRINK IT" L drinks juice.

LISA

SESSION +2 CONTINUED

"FEED LISA" L is eating. M says, "What is Lisa doing?"
 "BLOW IT" L blows on her hot food.
 "SEE IT" L is at recorder trying to open it.
 "SEE IT" L was winding the Jack-in-the-Box and he popped up.
 "PUT IT" L pushes Jack-in-the-Box in.
 "PUSH IT" L pushes the Jack-in-the-Box in.
 "RING IT" 3X L dials toy phone.
 "RIDE IT" L walks to her rocking horse.
 "CLOSE IT" L closes the surprise box.
 "CLAP HANDS" 2X L holds the Jack-in-the-Box's hands.
 "FOUND THEM" L picks gloves off the floor.
 "WEAR IT" 5X A is wearing a chain, L pulls it from around her neck.
 "WANT IT" L pulls chain off A's neck.
 "SIT DOWN" 3X L pushes the cat's back to make it sit down.
 "WEARING GLOVES" (I) A puts gloves on L and says, "You are wearing gloves."
 "GET SHOES" L to M. L is wearing socks but not shoes.
 "PLAY TOGETHER" L says this to her brother.
 "HOLD IT" A is carrying the recorder. L reaches out to take it from A.
 "HAVE IT" L grabs for A's necklace.
 "WEAR IT" L puts necklace on.
 "DID IT" L squeezes the squeaky pig.
 "GO AWAY" 2X Out of context, no apparent reference.

GROUP III:

SSV:

SSC:

VVC: "COULD HOLD IT" M holds out a banana to L. L puts out her hand.
 "COULD DRINK IT" M gives L apple juice.
 "COULD EAT IT" M gives L some cheese.
 "WANNA WEAR IT" L to her brother. Brother has the necklace and L is grabbing for it.
 "COULD DO IT" 3X A squeezes squeaky pig. L grabs it.
 SVV: "I COULD SEE" L reaches for toy ring that her brother has.
 SCC:
 VCC: "WANT SOME CHEESE" M is giving cheese to L's brother.
 "WANT THAT CHEESE" M is giving cheese to L's brother.
 "PUT IT DOWN" L puts her doll on the floor.
 "PICK UP CUP" L puts her cup down then says this to A.
 "OPEN PRIZE BOX (I) A asks "How do you open the surprise box?"
 "DROP QUARTER" L had just dropped the chain necklace but no quarters were apparent in the context.
 "PUT THAT DOWN" No apparent reference.

LISA

SESSION +2 CONTINUED

GROUP IV:
 SSVV:
 SSCC:
 VVCC:

GROUP V:
 SVC: "I EAT IT"
 "I DRINK IT"
 "THERE HE IS" (I)
 "I LIE DOWN"
 "I SEE IT"
 "I SIT DOWN"
 "MIKE WANT IT"

EXPLIC+ _____ : "HI GRANDMA PEARL" L looks at phone. Her grand-
 mother had called earlier.
 "HELLO FLUFFY" L picks up stuffed toy called "Fluffy."
 "HI MEASLES" 3X L says this after Jack-in-the-Box
 pops up. M refers to Jack as "Measles."
 "HI PUSSY CAT" L talking to toy cat.
 "HI MOMMY" L walks over to M.
 "BYE ANNIE" 3X A puts Raggedy Ann into the toy bag.
 "THANK YOU MOMMY" 7X After M has given L toys.
 "OH PRETTY" L looks at herself in the mirror while
 wearing the necklace.
 "OH PIG" A takes a toy pig from her toy bag.
 "HERE MICHAEL" 3X L hands her brother a toy horn.
 "HERE MOMMY" 4X L hands M a cup.
 "THANK YOU MOMMY" L takes cheese from M.
 "HERE MIKE" L gives her brother a pretzel.

Q+ _____ : "HOW YOU DO" (I) M is talking on the toy phone and
 says, "How do you do?"
 "HOW ARE YOU GRANDMA PEARL" (I) M and L are playing
 on a toy telephone and M asks, "How are
 you Grandma Pearl?"

NEG+ _____ :

INDETERMINATE: "GLOVE COVER" 3X L is holding two gloves.
 "SIT PUSSY CAT DOWN" L puts stuffed cat in sitting posi-
 tion.
 "GO WANT TO" M is leaving house, L follows her to door.
 "HELP MOMMY" 3X L wants M to help her take off her pants.

LISA

SESSION +3

DUMMY+ _____:

REDUPLICATED _____:

EMPTY PIVOT+ _____:

GROUP I:

SS:

VV:

CC: "IT BACK" (I) 2X L takes a toy car apart. A says, "Put it back together."

"A TURTLE" 2X L sees a toy pull turtle in the corner of the room.

"THE CAR" (I) L hands A a car. A says, "There's the car."

"BOX A MEASLES" 5X L walks across room and gets Jack-in-the-Box.

"THE BALLIE" L points to picture of a ball on a box.

"RACING CAR" L hands A a car.

"THE GRAPES" L gets grapes for puzzle.

"BELT OFF" 4X L tries to open A's belt.

"BOOK BACK" (I) 3X A takes a book from L. A says, "I'm going to give the book back."

"OTHER BOOK" (I) A gets another book and says, "I have another book."

"PUSSY CAT" 4X L points to a cat lying on floor.

"RIGHT HERE" (I) A says, "I'm going to put the dog on the floor, right here."

"PUSSY CAT NELL" (I) L is looking at a book. A says, "That's a picture of Pussy Cat Nell."

"TEDDY BEAR" 4X L sees a bear toy on floor.

GROUP II:

SV: "TURTLE SLEEP" 2X L sees toy turtle on floor.

"CARS HAVE" (I) A asks, "What do the cars have?"

"MAN RIDING" (I) 2X A is reading a book to L and says, "The man is riding."

"DOGGIE SAY" 2X L is going through an animal calling routine with M.

SC: "APPLE IN" 4X L puts apple piece from puzzle into puzzle frame. A asks, "What goes in the puzzle?"

"PEAR IN" L puts pear piece from puzzle into puzzle frame. A asks, "What's in now?"

"ANNIE IN" (I) 3X A puts Raggedy Ann doll into a box.

VC: "HOLD IT" A has a fork, L reaches for it.

"SEE THAT" L grabs for A's fish necklace.

"OPEN IT" 29X L holds out various things to be opened.

"KISS IT" 2X L holds out her finger to M.

"DRINK MILK" A asks L, "What does the fish do with his mouth?"

"OPEN CAR" 2X L gives a toy car to A.

"WANT IT" 3X L reaches for a car.

"WANT DOGGIE" L sees toy dog on the floor.

LISA

SESSION +3 CONTINUED

"PULL IT" 2X L is pulling on A's necklace. A asks, "What are you doing?"

"RIDE IT" 2X L gives A a truck.

"EAT IT" L gives A a picture of ice cream.

"DO IT" 2X L gives A the squeaky pig.

"SIT DOWN" 3X L to A.

"WANT IT" L grabs a book on the floor.

"READ IT" 4X A is holding a book.

"PUT IN" (I) 5X L is doing a puzzle and picks up the banana piece.
A says, "Put the banana in."

"WANT CAR" L walks across room to get toy car.

"WANT BAG" 3X L grabs A's toy bag.

"EAT COOKIE" A and L are eating cookies.

"HOLDIN ANNIE" (I) L is holding the Raggedy Ann doll. A says, "You holding Annie."

"RIDING HORSE" (I) L is riding her horse. A says, "You're riding the horse."

"PULL IT" 2X L gives A a turtle with a hat on. L is trying to get the hat off.

GROUP III:

SSV: "THE CAR BROKE" (I) L has a broken car. A says, "The car got broken."

SSC:

VVC: "SHOULD BE WATER" 7X L is pointing to A's fish necklace.

SVV: "TRUCK GOT BROKEN" 2X L picks up a broken toy truck.

SCC: "THAT A COVER" L is holding a towel and a doll. A asks, "What is that?"

"THAT A FISH" 2X L looks at A's fish necklace.

"THIS A DOGGIE" (I) A is holding a dog and asks, "Is this a doggie?"

"IT A HORSIE" (I) A points to the horse and says, "It's a horse."

"THAT THE BUTTON" (I) 3X L sees a button and points to it. A says, "That's a button."

VCC: "PUT IT ON" L picks up a car stand and a car.

"OPEN THE GIRL" 2X L is playing with the surprise box.

"DO A RABBIT" L and A are playing with several squeak toys including a rabbit.

"GET THE BALLIE HERE" 2X L points to a ball on the floor.

"PUT IT IN" L is putting a puzzle piece in puzzle frame.

"SITTING DOWN ON MEASLES" (I) 2X L sits down on the Jack-in-the-Box.
A says, "You're sitting down on measles."

GROUP IV:

SSVV:

SSCC:

VVCC: "SHOULD BE IN WATER" L refers to A's fish necklace which she is playing with.

LISA

SESSION +3 CONTINUED

GROUP V:

SVC: "I LIKE CANTALOPE" 2X
 "I WANT FORK" 2X
 "I DO IT"
 "I WANT CAR" 5X
 "I GOT IT" 6X
 "I PLAY THAT ONE"
 "I SEE THAT"
 "I SEE FISH"
 "I GOT TRUCK"
 "I GOT THE BALL"
 "I WANT CAR" 19X
 "I WANT ANNIE" 4X
 "I WANT PUSSY CAT"
 "I GOT RACING CAR"
 "I WANT IT"
 "I WANT TRUCK"
 "I WANT THE CAR"
 "I WANT CAR" 4X
 "I LIKE GRAPES"
 "I LIKE PEAR"
 "I LIKE APPLE"
 "I WANT BUBBLES" 3X
 "I SEE HORSIE" 6X
 "I LIKE HORSIE"
 "I WANT IT"
 "MOMMY CARRY ME" 3X
 "I COULD WEAR IT" 3X
 "I WANT PUZZLE"
 "I WANT CAR" 2X
 "I GOT IT" 3X
 "I GOT PENNY"
 "ANDRYA OPEN IT"
 "I HAVE TO URINATE" (I) 3X
 "I DID URINATE" (I)
 "I WEAR IT NOW"
 "TRUCK GOT BROKEN WHEEL"
 "I SITTING DOWN ON MEASLES"

Q+ _____:

NEG+ _____: "NO WHEELS" (I) L looks at broken car without wheels.
 A says, "It has no wheels."

LISA

SESSION +3 CONTINUED

INDETERMINATE: "WALKING MAN" L and the examiner look at a book and see
a picture of a man walking.
"ANNIE HOLDING" L is holding Annie.

APPENDIX II

SYNTACTIC CORPORA: MARJORIE

SYMBOLS

Mj = Marjorie

M = Mother

(I) = Imitation

_X = # times produced

A = Examiner

MARJORIE

SESSION 0

DUMMY+ _____ :

REDUPLICATED _____ :

EMPTY FORM+ _____ :

GROUP I:

SS:

VV: "SIT DOWN" Mj pulls a chair up to the table for M.

CC: "FUNNY EYES" Mj points to the Jack-in-the-Box's eyes.

"BABY PUPPET" Mj holds up a puppet that is a baby.

"SCRAMBLED EGGS" Mj mixes with a spoon in an empty bowl. M had asked, "What can you make me for breakfast?"

"NEW PUPPET" Mj takes a puppet off the shelf and brings it to M.

"MORE PUPPET" Mj gets another puppet from shelf, she brings it to M.

"MAN PUPPET" M holds up a puppet that is a man.

"MORE BLOCK" 2X Mj brings several blocks from the shelf to the table.

"RAGGY EYES" Mj points to Raggedy Ann's eyes.

"PRETTY YOU" (I) Mj puts a hat on. M says, "It's pretty on you."

"MOMMY BUN" Mj is playing at the toy stove. M asks, "What are you making?"

"NEW ALSO" (I) Mj had picked up a new puppet and said, "New." M picked up another new puppet and said, "This is new also."

"UP TABLE" M is sitting on the table, Mj puts her arms up to M.

"MORE TOWER" 2X Mj had been building a tower. She got more blocks then continued making the tower taller.

GROUP II:

SV: "MOMMY DO" Mj is trying to put the Jack back in the box. She can't close the box so she hands it to M.

"JENNY COMING" Mj and M are talking about who comes to the nursery.

"PUPPET SLIDE" Mj pushes a puppet down the slide.

"JENNY SLIDE" After Mj goes down the slide.

"MARGIE SLIDE" Mj goes down the slide.

"MOMMY TEASE" M says, "Mommy's going down the slide." M walks to slide.

"JENNY TEASE" Mj says to M.

"JASON TEASE" Mj says to M.

"MARGIE SIT" 3X Mj sits in a chair.

SC: "LISA HORSE" Mj to M while riding the rocking horse.

"PUPPET HERE" Mj was looking for the boy puppet. Mj finds the puppet on the floor.

"MOMMY APPLE" The nursery school teacher gives Mj an apple. Mj holds out the apple to M.

MARJORIE

SESSION O CONTINUED

"MARGIE SPOON" Mj points to a spoon on the coffee table.
 "TRUCK HERE" Mj points to a truck on the floor.
 "TRUCK WINDOW" Mj hears a truck pass outside and runs to the window.
 "BABY SOON" Mj and M talking about who is coming to the nursery.
 "MOMMY BLOCK" Block falls to the floor and Mj can't reach it.
 "MARGIE HORSE" Mj runs to the horse trying to get on.
 "MOMMY OFF" Mj is riding the horse and stops rocking.
 VC: "DO IT" Mj puts the blocks into the shape box.
 "HELP ME" 2X Mj can't close the Jack's box.
 "GET OFF" Mj to M after M stops rocking on the horse.
 "CLOSE IT" Mj can't close the Jack's box.
 "KISS JACK" Mj kisses the Jack.
 "PUT APPLE" Mj puts her apple on the table.
 "KISS IT" Mj falls and holds hand out to M.
 "SLIDE DOWN" Mj climbs up the steps to the slide.

GROUP III:

SSV:
 SSC:
 SVV:
 SCC:
 VVC:
 VCC:

GROUP IV:

SSVV:
 SSCC:
 VVCC:

GROUP V:

SVC:

EXPLIC+ _____ : "HELLO MARGIE" (I) First M uses puppet and says,
 "Hello Margie," then Mj imitates.
 "MOMMY HORSE" 3X Mj drags M to the horse and tries
 to get on.
 "MOMMY TRUCK" After Mj hears a truck outside.
 "MOMMY BLOCK" Mj is holding a block and talking to M.
 "MOMMY JACK" Mj is holding the Jack-in-the-Box and
 making it pop up.

Q+ _____ :

MARJORIE

SESSION O CONTINUED

NEG+ _____ :

INDETERMINATE:

MARJORIE

SESSION +1

DUMMY+ _____: "a DADDY" Mj looks at picture of a man in a book.

REDUPLICATED _____:

EMPTY FORM+ _____:

GROUP I:

SS: "ROCKING CHAIR" Mj walked by the rocking chair and it hit her in the eye.

VV:

CC: "OUT THERE" Mj follows M out of the kitchen.

"BACK SOON" Jan left the room. Mj says this to M after Jan left.

"MORE CRAYON" Mj reaches for another crayon.

"FRED HOUSE" (I) M says, "We buy crayons at Fred's house."

"YELLOW CRAYON" Mj points at a crayon on the table.

"GREEN CRAYON" Mj picks up a crayon.

"MAUDY CRAYON" (I) Mj points to a crayon on the floor. M says, "That's Maudy's crayon." Mj says, "Yeah."

"DOWN STAIRS" Mj climbs down the slide's ladder.

"CRAYON BOX" Mj tries to take crayons from box. This utterance is preceded by, "Out."

"DOWN STAIRS" Mj is looking at a picture of a boy and girl going down some steps.

GROUP II:

SV: "ALLIGATOR DUST" Mj uses the alligator puppet to dust the table.

"MOMMY MAKE" Mj holds coffee pot out to M.

"JAN COMIN" 4X Mj hears Jan in the hall.

"CATHY COMING" Mj sees Cathy enter the nursery room.

"MAUDY SWINGING" Mj is looking at a picture of a little girl swinging.

"ALLIGATOR SLEEPING" Mj lies alligator down on a chair.

SC: "MOMMY BROOM" Mj points to broom, then drags M to it.

"SUSIE CRAYON" Mj sees picture of a girl drawing with crayons.

"MOMMY CRAYON" Mj holds out box of crayons to M after she can't take the crayons out herself.

"HERE DOLL" Mj brings a doll to M.

"ALLIGATOR STAIRS" 2X Mj walks the alligator puppet down the stairs.

"DADDY DOGGIE" M asks, "What was the name of the dog that daddy brought home last night?" Followed by "Bring."

VC: "WIPE DISH" M asks Mj, "What's Cathy doing in the kitchen?"

"SLIDE DOWN" Mj pushes alligator down the slide.

"DRAW CRAYONS" 3X M asks, "Would you like to draw, Margie?"

"DRAW PAPER" While Mj is drawing on paper with crayons.

MARJORIE

SESSION +1 CONTINUED

GROUP III:

SSV:

SSC:

SVV:

SCC: "JUDY BACK SOON" M asks Mj, "What's Judy's last name?"

VVC:

VCC:

GROUP IV:

SSVV:

SSCC:

VVCC:

GROUP V:

SVC: "MOMMY KISS ALLIGATOR"
 "JENNY MOVE A CHAIR"
 "MARGIE MOVE A CHAIR"
 "MOMMY MOVE A CHAIR"
 "MARGIE SLIDE DOWN"
 "MOMMY READ BOOK"
 "MOMMY READ IT"
 "I SEE TEDDY"
 "OVERALL STUCK ROCKING CHAIR"
 "MOMMY BE A CRAYON"
 "JAN CLOSE IT" 2X
 "ELAINE DRAW CRAYON"

EXPLIC+ _____: "MOMMY DONE" Mj puts down crayon she had been using.
 "MOMMY HERE" Mj hands M a dust cloth.

Q+ _____:

NEG+ _____:

INDETERMINATE: "BACK IN CRAYONS" Mj tries to put crayons in box.
 "READ IT BOOK" Mj brings book to M.

MARJORIE

SESSION +2

DUMMY+ _____:

REDUPLICATED+ _____: "HORSIE HORSIE" M makes horse rock. Mj is not on horse.

EMPTY FORM+ _____:

GROUP I:

SS: "DADDY COW" M picks up toy bull, Mj looks at its genitals. Followed by, "Penis."

"BUS DRIVER" M is playing with a toy bus. M asks, "What's inside the bus?"

VV:

CC: "FLOWERS LEAVES" (I) 2X Mj and M are looking at a picture of flowers and leaves. M says, "Those are flowers and leaves."

"SLIDING POND" Mj pushes the doll down the slide.

"PUPPET GIRL" Mj brings a girl puppet to M.

"BULL PUPPET" Mj gets bull toy.

"IN THIS POCKETBOOK" Mj is looking for the beads. She opens the pocketbook and finds them.

"IN POCKETBOOK" Mj finds the beads in the toy pocketbook.

"JENNY POCKETBOOK" Mj is playing with the beads and the pocketbook and talking to M. M interprets as, "That's Jenny's pocketbook."

"MORE SPOON" Mj reaches up to the coffee table to get a second spoon.

"TWO SPOON" After Mj has taken another spoon.

"UP STAIRS" Mj climbs the stairs to the slide.

"ROUND STAIRS" 3X Mj attempts to climb up the slide instead of the steps to the slide.

"ONE MORE SPOON" 2X Mj tries to reach the spoons on the coffee table.

"TO MARGIE" M has pretzels. Mj is trying to get one from M.

"PRETZELS MARGIE" M has pretzels. Mj is trying to get them. Is preceded by "To Margie."

"COW PENIS" Mj is holding the genitals of a bull.

"BUS ASHTRAY" Mj picks up an ashtray with a picture of a bus on it.

GROUP II:

SV: "TEDDY CRY" Mj sees a picture of a boy crying.

"MARGIE CRY" This utterance followed, "Teddy cry." No contextual relation.

"BABY SLIDE" Mj puts baby on the slide.

"JENNY SLIDE" Mj to M after putting baby on slide.

"MOMMY EAT" 4X Mj watches M drink soda.

"MOMMY HAND" 4X Mj gives M a puppet to hold while Mj goes up slide. (Often uses "hand" instead of "take.")

MARJORIE

SESSION +2 CONTINUED

- "MOMMY DO" Mj is on slide and can't climb down the steps.
- SC: "MARGIE UP" Mj holds out hands to M to be lifted up.
- "MARGIE MORE" Mj reaches for another pretzel.
- "BEADS POCKETBOOK" Mj looks for beads in the pocketbook.
- "MOMMY BELT" Points to the puppet's belt, then to M's waist. M is not wearing a belt at the time.
- "BULL TABLE" Mj puts toy bull on the table.
- "BEADS THERE" Mj opens the pocketbook and finds the beads.
- "MOMMY HERE" Mj brings M to the slide.
- "PENIS OFF" Mj is pulling on bull's genitals.
- "MOMMY ON" M is sitting on the table.
- "MARGIE SPOON" Mj reaches for another spoon.
- "MARGIE SLIDING POND" Mj starts onto the slide.
- "CATHY SANDALS" Mj points to Cathy's sandals and then says, "Mommy sandals on."
- "MARGIE SANDALS" Out of context. Follows, "Mommy sandals on."
- "CATHY TOES" M asks Mj, "What does Cathy have sticking out of her sandals?"
- "CATHY OFF" Mj gives Cathy the bull pointing to the genitals.
- VC: "SLIDE ON" 2X Mj slides down the sliding pond.
- "PLAY BALL" Mj touches M while holding the ball.
- "HAND PRETZELS" Mj holds pretzels out to M. (Mj often uses "hand" instead of "take.")

GROUP III:

SSV:

SSC:

SVV:

SCC: "ALLIGATOR MORE PRETZELS" 5X Mj walks to kitchen holding the alligator.

"BEADS IN THERE" 2X Mj looks in pocketbook and finds the beads.

"MOMMY ON HERE" Mj walks over to sofa where M is sitting.

"CATHY ON HERE" Cathy is sitting on the sofa.

"MARGIE BY SELF" Mj attempts to self start on the slide. Said to M after M started to push Mj down the slide.

"MARGIE UP HERE" Mj is sitting on top of the slide.

"MOMMY SANDALS ON" Mj points to M's sandals.

VVC:

VCC:

GROUP IV:

SSVV:

SSCC:

VVCC:

MARJORIE

SESSION +2 CONTINUED

GROUP V:

SVC: "JENNY SLIDE DOWN"
 "JENNY PUSH YOU"
 "MARGIE RIDE HORSE"
 "MARGIE HOLD SPOONS"
 "MARGIE STAND UP" 2X
 "JUDY COME HERE ASHTRAY"
 "MAN GOING BUS"
 "JASON SIT DOWN THERE"
 "MARGIE SIT DOWN"
 "MARIA SIT DOWN OUTSIDE"

EXPLIC+ _____ : "BYE BYE CATHY" Mj to Cathy as Cathy enters kitchen.
 "MOMMY MARGIE" M is in playroom, Mj is near kitchen
 and is holding her juice glass and drink-
 ing juice.
 "HI MARGIE" (I) M uses puppet to say, "Hi Margie."
 "MOMMY MORE" Mj is near pretzel box but can't reach
 it. She calls to M across the room.
 "MOMMY SLIDE POND" Mj is trying to climb the steps
 of the slide without success, calls to M.
 "MOMMY MORE JUICE" M holds out juice glass and calls.

Q+ _____ :

NEG+ _____ : "NO BABY" Mj pulls toys from the shelf but leaves
 the doll.

INDETERMINATE: "ME CATHY" Mj goes into kitchen to get a pretzel.
 "MOMMY BABY" Mj is holding a woman puppet on her hand.
 "SLIDE ON MARJORIE" Mj climbs up slide.
 "TOGETHER SPOONS" Mj points to a large group of spoons.

MARJORIE

SESSION +3

DUMMY+ _____ :

REDUPLICATED+ _____ : "MARGIE MARGIE" Mj runs toward kitchen. Followed by, "pretzel."

EMPTY FORM+ _____ :

GROUP I:

SS: "THAT ONE" Mj holds a block over her head. Followed by, "That one head."

VV:

CC: "FOUR DOLLS NOW" (I) M says, "I have four dolls now," after Mj gave M another doll.

"SOME BLANKET" M says, "Look in the carriage for a blanket."

"YELLOW PILLOW" Mj picks up the doll's pillow.

"BLUE PILLOW" Mj finds another pillow.

"FIVE MINUTES" (I) M says, "We are leaving in five minutes."

"CHU CHU CHUGGER" Mj is pulling a train toy across the room.

GROUP II:

SV: "TRICIA LAX" 3X Mj puts doll called Patricia on the toy bed to relax.

"VERONICA SLEEPING" 2X Mj puts Veronica on the bed.

"THIS DO" (I) Mj is looking for the doll's blanket. M finds a towel and asks, "Will this do?"

"MARGIE SLIDE" Mj climbs up steps of slide.

SC: "DOLL NIGHT-NIGHT" Mj puts a doll in the toy bed.

"TRICIA PILLOW" 3X Mj puts Patricia doll on the pillow.

"MARGIE TOWEL" 3X Mj runs to kitchen and gets another towel.

"CATHY TOWEL" Cathy takes towel from Mj. Mj follows Cathy.

"MARGIE HORSE" Mj goes to rocking horse and tries to get on.

"PRETZEL HOLE" 2X Mj puts a pretzel into a hole in one of the blocks.

"MOMMY THIS" 2X Mj hands M her pretzel.

VC: "COVER DOLL" 2X Mj puts a towel over a doll.

GROUP III:

SSV: "BABY DOLL LAX" Mj puts a doll on a pillow.

"ALL DOLLS SLEEP" Mj is looking at several dolls lying on the bed.

"VERONICA, PAT, RAGGY LAXING" Mj is looking at the dolls on the bed.

SSC: "BABY DOLL BIB" (I) M says, "The baby doll has a bib."

"THAT ONE HEAD" Mj is holding a block over her head.

SVV:

SCC:

MARJORIE

SESSION +3 CONTINUED

VVC:

VCC: "LIE ON PILLOW" Mj put a doll on a pillow.

GROUP IV:

SSVV:

SSCC:

VVCC:

GROUP V:

SVC: "MOMMY HAND RHONDA"
 "MARGIE PUSH THEM"
 "CATHY LIE DOWN"
 "DADDY LIE DOWN"
 "DOLL HAS BLANKET"
 "BLANKET COVER DOLL"
 "CATHY HAS BLANKET"
 "TOWEL COVER DOLL"
 "I GUESS IT"
 "MOMMY LIE ON PILLOW"
 "CATHY GIVE MARGIE NOTHER PRETZEL"
 "MOMMY CLIMB ON"
 "I SIT DOWN" 2X
 "PRETZEL GO HOLE"
 "MARGIE PRETZEL GO HOLE"
 "MOMMY EAT THIS" 2X

EXPLIC+ _____: "NIGHT DOLL" Mj puts doll on pillow.
 "NIGHT DOLL BABY" Mj puts doll on pillow.
 "MOMMY PRETZEL" Mj calls to M. Mj had dropped her
 pretzel.
 "MOMMY NOTHER ONE" Mj walks to M who is in kitchen.
 Is referring to a pretzel that she is
 holding.

Q+ _____:

NEG+ _____: "NO DOLLS BED" (I) M looks at doll's bed and says,
 "There are no dolls in the bed."

INDETERMINATE: "MOMMY SOME LAXING" 2X In conversation with M about some-
 thing that had happened the day before,
 M corrects Mj saying, "Mommy relax some."

MARJORIE

SESSION +3 CONTINUED

"MARGIE PRETZEL HOLD" Mj hands her pretzel to her M.
"PRETZEL MARGIE" M is holding a pretzel.

MARJORIE

SESSION +4

DUMMY+ _____ : " @ BATHROOM" M asks Mj, "Where should we go now?"
 " @ COUCH" Cathy asks Mj, "Where is Mommy?"
 " @ WATER" Mj watches Cathy drink water.

REDUPLICATED+ _____ :

EMPTY FORM+ _____ :

GROUP I:

SS: "THE KANGAROO" 2X Mj looks into the carriage and sees the kangaroo.
 M asks, "What's in the carriage?"

VV:

CC: "IN 'GINIA" 2X M asks Mj, "Where are Judy and Michael?"
 "NURSERY BOAT" Mj is playing with a boat from the nursery. Had
 previously been talking about different boats.
 "THIS TOO" Mj is carrying several objects. She walks to the stove
 and picks up a spoon.
 "RED ONES" Mj brings red blocks to the table.
 "ALLIGATOR BLANKET" Mj picks up a blanket that had covered the
 alligator.
 "MARGIE HOUSE" M asks Mj, "Where do you want to go?"

GROUP II:

SV: "MARGIE SEE" 2X M and Mj are talking about a friend named Bobby.
 "BEAR HAS" M asks Mj, "Who else has feet?"
 SC: "DADDY DOCTOR" 2X M asks, "Who is a doctor?"
 "THAT MARILYN" (I) M points to Marilyn saying, "That is Marilyn."
 "MARGIE MORE" Mj is holding a cup that had been filled with water.
 Mj holds cup out to M.
 VC: "PLAY SAND" M asks Mj, "What do you do at school?"
 "MOVE THAT" Mj pushes a chair out of her way.
 "RUBBING NOSE" 2X Mj is rubbing two kangaroo's together. M asks,
 "What are you doing?"
 "WANT PRETZELS" Mj walks toward kitchen.
 "GO BATHROOM" Mj is in the doll carriage. Cathy asks, "Where do
 you want to go?" Cathy has been pushing the car-
 riage.
 "PUSH ME" Mj is in the carriage.
 "PUSH YOU" Mj gets out of carriage and points from M to carriage.
 "WANT ASHTRAY" Mj is looking at an ashtray.

GROUP III:

SSV: "TRICIA RAGGY WATCH" Mj sits the dolls named Patricia and Raggy
 on the side while she plays with other ones.

MARJORIE

SESSION +4 CONTINUED

"HER FOOT STUCK" The doll's foot got stuck in the carriage.

"THAT RAGGY GO" Mj puts Raggy in the carriage.

"ROCKING CHAIR ROCK" Mj puts her foot on the chair and pushes.

SSC:

SVV:

SCC: "RAGGY THIS CARRIAGE" Mj puts Raggy in the carriage

"KANGY OUT MY TUMMY" Mj takes baby kangaroo out of mother kangaroo's pouch.

VVC: "MAKE FEEL BETTER" M asks Mj, "What does the doctor do?"

"GO SEE MOMMY" Mj is in carriage and Cathy is pushing her.

VCC: "SEE BOBBY IN SCHOOL" (I) M to Cathy, "We see Bobby in school."

"GET THIS PAIL" Mj points to a pail.

"WANT WATERING CAN" (I) M asks Mj, "You want the watering can?"

"GO WATER IN SCHOOL" M asks, "What do you do in school?"

"GET ME TOY" Mj to M.

"PUT HIM ON" Mj is holding the kangaroo and the ribbon for his neck.

"PUT THE STRING ON" Mj is holding the kangaroo and his ribbon.

"KISS WITH YOUR LIPS" (I) M and Mj sees a picture of lips. M says,
"You kiss with your lips."

"PUT BABY BIB ON" Mj has the baby doll and a ribbon.

"HAVE TWO NOSE" Mj points to doll's nose and then kangaroo's nose.

"TAKE 'EM BACK" Mj hands M a piece of paper.

GROUP IV:

SSVV:

SSCC:

VVCC:

GROUP V:

SVC: "I WANT PAIL"

"I WANT BOAT" 2X

"I WANT POT"

"MOMMY HOLD TRICIA"

"I WANT RAGGY"

"CAMEL HAS FEET"

"I WATERING FLOWERS"

"I WANT TABLE"

"MARGIE WANT PAIL"

"I WANT BLOCKS" 3X

"I WANT MORE BLOCKS"

"I WANT JACK"

"I HEAR HIM"

"LION MAKE NOISE"

"KANGY GO SLEEP"

"KANGY HAVE TUMMY"

MARJORIE

SESSION +4 CONTINUED

"MARGIE GET IN"
 "I SEE MARGIE IN MIRROR"
 "I WANT WATER"
 "I WANT MORE"
 "IT CALL A ROLLING PIN" (I)
 "SHOES STAY ON"
 "MARGIE TAKE SHOES OFF?"
 "MARGIE WANT FRED'S HOUSE SNEAKERS"
 "MARGIE WANT ASHTRAY BUS ON"

 EXPLIC+ _____ :

 Q+ _____ :

 NEG+ _____ :

INDETERMINATE: "GET IN KANGAROO" Mj puts the kangaroo into carriage
 the says . . .
 "SMOKE SILLY" 2X M says, "It's silly to smoke."

?

APPENDIX III

SYNTACTIC CORPORA: EMILY

SYMBOLS

E = Emily

M = Mother

A = Examiner

(I) = Imitation

X = # times produced

EMILY

SESSION 0

DUMMY+ _____ : "1 MOMMY" A asks E, "Who takes you to the playroom?"
 "2 WANT" E reaches for a toy on a high shelf.
 "A BALL" E throws the ball to A.

REDUPLICATED _____ :

EMPTY FORM+ _____ :

GROUP I:

SS: "MY BALL" E is playing with a ball. The ball rolls away and she runs after it. Followed by, "roll."

VV: "WANNA SEE" A takes a Raggedy Ann doll from her bag.

"HELP RUN" E is trying to make a top spin but can't.

CC: "MICKEY BED" E takes A into E's room and points to Mickey's bed.

"NICE BABY" A neighbor enters with her baby. E is touching her hand.

GROUP II:

SV:

SC:

VC:

GROUP III:

SSV:

SSC:

VVC:

SVV:

SCC:

VCC:

GROUP IV:

SSVV:

SSCC:

VVCC:

GROUP V:

SVC:

EXPLIC+ _____ : "HI GRANDMA" E turns to her grandmother who is sitting at the table.
 "BYE MONA" E to the baby as the neighbor leaves.

EMILY

SESSION O CONTINUED

Q+ _____ :

NEG+ _____ :

INDETERMINATE:

EMILY

SESSION +1

DUMMY+ _____ : " ^ SEE" E reaches for a doll that A is holding.
 " a SEE" E pulls on A's necklace.
 " x CLOSE" E closes the Jack-in-the-Box.
 " z FELL" E drops a car into the radiator.
 " i BABY" E hears crying outside of the apartment.

REDUPLICATED _____ :

EMPTY FORM+ _____ :

GROUP I:

SS: "ONE KEY" (I) M is locking the door and says, "Only one key fits in."
 VV: "WANNA SEE" 4X E is grabbing toys from A's toy bag.
 "MAKE GO" E is playing with a broken car and can't push it along
 the floor. E gives the car to A.
 "GET HELP" E to A when a car falls into the radiator.
 "HELP DO" E is trying to close the Jack-in-the-Box and can't get
 it to stay in.
 CC: "NICE BABY" E is playing with a doll and rocking it in her arms.
 "PUPPY BABY" E and A are looking at pictures in a book. E sees
 a picture of a puppy.
 "MY KEY" E takes the play keys from A's toy bag and jiggles them.
 "DADDY BOOK" E finds a book on the floor.
 "MY DADDY" After E finds a book on the floor A asks, "Who does the
 book belong to?"
 "MY NECKLACE" E takes a necklace from the toy bag and puts it on.
 "MIKE DOWN" (I) E picks up the microphone. A says, "Put the mike
 down."

GROUP II:

SV: "I SEE" A is holding a bag of toy tools. E grabs the bag.
 "I DO" E is hammering a toy nail with the toy hammer.
 "I HELP" Grandmother is making lunch. E runs into kitchen.
 SC: "EMILY ELEPHANT" A has a toy elephant from A's toy bag. E holds
 out her hand to get it.
 "KEY MINE" A takes her keys from E. E cries.
 VC: "SEE BALL" E points across room to the ball on the floor.

GROUP III:

SSV:
 SSC:
 VVC: "WANNA SEE MOMMY" E runs to door as she hears a key in the door.
 SVV:
 SCC:
 VCC:

EMILY

SESSION +1 CONTINUED

GROUP IV:
 SSVV:
 SSCC:
 VVCC:

GROUP V:
 SVC:

EXPLIC+ _____ : "HI GRANDMA" E turns to her grandmother who is sewing.
 "HI BABY" E picks up a doll.
 "HELLO BABY" A takes a doll from her toy bag.
 "OH BABY" E drops the doll.

Q+ _____ :

NEG+ _____ : "NO HELP" E is trying to close Jack-in-Box. A helps.
 "NO GOOD BOOK" A takes out a book to read. A says,
 "It's a good book."
 "NO MY BOOK" A gets one of E's books.

INDETERMINATE:

EMILY

SESSION +2

DUMMY: _____ : " ^ CAR" A rolls a car down a ramp.
 " ^ DOG" A and E are looking at a book. A asks,
 "What do you see?"
 " ^ DOLL" E walks over to her dolls and picks one up.

REDUPLICATED _____ :

EMPTY FORM+ _____ :

GROUP I:

SS:

VV: "WANT GO" 4X Mickey and the housekeeper leave the house.

"WANT SEE" A takes the bag of cars from the toy bag.

"WANT HELP" 2X Mickey is putting her dolls to bed. E walks over
to her.

CC: "NOTHER MORE" A is taking cars from her bag and handing them to E.

"MICKEY PRETZEL" E finds a pretzel that Mickey had been eating.

"NEW CLOCK" E points to a clock on the kitchen wall.

"ALL CAR" (I) A asks, "Do you want all the cars?"

"ALL WAY" (I) A says, "Take him all the way out." A refers to
Jack-in-Box.

GROUP II:

SV: "I SEE" A is holding the microphone.

"YOU WANT?" E holds out her frankfurter to A.

"IT IS" (I) A takes a squeak toy from her bag and asks, "Do you
know what it is?"

"IT FELL" (I) The ball drops from E's hands. A says, "It fell."

SC: "IT HORSE" E puts the Jack-in-the-Box on the rocking horse.

VC: "SEE CAR" E holds out a car to the housekeeper.

"SEE THAT" E drops a piece of food into radiator.

"WANT MOMMY" 2X E to A.

"WANT DOOR" E goes to the door after Mickey leaves.

"WANT THIS?" E gives A the necklace.

"WANT DOLL" E runs into her room. E comes back with a doll.

"WANT OUT" 2X E is at door to terrace.

"COMB HAIR" E touches her hair after Mickey had her hair combed.

"NEED COMB" 2X E grabs at comb in Mickey's hand.

GROUP III:

SSV:

SSC:

VVC:

SVV: "IT MOVE TALK" E is showing A one of her dolls that moves and talks.

EMILY

SESSION +2 CONTINUED

SCC:

VCC: "WANT SHOE OUT" E is trying to take one of her shoes off.
 "SEE THAT CAR" E and A are on terrace looking at the street.

GROUP IV:

SSVV:

SSCC:

VVCC:

GROUP V:

SVC: "I WANT UPFY"

"I WANT MOMMY"

EXPLIC+ _____ : "OH CAR" E sees a car from the terrace.
 "BYE MUFFY" Neighbor leaves with her dog.
 "OH BROKE" E finds a broken car.
 "LOOK BABY" 2X Neighbor enters with her dog and baby.
 "LOOK DADDY" 2X E brings a broken car to her father.
 "LOOK PUPPY" E shows the dog a picture of a dog.
 "LOOK SHOE" E takes her shoe off and holds it up.
 "LOOK POKEY" E points to her guinea pig.
 "OH COOKIE" Daddy gives E a cookie.

Q+ _____ : "WHAT ALL THIS" 2X E holds up the wire to the micro-
 phone.

NEG+ _____ : "NO DO" A is putting her toys away.

INDETERMINATE: "CANDY MORE" E is eating candy and turns to daddy.

EMILY

SESSION +3

DUMMY+ _____ : " ^ SHOE" 2X E earlier had taken her shoe off and thrown it across the room. Now, she pointed to it saying, " shoe," followed by, "shoe out."
 " ^ TOY" E takes a broken toy car from the bag.
 " I BROKE" E is holding broken toy car.
 " ^ CAR" E is holding broken toy car.

REDUPLICATED _____ :

EMPTY FORM+ _____ :

GROUP I:

SS: "THREE CAR" E makes two cars crash.
 VV: "WANT PRESS" E is standing over the tape recorder.
 "WANT WASH" 2X E goes into the bathroom after eating.
 CC: "BROKE CAR" E takes a broken car from the car bag.
 "NOTHER TOY" E pulls the bag of tools from the toy bag.
 "APPLE JUICE" The housekeeper brings E some juice.
 "MICKEY HEAD" A points to a picture of Mickey and asks, "Who is this?"
 "MORE TOYS" E turns the toy bag over.
 "BAD GIRL" After E has turned the toy bag over.
 "ALL SET" 2X (I) A says, "We are all set." A has turned over the tape.
 "MICKEY PANTS" M brings E a pair of Mickey's underpants.
 "EMPTY CAR" 2X E had put blocks into a large toy car then dumped them out.
 "BROKE CAR" E puts a broken car into the toy bag.
 "OTHER SHOE" E took one shoe off then started to take off the other one.
 "MONEY STORE" (I) A gives E some pennies then says, "You need money for the store."
 "BABY MONA" E hears crying outside. A asks, "Who do you hear?"
 "MONA PIN" E finds a safety pin on the floor.
 "MOMMY SHOE" E and A are in E's room. E finds one of M's shoes on the floor.

GROUP II:

SV: "WHEEL BROKE" 2X E is holding a broken car without a wheel.
 "EM BROKE" E is holding a broken car that she had not broken.
 "EM GO" Mickey leaves apartment and E wants to go with her.
 SC: "DADDY CAR" A asks, "How does daddy get to the hospital?"
 "THAT MICKEY" A is holding a doll. A asks, "Who does that belong to?"
 "BALL BED" E throws a ball and it lands on the bed.
 "THAT MESS" E is eating and throws her food around, then looks at floor.

EMILY

SESSION +3 CONTINUED

"SHOE OUT" After E takes her shoe off earlier and notices it on the floor.

"MOMMY SHOE" E is trying to get her shoe off. E can't and turns to M.

"MOMMY HOME" 4X M enters the apartment.

VC: "WANT OUT" E is standing at front door.

"WANT TOY" E grabs for A's toy bag.

"SEE CAR" A is holding several cars.

"WANT MORE" E finishes a piece of banana.

"WANT MONA" E puts out her hands to grab for baby.

"SEE MONA?" E to neighbor who is holding her baby.

"SEE MONA" E is looking at baby who is in mother's arms.

GROUP III:

SSV: "THE CLOCK FALL" E drops the toy watch.

SSC:

VVC:

SVV:

SCC:

VCC: "WANT PLAY ROOM" Mickey left for the play room.

"SEE EMPTY CAR" E and A on terrace looking at cars.

"HAVE TWO EYE" A asks, "How many eyes do you have?"

GROUP IV:

SSVV:

SSCC:

VVCC:

GROUP V:

SVC: "I WANT IT"

"I GET IT"

"MOMMY READ MORE"

EXPLIC+ _____: "THANK YOU MOMMY" M gives E a banana.

"HI SUSU" When neighbor enters.

"HI MONA" When neighbor brings in baby.

"HELLO MONA" E looking at baby.

"BYE MONA" When neighbor leaves with baby.

"OH KISS" E kisses baby.

"UHOH BROKE" E is holding broken car.

Q+ _____: "WHERE MICKEY" 4X E to A after Mickey leaves.

"WHAT THIS" E holds up the squeaky elephant.

EMILY

SESSION +3 CONTINUED

"WHERE MOMMY" M goes into bedroom and E looks for her.
"WHERE PANTS" E went to bathroom and came back with-
out pants.
"WHERE BABA" E enters kitchen and can't find her
grandmother.

NEG+ _____ :

INDETERMINATE: "OUT CAR" 2X E takes the car out of the toy bag.
"CRY MONA" 2X E hears Mona cry.
"ROOM BABA" E looks for grandmother and finds her in
another room.
"MESS MICKEY" E walks into her room and looks at Mickey's
bed which had toys all over it.

EMILY

SESSION +4

DUMMY+ _____ : "a GOT" E grabs the microphone.
 " ^ BEACH" A asks E, "Where did you go?"
 " ^ WALK" A asks, "How do you get to the park?"

REDUPLICATED _____ :

EMPTY FORM+ _____ :

GROUP I:

SS:

VV: "WANNA SEE" 3X E is setting up tape recorder.

"WANNA PRESS" 4X E is pushing tape recorder buttons.

CC: "THE BOOK OUT" (I) A says, "Take the book out."

GROUP II:

SV: "MICKEY PUSH" Mickey pushed E down.

"I CAN" E grabs the tape recorder microphone from A.

"DADDY RIDE" E to her father pointing to bike.

"PAUL PLAY" E is looking at a book with A. Paul is a character in the book.

"SAW BROKE" E is holding a broken toy saw.

SC: "SHOE OUT" E has taken her shoe off and later looks at her foot.

VC: "WANT DOWN" 2X E is in her high chair.

"PUSH TRAY" E is pushing on the high chair tray.

"WANT TOY" E grabs toy bag.

"WANT HAMMER" A has tools. E reaches out.

"THANK YOU" After A gives E the hammer.

"SEE BALL" A has the ball. E holds out hands.

"SEE MICKEY" Mickey is in the bedroom. E runs after her.

"SEE BABY" A is holding a doll.

"WANT DADDY" Daddy is not home but E says this to A.

"GET DADDY" Said after A says, "Daddy is not home."

"FALL OUT" E throws a toy out onto the terrace.

"WANT PEEKABOO" E to A.

"WANT THAT" A is fixing microphone.

"TAKE CAR" E takes the toy car from A.

"SEE CAR" E is holding the car.

"WANT OUT" E is at door to the apartment.

GROUP III:

SSV:

SSC:

VVC:

SVV:

EMILY

SESSION +4 CONTINUED

SCC:

VCC:

GROUP IV:

SSVV:

SSCC:

VVCC:

GROUP V:

SVC: "PAUL PLAY PEEKABOO"

EXPLIC+ _____ : "HELLO MIKE" E picks up microphone.
 "PEEKABOO BABA" E is playing with grandmother.
 "UHOH BROKE" E breaks the toy scissor.
 "OH MINE" E takes the doll.
 "UHOH BABY" E drops the doll.
 "UHOH PEEKABOO" E drops the book about Paul
 playing peekaboo.

Q+ _____ : "WHERE KEY" E looks in toy bag.
 "WHERE MY MOMMY" E to A.

NEG+ _____ : "NO MICKEY" A asks, "Do you want Mickey to go too?"
 "NO TOYS" E is putting shapes into box and they
 don't fit.
 "NO TELL" A and E are alone. E throws toys around.
 "NO FIT" When shapes don't fit in box.
 "NO MICKEY" A has a doll and asks, "Is this Mickey's?"
 "NO DADDY" A asks, "Does this book belong to Daddy?"
 "NO TIRED" Grandmother says, "Do you want to sleep?"
 "NO TELL DADDY" E has ripped a book.

INDETERMINATE:

EMILY

SESSION +5

DUMMY+ _____ : "a FIX" E tries to put a wheel on a broken car.
 "i TRY" E tries to fix a broken car.
 " ^ DID" E puts wheel on broken car.
 " x FLIES" E throws a toy airplane up.
 " x FIND" E is looking through the toy bag and finds
 a pin.
 " i DO" E puts a shape into the shape box.

REDUPLICATED _____ :

EMPTY FORM+ _____ :

GROUP I:

SS: "THE MONKEY" (I) E sees a picture of a monkey on a car. A says,
 "The monkey sits on the car."
 "THIS TOY" E takes out a broken car. This utterance followed by
 "toy broke."
 "THE MONEY" 2X A asks, "Where is the money?" E goes to her bank.
 "THE CAR" A asks, "Where is the car?" E points to a corner of the
 room.
 "MOMMY MICKEY" Said after M and Mickey leave the house.
 VV: "WANNA GO" E follows M and Mickey to the door.
 "WANNA PRESS" 5X E is standing over the tape recorder.
 "WANNA CLOSE" A is closing the tape recorder.
 CC: "TWO TOY" E gets two bird toys from her room.
 "THE BIRD" 2X E is holding two bird toys.
 "TOYS OUT" As E turns the toy bag over.
 "THE BOOK" A is holding a book. E is standing with her hand out.
 "THE BROKE CAR" 3X E has a broken car.
 "THE TEA" E walks over to her grandmother who is drinking tea.
 "THE KEYS" E gets A's key from her pocketbook.
 "MORE MONEY" E gives A her change purse.
 "THE MONEY" E is holding several pennies in her hand.
 "THE PHONE" E to A when the phone rings.
 "NEW TOY (I) A asks, "Is that a new toy?" E holds a block box.
 "MORE PIECE" (I) A says, "That toy has more pieces."
 "THIS WAY" (I) A says, "Put it on this way." A refers to block
 tower.
 "ALL BROKE" E has several broken cars. A says, "They are all
 broken."
 "BABY MONA" A hears a baby crying. A says, "Is that baby Mona?"
 "TIME FOR LUNCH" (I) A says, "It's time for lunch."
 "THAT SIDE" E puts shape in wrong place on shape box. E turns
 box over.

EMILY

SESSION +5 CONTINUED

GROUP II:

- SV: "BABA COOK" A asks, "Where is Baba?"
 "WHEELS GONE" 2X E has several cars without wheels.
 "TOY BROKE" E has a broken car.
 "POKEY SLEEP" 3X E walks to the guinea pig's cage.
 "THEY GO" (I) 3X After M and Mickey leave A asks, "Where did they go?"
- SC: "MONEY INSIDE" (I) 4X M is shaking E's bank. M says, "The money is all inside."
 "THAT POKEY" E points to the guinea pig's cage.
 "THERE HOTDOG" E is eating a hotdog for lunch.
 "THERE POKEY" E points to guinea pig's cage.
- VC: "FALL DOWN" 4X E drops a doll.
 "WANT THAT" 3X E reaches for the microphone.
 "READ BOOK" E brings a book to A.
 "WANT TEA" E sees grandmother drinking tea.
 "GIVE MONKEY" A is holding a book about monkeys.
 "WANT SOME" A is eating some crackers.
 "BROKE AGAIN" (I) E had put the wheels back on the car but they fell off. A says, "It broke again."
 "PLAY MONEY" E has several pennies and is transferring them from the purse to the box and back again. A says, "What are you doing?"
 "DID IT" E puts a shape into the shape box.
 "WANT HELP" E to A when E can't reach the ball under the sofa.
 "SEE 'NANA" E points to bananas on top of refrigerator.
 "HELP ME" 2X E tries to reach bananas.

GROUP III:

- SSV:
 SSC: "THE MONEY INSIDE" E opens the box with the pennies.
 VVC: "WANT SEE INSIDE" E walks to tape recorder and tries to open it.
 SVV:
 SCC:
 VCC: "WANT THIS TOY" E reaches for squeaky elephant.
 "HOLD THE KEYS" E takes the keys from A.

GROUP IV:

- SSVV:
 SSCC:
 VVCC:

GROUP V:

- SVC: "THE CAR FALL DOWN"
 "IT FALL DOWN"

EMILY

SESSION +5 CONTINUED

"MONKEY FALL DOWN"
 "THEY FALL DOWN"
 "HOT DOG FALL DOWN"
 "DOGGY FALL DOWN"

EXPLIC+ _____ : "HELLO POKEY" E walks over to guinea pig's cage.
 "HI MOMMY" M comes home.
 "OH THE MONEY" E finds the pennies in a box.

Q+ _____ : "WHERE MICKEY" E looks around after Mickey leaves.
 "WHERE MOMMY" E looks around after M leaves.
 "WHERE MONEY" E put money into box then can't find it.
 "WHERE NANA" E was eating a banana but puts it down.
 "WHERE TOYS" A has packed up toy bag and put it in
 foyer.
 "WHERE DADDY" A had asked E, "Is Daddy at the
 hospital?"

NEG+ _____ : "NO SAME SIDE" E tries to put a shape into the box
 but it doesn't fit on the side she tried.
 "NO ON SIDE" E tries to put shape into box but it
 doesn't fit on the side she tried.

INDETERMINATE: "THE FALL DOWN MONEY" The pennies fall from purse.
 "OTHER WAY THIS" E tries unsuccessfully to put shape
 into the box.
 "OTHER WAY THE BUBU" A is looking for E's sore.
 "FALL DOWN CAR" E drops the car.
 "FALL DOWN BOTTLE" E's bottle falls on the floor.

EMILY

SESSION +6

DUMMY+ _____:

REDUPLICATED _____:

EMPTY FORM+ _____:

GROUP I:

- SS: "THE MONEY" E sees the money in the tape container then says, "money in."
 "THE BABY" A and E hear the baby cry. A asks, "Who is crying?"
 "THIS ONE" Followed by "broken" E picks up a broken car.
 "THIS TRUCK" A says, "Are any trucks broken?" E picks up a truck.
 "THE TRUCK" 2X E picks up a broken truck. Immediately follows preceding utterance.
 "THE PHONE" E hears the phone ring.
- VV: "GO SLEEP" 5X E puts several dolls into the doll bed.
 "WANT PRESS" E tries to open the tape recorder.
- CC: "THE BUBU" E points to her sore.
 "THE BABY" 2X A asks, "What do you hear?"
 "THE DOLL" A is holding a doll. E reaches for it.
 "THE PIPE" E finds her father's pipe on the table.
 "THE NECKLACE" 2X E takes a necklace from the toy bag.
 "THE KNEE" A asks, "Where is your bubu?"
 "THE BROKEN ONE" E is holding a broken car.
 "BROKEN ONE" 3X E gives A a broken car.
 "ALL SET" E lines up all the toy cars for a race.
 "THE WIRE" E picks up the wire for the recorder.
 "THE NOSE" E points to doll's nose.
 "THE HAND" E points to doll's hand.
 "MY GLASS" E to A who is sitting at table. The glass is on the table.
 "THE MONKEY" A asks, "Which book do you want?"

GROUP II:

- SV: "GIRAFFE CRY" E and A looking at a book with a picture of a giraffe crying.
 "WHEEL GO" E puts the wheel on the car.
 "KEY OPEN" E puts the key in the door.
- SC: "THAT EM" E points to a picture of herself.
 "THAT TRACK" A asks, "What is that?" A refers to toy tracks for a train.
 "BUS BROKEN" E finds bus without wheels.
 "HORSE HAT" (I) E puts her hat on the toy horse. A says, "The horse wears Em's hat."
 "THAT BROKEN" E gives A a broken car.
 "THAT A EYE" 2X E points to doll's eye.

EMILY

SESSION +6 CONTINUED

"MONKEY COLD" E and A looking at monkey book. There is a picture of a monkey in a snow storm.
 "MONEY IN" (I) There is money in tape container. A says, "The money belongs in the box."
 "MOMMY DOWNSTAIRS" A asks, "Where is M?"
 "THAT RIGHT" (I) A says, "That's right" after E puts block in box.
 VVC: "HELP ME" 4X E can't get ball from under sofa.
 "OPEN MONEY" E has money in a purse and can't open it.
 "PLAY MONEY" A asks, "What are you doing with the money?"
 "TURN SIDE" 2X E turns the shape box over.
 "FIND BABY" 2X E goes into her room. A asks, "What are you doing?"
 "OPEN BOX" E opens the tape container.
 "BUILD BLOCK" E is building a tower with blocks.
 "SEE TRUCK" E looks across the room. A asks, "What do you see?"
 "WANT WIRE" 11X E is pulling on wire from recorder.
 "PUT ME ON" E is standing at rocking horse.
 "GO HOME" E to A.
 "SEE NOSE" 3X E is looking in mirror at herself.

GROUP III:

SSV:
 SSC:
 VVC:
 SVV: "BABY GO SLEEP" 2X E puts doll in bed.
 SCC: "HERE THE MONEY" 2X E finds the money in a bag.
 "IT A DOLL" E points to a picture of a doll.
 "IT A DUCK" E points to a picture of a duck.
 "IT THE BROKEN ONE" 2X E picks up broken car.
 VCC: "GO TOO FAST" A is reading E a story about a car.
 "SEE THE BABY" 2X E holds up her doll.

GROUP IV:

SSVV:
 SSCC: "THIS ONE BROKEN ONE" E has a broken car.
 VVCC: "WANT SEE THE CAR" A is opening the toy bag.

GROUP V:

SVC: "MONEY FALL DOWN"
 "IT'S A BUBU"
 "THAT FALL DOWN"
 "GERAFFE FALL DOWN"
 "I FALL DOWN"
 "DOLL WASH HAIR"
 "I GET THAT"
 "MICKEY FALL DOWN"

EMILY

SESSION +6 CONTINUED

"DIANE FALL DOWN"
"DADDY FALL DOWN"
"KEY OPEN DOOR"
"I GO HOME"
"THE BOY SIT DOWN"
"I FIND WATCH"

EXPLIC+ _____: "GOODNIGHT MONKEY" E closes monkey book.

Q+ _____: "WHERE MONEY" E looks for change purse.

NEG+ _____:

INDETERMINATE: "MAKE NOISE MONEY" E drops pennies and they clatter.
"FEET WASH" E takes off socks and goes to bathroom.

EMILY

SESSION +7

DUMMY+ _____ :

REDUPLICATED _____ :

EMPTY FORM+ _____ :

GROUP I:

SS:

VV:

CC: "IN CLOSET" A asks, "Where is your coat?"
 "TOY OUT" (I) A asks, "Should I take the toys out?"
 "MY SHOES ON" E puts her shoes on.
 "SHOES ON" E had put her shoes on.
 "THAT WAY" E turns the puzzle board over.
 "THE BIRD" 2X E sees a picture of a bird.
 "PUSSY CAT" E points to picture of a cat.
 "THE BUNNY" E points to picture of a rabbit.
 "THE BOY" E points to picture of a boy.
 "THE RING" 2X A took out jewelery. A asks, "What do you want?"
 "THE FLOOR" After E drops the ring on the floor.
 "ONE MONEY" A gives E one penny.
 "ONE TWO MONEY" E is holding several pennies.
 "MY MONEY" 3X E takes the pennies from A.
 "ALL GONE" (I) 2X A says, "Then pennies are all gone."

GROUP II:

SV: "I KNOW" A says, "That's a bracelet you are wearing."
 "THAT POP" When the Jack-in-the-Box popped.
 "APPLE TURN" E is turning the apple puzzle piece to get it in.
 "MOMMY LOOK" E is looking in a mirror. M is not present.

SC: "THAT WIRE" (I) E grabs the recorder wire. A says, "That's the wire."
 "SUSAN HOME" After neighbor leaves.
 "THAT ANDY" A picks up Raggedy Andy.
 "BOW OUT" The dolls bow was untied and E notices it.

VC: "DO TODAY" (I) A asks, "What are you going to do today?"
 "PLAY TOYS" A asks, "What do you want to play with?"
 "GO HOME" E to A.
 "WATCH ME" E gets on horse.
 "PUT IN" E puts pennies in bank.
 "TURN APPLE" E turns apple to make it fit in puzzle.
 "TURN SIDE" E turns the puzzle board over.
 "SEE BIRD" 2X E points to bird picture.
 "EAT APPLE" E picks up apple puzzle piece and pretends to eat it.
 "LOOK RING" E holds up her finger with a ring on it.
 "FALL DOWN" E drops a car.

EMILY

SESSION +7 CONTINUED

"CREAM HAND" E brings cream to A and puts it on her hand.
 "WAKE UP" E shakes her doll.

GROUP III:

SSV:

SSC:

VVC: "WANNA TOUCH NOSE" E reaches for A's face.

SVV: "MOMMY GO SLEEP" M comes home and goes into bedroom.

SCC: "THERE MY DADDY" E and A looking at the street from the terrace,
 E sees her father.

VCC: "PUT MONEY INSIDE" A is holding the money and E has the purse.

"WANT THE BOY" E reaches for boy doll.

GROUP IV:

SSVV:

SSCC:

VVCC:

GROUP V:

SVC: "YOU PUT MONEY INSIDE"

"I WANT MORE MONEY"

"MOMMY MAKE PONY TAIL"

"MICKEY MAKE PONY TAIL"

"I WANT OFF"

"BABA COME BACK"

"I WANT TO GO HOME" 2X

"I CREAM HANDS"

"MICKEY HAS THE MONEY"

"I SEE COMB"

"MOMMY CLOSE EYES"

"I GO HOME"

"I WANT TO GO HOME" 4X

"I WANNA PRESS"

"I WANT PLAY ROOM"

"BABA TOUCH NOSE"

EXPLIC+ _____:

Q+ _____: "WHERE MONEY" E looks for purse.

NEG+ _____:

EMILY

SESSION +7 CONTINUED

INDETERMINATE: "INSIDE MONEY" E is holding the purse. A asks, "Where is the money?"

APPENDIX IV

SYNTACTIC CORPORA: DANIELLE

SYMBOLS

D = Danielle

M = Mother

A = Examiner

(I) = Imitation

_X = # times produced

DANIELLE

SESSION 0

DUMMY+ _____ : " I FOUND" A says, "Find the apple." D finds it.
" RIDE" D walks over to her bike.

REDUPLICATED _____ : "MORE MORE" 2OX At various times when D wants
recurrence of something.
"NICE NICE" D is standing next to neighbor's
baby.
"UP UP" D climbs onto the sofa.
"DOGGY DOGGY" D is looking at a picture of a
dog.

EMPTY FORM+ _____ :

GROUP I:
SS:
VV:
CC:

GROUP II:
SV:
SC:
VC:

GROUP III:
SSV:
SSC:
VVC:
SVV:
SCC:
VCC:

GROUP IV:
SSVV:
SSCC:
VVCC:

GROUP V:
SVC:

EXPLIC+ _____ :

DANIELLE

SESSION 0 CONTINUED

Q+ _____ :

NEG+ _____ :

INDETERMINATE:

DANIELLE

SESSION +1

DUMMY+ _____:

REDUPLICATED _____: "TOY TOY" D is dragging out a box of toys. Followed by, "heavy heavy."
 "HEAVY HEAVY" D is dragging out a box of toys.
 "MORE MORE" 7X At various times for recurrence of event.
 "OFF OFF" 2X D is taking blocks off a stick.
 "APPLE APPLE" D runs to kitchen where M is.
 "HOP HOP" 20X D is making a toy rabbit hop.

EMPTY FORM+ _____:

GROUP I:
 SS:
 VV:
 CC:

GROUP II:
 SV:
 SC:
 VC:

GROUP III:
 SSV:
 SSC:
 VVC:
 SVV:
 SCC:
 VCC:

GROUP IV:
 SSVV:
 SSCC:
 VVCC:

GROUP V:
 SVC:

EXPLIC+ _____:

DANIELLE

SESSION +1 CONTINUED

Q+ _____:

NEG+ _____:

INDETERMINATE:

DANIELLE

SESSION +2

DUMMY+ _____ :

REDUPLICATED _____ : "FINGER FINGER" D has made a bridge. A says, "A car could go through the bridge." D puts finger in.

"CHILDREN CHILDREN" D opens toy house and sees children inside.

"CHALK CHALK" 2X A asks, "Where is the chalk?" D points inside the house.

"BOY BOY BOY" 2X D is trying to put boy in a chair.

"BOY BOY" D puts boy in the chair.

"GIRL GIRL" 2X D sees girl sitting at toy desk.

"BOY BOY" 2X D sends boy down the slide.

"GIRL GIRL" A says, "Put the boy in the house."

"MAMA MAMA" 2X M enters the room.

"GIRL GIRL" D makes girl fly.

"BOY BOY" 2X D points to picture of a boy flying.

"MAMA MAMA" A starts to wind up Jack-in-Box. D takes it from A and gives it to M.

"BABY BABY" D finds doll without an arm. A asks, "What did the baby lose?"

"HAND HAND" D is having trouble putting the Jack's hand in the box.

"CLOSE CLOSE" D is trying to close the roof of the house.

"MOVE MOVE" 4X D pushes toy desk.

"JUMP JUMP" D sends doll down the slide.

"BROKE BROKE" D takes the arm off a doll.

"BLOCK BLOCK" D points to blocks.

"MORE MORE" 3X D points to other blocks on floor.

"HERE HERE" D holds out blocks to A.

"BRIDGE BRIDGE" A has built a bridge. D knocked it down. D holds out more blocks.

"HOUSE HOUSE" A has built a house from blocks.

"SWING SWING" D put boy on toy swing.

"SLIDE SLIDE" D picks up toy slide.

"CHAIR CHAIR" D puts boy into toy chair.

"MORE MORE" D sends several dolls down a slide.

"GIRL GIRL" 2X D has a girl doll.

"HOUSE HOUSE" D puts girl in house.

"MORE MORE MORE" 2X D gives A magnetic letters.

"BELL BELL" A rings bell on top of house. Followed by, "Andrya," "ring."

"HEAVY HEAVY" D picks up house.

"BOX BOX" D puts boxes together.

"WATER WATER" D is looking at a picture of water.

"CAR CAR" A asks, "What's in this picture?"

"MORE MORE" 3X A and D are reading a book and D turns the page.

DANIELLE

SESSION +2 CONTINUED

"ERNIE ERNIE" D points to picture of Ernie.
 "DOGGIE DOGGIE" 2X D points to picture of dog.
 "LION LION" D points to lion.
 "MONKEY MONKEY" 2X A asks, "What's this?"
 "ALLIGATOR ALLIGATOR" D points to alligator picture.
 "BOY BOY" A asks, "Who is this?" and points to a picture.
 "MORE MORE" 5X Asking for more juice.
 "PIGGY PIGGY" D gets pig book.
 "MAN MAN" D points to man in book.
 "ROCKY ROCKY" D goes to rocking chair.
 "UPPY UPPY" 2X D tries to get on big chair.
 "APPLE APPLE APPLE" D gets apple puzzle from bag.
 "TOY TOY" 2X D gets Jack-in-Box.
 "BLOCK BLOCK" D gets block bin.
 "HAND HAND" D is holding the Jack's hand.
 "HAIR HAIR" A asks, "What's this?" A is pointing to D's hair.
 "EYE EYE" 2X A asks, "What's this?" A is pointing to D's eye.
 "PIGGY PIGGY" D is looking at book of Three Little Pigs.
 "HERE HERE" D holds out the Jack to A.
 "MONEY MONEY" 2X D gets her bank.
 "HEAVY HEAVY" 4X D is holding her bank.
 "NICE NICE" D touches baby doll.
 "HORSE HORSE" D walks to side of rocking horse.

EMPTY FORM: _____:

GROUP I:

SS:

VV:

CC:

GROUP II:

SV:

SC:

VC:

GROUP III:

SSV:

SSC:

VVC:

DANIELLE

SESSION +2 CONTINUED

SVV:
SCC:
VCC:

GROUP IV:
SSVV:
SSCC:
VVCC:

GROUP V:
SVC:

EXPLIC+ _____:

Q+ _____:

NEG+ _____:

INDETERMINATE:

DANIELLE

SESSION +3

DUMMY+ _____ :

REDUPLICATED _____ : "MOMMY MOMMY" D calls to M who is talking to A.
 "TOY TOY" D is trying to pull a toy out of the bin.
 The toy is stuck and D says, "stuck."
 "OPEN OPEN" D gives A the closed Jack-in-the-Box.
 "HELP HELP" 2X D is trying to get toys from the bin.
 "TOY TOY TOY" A asks, "What do you want to play with?"
 "HEAVY HEAVY" D tries to lift bin then takes toys out.
 "UNDER UNDER" A ball rolls under the chest.
 "BALL BALL" D catches the ball.
 "TOY TOY" D points to toy shelf.
 "HOT HOT" D touches A's coffee cup.
 "DOG DOG" D gets the dog book and holds it out to A.
 "HORSE HORSE" D points to a picture of a horse.
 "NICE NICE" D kisses a bunny.
 "SHOE SHOE" D points to picture of rabbit putting his shoe on.
 "COOKIE COOKIE" D reaches for the cookies on the table.
 "ANDY ANDY" A has the Andy doll, D grabs it.
 "WAY WAY" D finishes the cookies. A asks, "What should we do with the cookie box?"
 "IN IN" D tries to put the Jack into the box.
 "OFF OFF" D pulls a string off the toy boat.
 "MORE MORE" 2X D looks around for her other toy chair.
 "COVER COVER" D puts the toy box cover on.

EMPTY FORM+ _____ :

GROUP I:

SS: "DOGGY TONGUE" D points to a picture of a dog with his tongue sticking out. Followed by "out."
 "DANIELLE TONGUE" D sticks her own tongue out.
 "COW PIECE" The cow piece of the puzzle falls out.
 "BOAT TOY" The toy boat falls off the shelf.

VV:

CC: "BLOCK TOY" A asks, "What toy do you want?" D gets blocks.
 "BOY TOY" 2X A asks, "What toy do you want now?"
 "MONSTER BOOK" D takes a book off the shelf.
 "CHICKEN BOOK" D gets the book about chickens.
 "DOGGY HOUSE" D points to a picture of a dog house.
 "DANIELLE HOUSE" D points to a picture of an apartment house.
 "BUNNY RABBIT" (I) A says, "That's a bunny rabbit."
 "DOG BOOK" D gets the book about dogs from the shelf.
 "BUNNY BOOK" D gets the book about rabbits.
 "BABY BUNNY" D points to a picture of a small rabbit.
 "TWO BABY" D points to a picture of two bunnies.

DANIELLE

SESSION +3 CONTINUED

"ANDRYA PUZZLE" A asks, "Whose puzzle is that?" It was Danielle's.
 "DANIELLE PUZZLE" 2X A asks, "Whose puzzle?"
 "PUZZLE BACK" D finishes puzzle and puts it on shelf.
 "ELEPHANT COOKIE" D takes an animal cracker from the box.
 "MONKEY COOKIE" D takes an animal cracker from the box.
 "OTHER COOKIE" 3X D takes out another cookie.
 "ALL GONE" 2X D looks into empty box.
 "DANIELLE STICK" D gets her stick blocks.
 "BIG BOAT" D took the toy girl off the large toy boat.
 "MORE CHAIR" D finds her toy chair.
 "OVER HERE" D is doing a puzzle. A picks up a piece and asks, "Where does this go?"
 "ONE LITTLE" M says, "Eat a little more," and holds out a kernel of corn.
 "MORE DOG" D is building a dog house with blocks and runs out of blocks. D gets more blocks.

GROUP II:

SV: "ANDRYA DRINK" D sees A drinking coffee.
 "DOG HUG" D is looking at a picture of a dog and a girl hugging.
 "DOG NIGHTY" D sees picture of dog sleeping.
 "DOG EAT" D sees picture of dog eating.
 "HORSE GO" D puts toy horse on the bike.
 "MOMMY OPEN" A can't open a box. D takes it from A and gives it to M.
 "MAN DO" D looks at a picture of a man on the cookie box.
 "GIRL SLEEP" 2X D puts doll on floor.
 "DOG EAT" D pretends that the toy dog is eating.
 SC: "GIRL PRETTY" D points to a picture of a girl.
 "DANIELLE RIBBON" D gets a ribbon and puts it in her hair. Followed by, "wear ribbon."
 "DOGGY COAT" D sees a picture of a dog wearing a coat.
 "BABY TOY" D sees a picture of a Mother giving a baby a toy.
 "DOGGY BATH" A asks, "What's this dog doing?"
 "BUNNY OUT" D sees picture of bunny escaping from a cage.
 "MAN HERE" 2X D brings over a toy man.
 "MONKEY HERE" 2X D points to the monkey on the cookie box.
 "MOMMY COOKIE" D holds out cookie for M to take.
 "STRING BOX" D looks at place on box where string had been attached.
 "MOMMY WAY" 2X D gives empty box to M to be thrown away.
 "BLOCK HERE" D puts block on the floor.
 "DOG CHAIR" D puts toy dog on a chair.
 "BOY BOAT" D puts toy boy in toy boat.
 "GIRL THERE" D puts girl on a chair.
 "DOG OUT" Dog falls off the chair.
 "DOG UP" D picks dog up and puts him on the table.
 "MOMMY ROOM" A asks, "Where is Mommy?" M was in living room.
 "ANDRYA TABLE" D points to small table for A to sit next to D.

DANIELLE

SESSION +3 CONTINUED

VC: "ROCK BALL" D puts ball on rocking chair and shakes it.
 "OPEN THIS" A brings over abacus, D tries to open it but can't.
 "HELP TOY" D tries to get toy off shelf but can't reach it.
 "SIT DOWN" D sits on chair.
 "GET BOX" D to M. D wants gum box as a treat.
 "WEAR RIBBON" D gets a ribbon and puts it to her head.

GROUP III:

SSV:

SSC:

VVC:

SVV:

SCC:

VCC: "SIT DOWN CHAIR" D puts a doll on a chair.

GROUP IV:

SSVV:

SSCC:

VVCC:

GROUP V:

SVC: "ANDRYA DO IT"
 "DOGGY DOES IT"
 "HORSE DOING IT"
 "COW DOING IT"
 "MOMMY DOES IT" 4X
 "DANIELLE SIT DOWN"

EXPLIC+ _____: "MOMMY HERE" D gives empty cookie box to M. She
 calls to M in kitchen.
 "BYE WEASLE" D pushes the Jack into his box.

Q+ _____:

NEG+ _____:

INDETERMINATE: "DOGGY HUGGY BOY" D sees a picture of a boy hugging a dog.
 "HUGGY GIRL" D sees a picture of a girl hugging a dog.
 "FOOT SHOE" D sees picture of bunny with shoe falling off
 his foot.
 "ALL GONE COOKIE" D looks at empty cookie box.
 "SLEEP GIRL" D puts girl in chair to lie down.

DANIELLE

SESSION +4

DUMMY+ _____ :

REDUPLICATED _____ :

EMPTY FORM+ _____ :

GROUP I:

SS: "A BOOT" D has a doll with only one boot. A asks, "Where is the other boot?" D takes the other boot from her pocketbook. Followed by, "Here."

"DANIELLE WATCH" D has a broken watch. A asks, "Whose watch is broken?"

VV:

CC: "DANIELLE PANTS" 3X A says, "Oh what pretty pants." D touches her pants.

"ANDRYA PANTS" D points to A's pants.

"KITTEN BOOK" 2X D gets a book and brings it to A.

"GIRL KITTEN" D points to a cat dressed in a skirt.

"DIRTY MITTENS" A is reading D a book and says, "The kittens got their mittens dirty."

"DIAPER ON" (I) M diapers D and says, "Your diaper is on."

"SOCKS OFF" D pulls her socks off.

"PIGGY BOOK" D gets book from shelf and brings it to A.

"THIS BOOK" 2X D gives A a book to read. A had asked, "Which book do you want to read?"

"CHAIR AGAIN" (I) A asks, "Do you want to sit on the chair again?"

"DANIELLE POCKETBOOK" 2X D gets a pocketbook. A asks, "Whose is it?"

"FLOWER TOO" D is pulling things from her bag and finds a flower.

"NEW POCKETBOOK" D is holding her pocketbook.

"MORE AGAIN" 20X D asks for repetition of many things.

"BLOCKS NOW" 2X D gets blocks from shelf.

"DANIELLE BLOCKS" While D is building with blocks.

"BIG HOUSE" D is watching A building with the blocks.

"MORE HOUSE" 7X D knocks down a house that A built.

"MORE THIS" D gives A another block.

"MORE BLOCKS" 10X D gets more blocks.

"MORE TOP" D puts a block on top of the block tower.

"COVER ON" 3X D puts the cover on the block box.

"OUT THERE" D takes toy phone from toy bin.

"HORSE OUT" D pushes a toy horse out of her way of building with blocks.

"MOM PHONE" A asks D, "Whose phone is that?" A refers to toy phone.

"DADDY PHONE" A asks, "Whose phone is this?" A refers to real phone.

"DANIELLE PHONE" 2X A asks, "Whose phone, now?" A refers to toy phone.

"GRANDMA PHONE" A asks, "Whose phone?" A refers to toy phone.

"BLOCKS AWAY" (I) D puts blocks away after A says, "Put the blocks away."

"COVER NOW" D puts cover on box.

"ALL GONE" D puts block box into toy bin.

DANIELLE

SESSION +4 CONTINUED

"ALL GONE HERE" D puts block box into the toy bin.
 "HEAVY NOW" D tries to pick up box.
 "IKKY HERE" D points to a sore on her lip.
 "PUZZLE NOW" D gets puzzles.
 "DANIELLE PUZZLE" A asks, "Do you want my puzzle?" D answers.
 "DOG PUZZLE" A holds up a puzzle piece and asks, "What is this?"
 "SHEEP TOO" D gives A a sheep puzzle piece.
 "BIRD PUZZLE" A holds up puzzle piece. A asks, "What puzzle is this?"
 "BABY DIAPERS" 15X D points to box of Pampers.
 "TWO BABY" 4X D points to dolls.
 "MORE DIAPERS" D points to other box of diapers.
 "EMPTY CAN" D points to an empty can on the kitchen floor.
 "OFF THIS" 2X D holds out doll and pulls on its clothes.
 "PANTY OFF" D gives A the doll that now has only panties on.
 "DIRTY SUIT" D throws doll's clothes into hamper.
 "BABY DOLL" 2X D rocks doll in her arms.
 "DIRTY DOLL" D runs to toilet with doll.
 "PANTS OFF" D pulls her pants off.
 "DIAPER OFF" D pulls her diaper off.
 "HOT SMOKE" D points to smoke from A's cigarette.
 "TEDDY BEAR" D is grabbing her vitamins that are shaped like bears.
 "PUZZLE AGAIN" D gets more puzzles.
 "PIGGY BOOK" 2X D goes toward the book shelf.
 "KITTEN BOOK"
 "LION BOOK" 6X D is scanning book shelf looking for par-
 "DANIELLE PIGGY BOOK" ticular books to bring to A.
 "TWO BOYS" D points to a picture of two boys.
 "MORE LIONS" 3X D is looking at pictures of lions.
 "MORE PENNY" 3X A gives D one penny. D holds her hand out.
 "THIS CAN" 2X D is holding a flower and points to a can on the desk.
 "MORE MONEY" 5X A had given D several pennies. D holds out hand.
 "TEDDY BEAR BOOK" 3X D finds the bear book and brings it to A.
 "THIS CHAIR" 2X A asks, "Where do you want to sit?" D points.
 "THIS DUCK" A asks, "How many ducks are there?" A is pointing to
 a picture of ducks swimming.

GROUP II:

SV: "KITTEN CRY" D sees a picture of a cat crying.
 "PHONE STUCK" D tugs on phone in a toy bin.
 "ANDRYA DO" D gives A a puzzle piece.
 "MAN FIT" D puts puzzle piece in.
 "BABY SLEEPING" D sees picture of a baby sleeping.
 "BABY BROKE" 2X D pulls doll's arm off.
 "CLOCK RING" A winds up alarm clock and it rings.
 "CLOCK BROKE" 3X When clock runs out and stops ringing.
 "FINGER HURT" 2X D sits on her hand.
 "CLOCK FIX" After A rewinds the clock and it begins ringing again.
 "LION ROAR" D sees a picture of a lion.

DANIELLE

SESSION +4 CONTINUED

SC: "KITTEN FLOWER" 2X D sees picture of a cat holding a flower.
 "MITTENS FLOOR" D sees a picture of mittens on the floor.
 "REST HERE" D finishes the puzzle by putting the rest of the pieces in.
 "PUPPET IN" A asks, "What's inside your pocketbook?"
 "CAN HERE" 3X D and A are looking for the flower can. D points to it.
 "PUPPET POCKETBOOK" D finds the puppet in her pocketbook.
 "MOMMY BACK" D hears the front door open.
 "ANDRYA RING" D gives A the alarm clock to wind.
 "HERE BLOCKS" D gives A some blocks.
 "THREE HERE" 2X A points to the number 'one' painted on a block. A asks, "What's here?"
 "O HERE" A points to the letter O on a block. A asks, "What's here?"
 "P HERE" A points to the letter P on a block. A asks, "What's here?"
 "GRANDMA HOUSE" A asks, "Where is grandma?" (Grandma was in D's house.)
 "STAR HERE" D points to a picture on the wall.
 "HORSE HAT" (I) D has a puzzle piece of a horse wearing a hat. A says, "The horse wears a hat."
 "PIG OUT" D sees the pig puzzle piece on the floor.
 "CHICKEN IN" D sees the chicken puzzle piece in the puzzle frame.
 "HORSE IN" D sees the horse puzzle piece in the frame.
 "ANDRYA PIG" D gives A the puzzle piece of a pig.
 "COW IN" D sees that the cow puzzle piece is in.
 "GOAT IN" After D put the goat puzzle piece into the frame.
 "FISH HERE" D picks up a puzzle piece.
 "BABY HERE" 2X D points to a doll.
 "MOMMY HOME" M enters D's room.
 "IT OFF" (I) A is pulling on doll's suit and says, "It won't come off."
 "DOLL HERE" The doll is on the floor, D points to it.
 "BABY OFF" The doll had been on the potty and fell off.
 "BABY TOILET" The doll fell off the potty. Followed by, "Come" and then, "Off."
 "ANDRYA UP" D holds up her arms to be picked up.
 "CLOCK NUTTY" (I) A says, "The clock is going nutty."
 "PIG MUSIC" D sees picture of a pig playing a violin.
 "COW THERE" (I) D points to a cow. A says, "It's a cow there."
 "BOY HERE" D picks up boy doll. A asks, "Where is the boy doll?"
 "GIRL HERE" D throws girl doll. A asks, "Where is the girl doll?"
 "PIGGY HERE" 3X A asks, "Where is the pig?"
 "DANIELLE MONEY" D is holding A's money.
 "PENNY DOWN" As a penny falls down.
 "PIGGY OINK OINK" 2X D to A.
 "LION DOWN" 3X Lion book falls on the floor.
 "SEALS WATER" D sees picture of seals in the water.
 "FISH HERE" (I) A points to picture of a fish and says, "The fish swims here."
 "LION DOWN" D sees toy lion on the floor.
 VC: "SIT CHAIR" 2X D to A when A starts to read.

DANIELLE

SESSION +4 CONTINUED

"JUMP ROPE" 2X A asks, "What does the kitten do?" A and D are reading a book.
 "WASH MITTENS" D sees picture of cats washing their mittens.
 "RIDE HORSE" 2X D goes over to her horse.
 "THROW BLOCKS" As D is throwing blocks.
 "BUILD MORE" 2X D to A after D throws the block tower down.
 "KNOCK DOWN" D throws the block tower down.
 "FELL DOWN" As block tower fell.
 "PULL THIS" D is pulling on a toy.
 "WASH BABY" D brings M the doll's clothes.
 "WIND CLOCK" 4X After alarm clock stops ringing.
 "OPEN MONEY" 2X D tries to open the bank.

GROUP III:

SSV:

SSC: "BABY DIAPERS OFF" D is trying to get doll's clothes off.

"TEDDY BEAR HERE" D points to bear on the bed.

VVC: "HELP DO IT" D can't get doll's clothes off.

SVV:

SCC: "DIAPERS IN POCKETBOOK" D puts diapers into her pocketbook.

"DANIELLE BIG POTTY" M asks, "Which potty do you want?"

VCC:

GROUP IV:

SSVV:

SSCC:

VVCC:

GROUP V:

SVC: "DANIELLE FIX IT"
 "DANIELLE BUILD MORE AGAIN"
 "ANDRYA DOES IT"
 "DANIELLE DOES IT"
 "FISH DOES IT"
 "BIRDS DO IT"
 "ANDRYA TAKE OFF"
 "MOMMY DO IT" 3X
 "MOMMY GO AWAY"
 "ANDRYA DO IT"
 "HERE IT IS"
 "PIGGY DANCING FLOWER"
 "PIGGY GO OINK OINK"

DANIELLE

SESSION +4 CONTINUED

EXPLIC+ _____ : "OH BABIES" D is looking at a picture of babies.
 "MOMMY HERE" D runs to M with a diaper.
 "MOMMY DOODY" D to M while running into bathroom.
 "ANDRYA PINK" D wants A to give her a pink vitamin.

Q+ _____ :

NEG+ _____ : "NOT FLOOR TODAY" (I) A says, "Not on the floor
 today."
 "NO BICYCLE" After D rides on her bike for a while.

INDETERMINATE: "CAN FLOWER" 2X D wants flower put into the can.
 "HEAD TURN" D wants A to turn the head of a puzzle piece
 around. She is turning the puzzle and can't get it
 in.
 "BACK BIRDS" D puts the bird puzzle back on the shelf.
 "PIGGY MORE" D is holding out bank for A to give her
 more pennies.
 "UP TREES MONKEY" D sees a picture of monkeys in a tree.
 "MORE ONE" D wants more pennies.
 "TURN IT BOX" D is trying to turn the toy box.
 "DO IT DOLL" D wants A to take the clothes off the doll.

DANIELLE

SESSION +5

DUMMY+ _____ :

REDUPLICATED _____ :

EMPTY FORM+ _____ :

GROUP I:

SS: "TWO GIRLS" M asks D, "What's left outside?" M is referring to the dolls that were outside of the doll house.

VV:

CC: "ONE FOOT" A is putting on D's shoe and says, "Give me a foot."
 "EMPTY BAG" D is holding an empty candy bag.
 "THIS PIECE" D points to a particular piece of candy that she wants.
 "THIS BOX" D walks to toy bin and takes out a box of toys.
 "GOOD CANDY" As D eats a piece of candy.
 "OTHER ROOM" 2X A asks, "Where's M?"
 "WHITE FLOWER" D is holding a flower.
 "BABY BOTTLE" D reaches for doll's bottle.
 "UP BABY" 2X D picks up doll from the floor.
 "OUT BABY" D takes doll from the box.
 "BOTTLE OFF" D takes bottle from doll.
 "APPLE JUICE" A asks, "Does the doll want water or apple juice?"
 "ALL FINISHED" As doll finishes the bottle.
 "NOW IN" D puts the doll in its case.
 "BLUE BEADS" D points to colored beads.
 "ORANGE BEADS" D points to colored beads.
 "DANIELLE PIGGY" D gets her pig book.
 "BUNNY BOOK" D gets the bunny book.
 "THIS CHAIR" D climbs onto chair next to A.
 "RABBIT BUNNY" D points to picture of a bunny.
 "APPLE JUICE TOO" D is feeding the doll. A asks, "What kind of food is she going to eat?"
 "BUNNY KITTEN" 3X D points to a picture of a rabbit and a kitten.
 "PIGGY BOOK" 2X D brings book to A.
 "THIS BOOK" A asks, "Which book do you want to read?"
 "NEXT PAGE" D turns the page of the book.
 "ALMOST FINISHED" (I) A says, "The tape's almost finished."
 "AMY DRESS" A finds a dress on a chair and asks, "Whose dress is this?"
 "APPLE JUICE" D holds out bottle to be filled.
 "MORE BABY" D is pretending to get more juice for the doll.
 "IN THERE" 3X D sees two bottles in a bag and points.
 "MONSTER BOOK" D gets the cookie monster book.
 "COOKIE MONSTER BOOK" D gets the cookie monster book.
 "KITTEN BOOK" 2X D hands the cat book to A.
 "NEW BOOK" D gets another book from the shelf.
 "TWO COOKIE MONSTER" D sees a picture of two cookie monsters.
 "RED SHOE" D sees a picture of a dog in red shoes.

DANIELLE

SESSION +5 CONTINUED

"ALL FINISHED" D closes the book.
 "CAT BOOK" D gets the wild animal book.
 "THIS WAY" (I) A says, "Put it in this way." A refers to puzzle piece.
 "RAIN HAT" D grabs a rain hat from M.
 "IN THERE" 14X D puts various things into the doll house.
 "MORE DESK" D gets another toy desk from the doll house.
 "NICE TABLE" 3X D takes out a large desk from the doll house.
 "IN THERE TOO" D puts some chalk into the house.
 "ALL FINISHED" D puts everything into the house.
 "OUT THERE" 2X D takes a toy from the toy bag.
 "IN HOUSE" D puts a doll into the doll house.
 "THIS TOO" D puts doll into the house.
 "OTHER ROOM" A asks, "Where's Mommy?"
 "INSIDE HERE" A asks, "Where's Mommy?" D runs into kitchen.
 "LIGHT ON" D reaches for the light switch.
 "HOUSE TOGETHER" D has put everything into the house.
 "INSIDE THIS" 3X D puts the doll house into the closet.

GROUP II:

SV: "WATER GONE" After D feeds bottle to doll.
 "IT FITS" D puts the slide into an opening in the doll house.
 "FLOWER BROKE" D is holding a broken flower.
 "IT BARK" D is looking at a picture of a dog barking.
 SC: "BUNNY NAUGHTY" 4X D sees picture of bunny eating farmer's lettuce.
 "THIS TELEPHONE" (I) A takes phone from toy bin and holds it up and says, "This is the phone."
 "DADDY HOSPITAL" A says, "You go to visit daddy. Where is he?"
 "DANIELLE PANTS" A asks, "Who is wearing pants?"
 "ANDRYA PANTS" A asks, "Who else is wearing pants?"
 "DANIELLE BABY" D reaches for A's doll.
 "DOLL DOWN" A's doll falls onto the floor.
 "BABY BROKE" The doll's swing is broken.
 "BABY BOTTLE" D feeds the doll.
 "BUNNY IKKY" D sees a picture of a rabbit in the water.
 "HERE BUNNY" D gets the bunny doll and brings it to A.
 "BABY HERE" (I) A points to a doll in a book. A says, "The baby doll is here."
 "MOMMY CANDY" 2X D finishes her candy and asks M for more.
 "BOTTLE FLOOR" A asks, "What's on the floor?"
 "BOTTLE GARBAGE" A asks, "What's in the garbage?"
 "FOOT GARBAGE" D puts her foot into the garbage pail. A asks, "What's in the garbage now?"
 "DOGGY OUT" D sees a picture of a dog come out of a dog house.
 "BOTTLE IN" D is looking for the bottle and sees it in the garbage.
 "DESK INSIDE" A asks, "Where is the desk?"
 "CHAIK IN" 2X D sees the chalk in the doll house. A asks, "Where is the chalk?"

DANIELLE

SESSION +5 CONTINUED

VC: "HOLD IT" 5X D reaches for candy bag.
 "PLAY BOX" D goes to toy bins.
 "HELP THIS" D is trying to get a toy bin and can't pick it up.
 "BRUSH TEETH" A asks, "Where's Mommy?"
 "GET BABY" D reaches for a doll. It is out of her reach.
 "SWING HIGH" D pushes doll in swing.
 "FIX IT" D to A when doll's swing breaks.
 "OPEN THIS" D can't open the doll's case.
 "EAT DINNER" 2X A asks, "What are the bunnies doing?"
 "EAT FOOD" D sees bunnies eating.
 "CRY TEAR" 3X D sees picture of bunnies crying.
 "READ IT" 2X D hands A a book.
 "OPEN IT" 2X D gives A a box.
 "TURN ROUND" D tries to turn a chair around.
 "BROKE HERE" D points to a break in the stem of the flower.
 "WASH MITTENS" D sees a picture of cats washing their mittens.
 "GIVE MOMMY" D runs to M with the rain hat.
 "PLAY NOW" D turns to the doll house.
 "CLAP HANDS" D tries to make the dolls clap their hands.

GROUP III:

SSV: "COOKIE MONSTER PLAY" D sees a picture of the cookie monster playing.

SSC: "COOKIE MONSTER CIRCLES" Sees a picture of a cookie monster eating circles.

"THIS PIECE OUT" D had taken a flower from the garbage and was

"THIS FLOWER OUT" holding it.

"COOKIE MONSTER UP" D sees the cookie monster in an airplane.

"MORE FOOT GARBAGE" D puts both feet in the garbage.

"DANIELLE CHALK INSIDE" D sees the chalk in the doll house.

VVC:

SVV:

SCC:

"BABY OUT SWING" D takes the doll from the swing.

"BABY ALL FINISHED" D takes the bottle from the doll.

"THAT GREEN ONE" D points to green beads.

"THAT WHITE ONE" D points to yellow beads.

"GARBAGE IN THERE" 2X D points to garbage pail.

"COOKIES IN THERE" D points to a bag.

"CHOCOLATE IN THERE"

"BOTTLE IN THERE" D points to garbage. Is pretending.

"THIS IN THERE"

"FLOWER IN THERE"

"DANIELLE DOGGY BOOK" D brings A's book to A to read.

"MOMMY BEADS OUT" D is taking beads from a box. Followed by,

"Mommy take beads out."

"THIS TEACHER DESK" D gets the large toy desk.

"CHALK IN THERE" D points to the chalk in the doll house.

DANIELLE SESSION +5 CONTINUED

VCC: "OPEN THIS DOOR" D opens the doll's case.
 "SIT DOWN CHAIR" D grabs a chair.
 "TUCK IT IN" D is wearing a rain hat with the strings hanging.
 "GET HOUSE IN THERE" D points to closet where M keeps the doll house.

GROUP IV:

SSV: "IKKY NOSE HERE TOO" D points to her runny nose.
 SSCC: "THE SUN OUT SIDE" 2X D looks out window.
 "DANIELLE BOTTLE IN THERE" D puts her bottle into the box.
 VVCC:

GROUP V:

SVC: "MOMMY PUT IT ON"
 "SUSAN MADE IT"
 "SUSAN MADE THAT ONE"
 "BALLOON NEED NOTHER ONE HERE"
 "MOMMY GETTING DRESSED" (I)
 "MOMMY FIX IT"
 "DANIELLE PLAY DOLL" 2X
 "DOLL SIT DOWN"
 "DANIELLE OPEN THIS DOOR"
 "BABY SWING HIGH"
 "BABY ALL FINISHED BOTTLE"
 "BOTTLE FALL DOWN"
 "HAT FALL DOWN"
 "HAT FALL DOWN TOO"
 "MOMMY GO TO BANK"
 "BUNNY EAT IT"
 "BUNNY EAT DINNER" 2X
 "DANIELLE SIT DOWN CHAIR"
 "DANIELLE HOLD CLOWN" 2X
 "ANDRYA TURN ARM HERE"
 "DANIELLE HURT SELF AGAIN"
 "ANDRYA KISS AGAIN"
 "GARBAGE FALL DOWN"
 "ANDRYA PICK IT UP"
 "ANDRYA PICK UP GARBAGE"
 "COOKIE MONSTERS PLAY TOYS"
 "ANDRYA PUT BACK"
 "ANDRYA PUT BACK TOO"
 "DANIELLE GIVE IT MOMMY"
 "DANIELLE GET HOUSE IN THERE"
 "ANDRYA FIND HOUSE"
 "ANDRYA DO THIS"
 "ANDRYA DOES IT"

DANIELLE

SESSION +5 CONTINUED

"DANIELLE BOTTLE FIT THERE"
 "SLIDE FITS IN HOUSE"
 "DANIELLE RING BELL"
 "DANIELLE RING BELL TOO"
 "DANIELLE PUT HOUSE TOGETHER"
 "DANIELLE CLOSE IT"
 "DANIELLE RING BELL"
 "DANIELLE RING IT AGAIN"

EXPLIC+ _____ : "NIGHT BABY" 4X D lies a doll on the floor and pretends it is sleeping.
 "MOMMY MORE" 2X D calls to M who is in kitchen, then she runs into kitchen with her empty cup.

Q+ _____ :

NEG+ _____ : "NO THIS" A starts to close D's pants.
 "NO CLOSE DOOR" A begins to close the door.
 "NO MORE WATER" D finishes feeding a bottle to the doll.
 "NO HAT" 2X A begins to put the doll's hat on.

INDETERMINATE: "OUT FLOWER" D points to a flower in a can.
 "BROKEN THIS" D points to the broken stem of the flower.
 "CLOSE EYES BABY" D turns doll over to close its eyes.
 "BABY BROKEN SWING" 2X When the doll's swing breaks.
 "AWAY APPLY JUICE" Gives apple juice to A after finishes.
 "BUNNY BOOK READ IT" D brings over bunny book.
 "DOWN FOOT" D tries to get off the chair.
 "TUCK IT IN HAT" Refers to string tie of a hat.
 "MOMMY HOUSE IS" A says, "Go ask Mommy where the house is."
 "BROKE THIS" D points to the broken part of a box.
 "IN DOOR THIS" D tries to put slide in doll house.
 "IN THERE BOTTLE" D puts bottle in doll house.

APPENDIX V

SYNTACTIC CORPORA: GREG

SYMBOLS

G = Greg

M = Mother

A = Examiner

(I) = Imitation

_X = # times produced

GREG

SESSION 0

DUMMY+ _____ : "a a DUCK" G is holding a duck and A asks, "What is that?"

REDUPLICATED _____ :

EMPTY FORM+ _____ :

GROUP I:

SS:

VV:

CC: "THIS ONE" A asks, "Which one do you want?" G points to a doll.

GROUP II:

SV:

SC:

VC:

GROUP III:

SSV:

SSC:

VVC:

SVV:

SCC:

VCC:

GROUP IV:

SSVV:

SSCC:

VVCC:

GROUP V:

SVC:

EXPLIC+ _____ :

Q+ _____ :

NEG+ _____ :

INDETERMINATE:

GREG

SESSION +1

DUMMY+ _____ : "a GET" The door bell rings and G runs to the door.

REDUPLICATED _____ :

EMPTY FORM+ _____ :

GROUP I:

SS:

VV: "WANNA GO" M is going to the store and G is watching her put on her coat.

CC:

GROUP II:

SV:

SC: "HERE GREGIE" G is hiding in the corner. A asks, "Where's Greg?"

VC: "HELP ME" G is trying to lift up a toy bear.

GROUP III:

SSV:

SSC:

VVC:

SVV:

SCC:

VCC:

GROUP IV:

SSVV:

SSCC:

VVCC:

GROUP V:

SVC:

EXPLIC+ _____ :

Q+ _____ :

NEG+ _____ :

INDETERMINATE:

GREG

SESSION +2

DUMMY+ _____: "a DO" 15X Used many times whenever he wanted to do something specific. Usually accompanied by pointing at desired object.

REDUPLICATED _____: "UP UP UP" G to A after he walked over to the rocking horse.

EMPTY FORM+ _____:

GROUP I:

SS:

VV:

CC: "ALL GONE" G turns empty cookie bag over.

"THIS ONE" A asks, "Which one do you want?" G gets a book.

"MORE TRUCK" A asks, "Do we have more cars?"

GROUP II:

SV:

SC: "CHAIR IN" A puts the doll house chair into the box. A asks, "Where is the chair?"

VC: "SIT DOWN" 5X Says this every time he begins to sit down.

"SIT DOWN" (I) A says, "Sit down."

"FALL DOWN" As the horse falls over.

"PULL BUS" G grabs the toy bus on a string.

GROUP III:

SSV:

SSC:

VVC:

SVV:

SCC:

VCC:

GROUP IV:

SSVV:

SSCC:

VVCC:

GROUP V:

SVC:

GREG

SESSION +2 CONTINUED

EXPLIC+ _____:

Q+ _____:

NEG+ _____:

INDETERMINATE:

GREG

SESSION +3

DUMMY+ _____ : "a DO" 2X G takes a hat and puts it on.
 "a DONE" G gets off the horse.
 "a DOWN" G falls off the horse.
 "a GET" As a ball rolls away.
 "I LOCK" As G closes the barn door.

REDUPLICATED: _____ : "MOMMY MOMMY" 6X A mother doll fell out of the
 toy boat.
 "OPEN OPEN OPEN" G hands A a truck, the doors
 of which can be opened.
 "MOM MOM MOM" G runs to door after A asks,
 "Who is at the door?"

EMPTY FORM+ _____ :

GROUP I:

SS:

VV:

CC: "THIS ONE" 12X At various times while pointing at things.

"ALL IN" G had put a toy dog in the toy corral.

"IN THERE" G points to barn after A asks, "Where is the cow?"

 GROUP II:

SV:

SC:

VC: "HIT THAT" As G hits a ball with a bat.

"OPEN LOCK" G tries to get barn door open.

"GOT IT" As G hits a ball with a bat.

 GROUP III:

SSV:

SSC:

VVC:

SVV:

SCC:

VCC:

 GROUP IV:

SSVV:

SSCC:

VVCC:

 GROUP V:

SVC:

GREG

SESSION +3 CONTINUED

EXPLIC+ _____:

Q+ _____:

NEG+ _____: "NO DADDY" A asks, "Is the daddy doll inside the barn?"
"NO WATER" G is pushing a boat on the rug saying, "water." A says, "You're pretending it's water but it's really a rug."

INDETERMINATE:

GREG SESSION +4

DUMMY+ _____ : "a DO" A makes the toy cow walk funny. G grabs the
cow.
"a DONE" G stops putting gas into the toy car.
"a POOL" G puts a boy in a toy pool.

REDUPLICATED _____ : "MORE MORE" G finds another cow in the toy box.
"OUCH OUCH" G hits his hand on the toy slide.

EMPTY FORM+ _____ :

GROUP I:

SS:

VV:

CC: "THAT ONE" G points to another car for A to open.

"THIS ONE" 4X Pointed at various desired objects.

"NOW THIS ONE" 2X A had been crashing cars. G grabs another one.

GROUP II:

SV:

SC: "TRUCK GAS" A is putting gas in one truck but G holds out the tow
truck for gas.

VC: "OPEN IT" G is trying to get car hood opened.

"WANT COW" G looks at cow on the floor near A.

"OPEN SIDE" G holds out refrigerator toy to A.

"SIT DOWN" 2X When G sits down.

GROUP III:

SSV:

SSC:

VVC:

SVV:

SCC:

VCC:

GROUP IV:

SSVV:

S SCC:

VVCC:

GROUP V:

SVC:

GREG

SESSION +4 CONTINUED

EXPLIC+ _____: "UHOH CAR" G had put the toy car on the fish and it fell.

Q+ _____:

NEG+ _____: "NO OUT" A puts a doll in the bathtub. G takes
doll out.
"NO BLUE" G has a yellow block. A says, "It's
yellow."

INDETERMINATE:

GREG

SESSION +5

DUMMY+ _____: "I GO" A asks, "Do you want to play in the living room?" G gets up.
 "a GOT" 4X G hits a ball with a racket.
 "a DO" 3X G takes the shapes and shape box from A.
 "a POTTY" G runs to bathroom.
 "a DOWN" G gets off potty.
 "A BLOCK" G puts a doll on a block.
 "A THIS ONE" 2X G points to pictures.
 "A BALL" G throws a ball to A.
 "A MORE" G finishes shape box and starts to take out shapes to do it again.
 "A BUS" G knocks over the bus.
 "A DOGGIE" G holds stuffed dog.

REDUPLICATED _____: "CAR CAR" A is holding a bus and G grabs it.
 "BEEP BEEP" 4X G pushes a car on the floor.
 "DUCK DUCK" G sees a picture of a duck.

EMPTY FORM+ _____:

GROUP I:

SS: "JUICE CUP" G's juice falls. A asks, "What happened here?"
 VV:
 CC: "UP HIGH" 4X G pushes the toy swing hard.
 "THIS ONE" 6X When G points to various things.
 "THE GIRL" G has a boy doll.
 "IN SUBWAY" 5X G puts doll on toy train.
 "ALL DONE" G walks from bathroom.
 "NEW BOAT" G rebuilds a boat with blocks.
 "IN HOUSE" 3X G puts doll in toy house.
 "IN SCHOOL" A asks, "Where's Jory?"
 "IN BOAT" G puts doll in a boat.
 "ON TOP" 2X G puts doll on top of bus.
 "MORE JUICE" 2X G feeds dolls juice for a second time.
 "ALL RIGHT" A asks, "Want to play in there?" A points to play room.
 "TO RACKET" A says, "Here comes the ball." G holds up racket.
 "BLUE ONE" G points to a blue ball.
 "JUICE CUP" G walks into kitchen with cup.
 "ON THIS ONE" A asks, "Where did you put it?" A refers to doll.
 G points to a car.
 "MORE LION" 2X G points to another toy lion.
 "THIS ONE" 2X G points to pictures.

GROUP II:

SV: "THIS BROKE" When the tape breaks.
 SC: "THAT BOAT" A points to a picture of a boat and asks, "What is that?"

GREG

SESSION +5 CONTINUED

"DADDY OUT" When the father doll had fallen out of the swing.
 "THIS SEESAW" 3X G finds two spoons and uses them as a doll seesaw.
 "POOL MORE" G looks at the bottom of the pool and sees several more pictures.
 "THAT MINE" 2X Melony grabs G's racket.
 VC: "PUT IN" G puts a doll in the toy swing.
 "NEED BOY" G looks at A and then at the floor. G refers to boy doll.
 "WANT THIS" A has a ball, G holds out his hands.
 "PUSH IN" 2X As G puts shapes in the shape box.
 "PUSH 'EM" (I) A says, "You pushed 'em."
 "MOVE WAY" G to Melony.
 "HELP ME" G has blocks and turns to A.

GROUP III:

SSV: "THIS ONE MOVE" G pushes the toy car.
 SSC:
 VVC:
 SVV:
 SCC:
 VVC:

GROUP IV:

SSVV:
 SSCC:
 VVCC:

GROUP V:

SVC:

EXPLIC+ _____ : "OH UP" G picks up a girl doll.
 "BYE BYE SUBWAY" G pushes train.
 "BYE DADDY" G makes toy daddy go down the stairs.
 "UPSEE SEE SAW" G plays with a spoon pretending it is a seesaw.

Q+ _____ :

NEG+ _____ : "NO THIS ONE" 2X G gives A a doll.
 "NO MINE" 4X Melony holds one of G's balls and he wants it.
 "NO GIRL" A says, "It's a boy doll."

GREG

SESSION +5 CONTINUED

"NO SEESAW" A says, "It's not a seesaw, it's a spoon."
"NOT IT" G tries to put a shape in the box but it
doesn't fit.

INDETERMINATE:

GREG

SESSION +6

DUMMY+ _____ : " 1 FAST" A pushes the rocking horse and asks, "Is it going fast?" G answers, "Yeah" " FAST."
 " 2 THIS" While pushing the horse A made it hit the door. G points to the door.
 " 3 DOWN" A asks, "Where are your hands?" G's hands are behind his back.

REDUPLICATED _____ :

EMPTY FORM+ _____ :

GROUP I:

SS: "JORY MOMMY GREGGIE YOU" Said while galloping on horse and followed by, "ride."
 "THIS ONE" G points to a boy doll in a car. Followed by, "Go."
 "THIS BOY" G gives the boy doll ice cream. Followed by, "eat" and "ice cream."
 "NEW ONE" A has a car and asks, "Does this car go for a ride?"
 G picks up another car and pushes it along the floor.

VV:

CC: "ON SHIRT" (I) A asks, "Is it on your shirt?" A refers to ice cream.
 "MORE PENNY" (I) A says, "Here's one more penny."
 "HER MEDICINE" 2X G points to Jory's medicine.
 "IN THERE" G puts a penny in a box.
 "THIS PAPER" G takes some paper out of a box and holds it up after A had said, "Take the paper out."
 "MY KNEE" 2X G finds a penny on his knee.
 "TWO MONEY" G has two pennies.
 "UP SIDE" G puts paper on the bed.
 "OTHER WAY" G tries to put a shape into the shape box but it does not fit there. He turns the box over.
 "IN THERE" G puts A's finger in the box.
 "MORE JUICE IN THERE" G looks in the cup and sees more juice.
 "ALL GONE" G drinks all the juice.
 "OLD ONE" (I) A says, "Band aid. Old one." G had pointed to his band aid.
 "THE GARBAGE" (I) A asks, "Do you know where the garbage is?"
 "MY BROOM" G picks up a toy broom and sweeps.
 "IN BOWL" 2X G pretends to put ice cream in a bowl.
 "OUT TRUCK" G takes the daddy doll from the truck.
 "COAT HAT" G is holding the daddy doll who is wearing a coat and hat.
 "BLUE ICE CREAM" 2X A asks, "What kind of ice cream?"
 "CHAIR DADDY" G has the daddy doll and has put each doll in a chair.
 G is looking for a chair for the doll.
 "ALL GONE" G finishes feeding the dolls ice cream.
 "MORE ICE CREAM" G begins feeding ice cream to the dolls again.
 "ON TRUCK" G puts daddy doll on the toy truck.
 "THIS OUT" G takes a piece of dirt from the car.

GREG

SESSION +6 CONTINUED

"UP TOP" G puts the toy chicken on top of the truck.
 "BABY HORSE" G finds a small toy horse in toy barrel.
 "ON TRUCK" A asks, "Where is the big horse?"
 "IN THERE" A asks, "Where's the pool?" G points to toy house.
 "MORE MONSTER" G and A are reading a book about monsters.
 "OFF THIS" As G takes the stacking rings off the ring stack.
 "ARM ON" G puts the doll's arm on.
 "ONE PIECE" (I) A says, "There's one more piece," and points.
 "THE TOP" G puts the top stack on.
 "A NEW ONE" 2X G points to his melted ice cream sandwich. G to M.
 "NEW ONE" G holds the melted ice cream out to M.
 "ICE CREAM SANDWICH" G has the box from the ice cream sandwiches.

GROUP II:

SV: "IT FALL" As a toy horse falls over.
 "MOMMY RIDE" G puts the mother doll on the toy horse.
 "DAMMA RIDE" G puts the grandmother doll on the toy horse.
 "DADDY MOVE" The father doll is in the truck.
 "MAN FLY" G throws a man doll.
 "IT CRUMBLE" G refers to his ice cream sandwich.
 SC: "MONEY THERE" G looks for the pennies and finds them in a box.
 A asks, "Where is the money?"
 "THAT MIRROR" G turns to mirror on the wall.
 "THAT BATH" A is holding a toy bathtub.
 "DADDY ICE CREAM" G feeds ice cream to father doll. Followed by,
 "eat."
 "THIS DADDY" G picks up a toy father.
 "CAR UNDER" G sees the car under the block bridge. A asks, "Where
 is the car?"
 "CAR WHEE" A asks, "What went whee?"
 "THIS COW" G has a toy cow. A asks, "Is this a horse?"
 VC: "FELL OUT" Money fell out of the box.
 "SIT ON" G points to a picture lying on a box.
 "LAY DOWN" G lies a horse on his side.
 "DROP IT" G drops a toy chair.
 "DRINK IT" After G finished his juice.
 "THROW WAY" G goes to garbage with a piece of dirt found on the floor.
 "WANT PEOPLE" G points to toy shelf where toy people are.
 "DUMP IT" G turns over the box of toy people.
 "OPEN THIS" G holds out toy refrigerator.
 "TAKE ICE CREAM" 2X G pretends to take something from toy refrigerator.
 "PUT IN" G pretends that he is putting ice cream in a bowl.
 "GET MORE" 2X G reaches into toy refrigerator.
 "WANT CHICKEN" 2X G grabs the toy chicken.
 "MOVE DADDY" G pushes father aside.
 "PRETEND HAMMER" G holds a stick.
 "READ IT" G gives a book to A.

GREG

SESSION +6 CONTINUED

"RIDE BIKE" A says, "What are the monsters doing?"
 "EATING TREES" G points to picture of monsters eating trees.
 "PLAY THIS" G brings a lotto game to A.

GROUP III:

SSV:

SSC: "THIS CAR WHEE" G pushes a car on the floor.

VVC:

SVV:

SCC: "FINGER IN THERE" G had put A's finger into a box.

"THIS PINK ONE" G is holding a pink cup.

"THIS BLUE ONE" G is holding a pink cup.

"THIS ALL GONE" G looks into his empty cup.

"ICE CREAM IN THIS" G points to real refrigerator.

"SPOONS IN THERE" G points to real sink.

"THEY UP THERE" A asks, "Do you see the birds?"

VCC: "GIVE ME PENNY" 2X A is holding pennies.

"GIVE ME SOME PENNY" A has pennies.

"PUT IN THERE" G puts a horse into a toy box.

"WANT APPLE JUICE" G to M.

"TAKE OUT ICE CREAM" G opens toy refrigerator.

"NAIL IN HAMMER" G is banging in toy nails with a toy hammer.

"THROW IT THERE" G refers to A's fish necklace.

"RIDE IN WATER" G puts toy fish in the water.

"SWIM IN POOL" 2X G puts a fish into the toy pool.

"READ THIS ONE" 3X G reaches for another book.

"PUT ON PIECE" As G puts a stack piece on.

GROUP IV:

SSVV:

SSCC: "THIS FISH ON THIS" G puts a toy fish inside the frisbee and pretends it is a pool.

VVCC:

GROUP V:

SVC: "MAN RIDE IT"

"MAN RIDE HORSE"

"DADDY RIDE HORSE"

"DADDY BUY MORE"

EXPLIC+ _____ : "OH DEAR" A piece of paper falls off the bed.
 "OH MOMMY" 3X Half cry. G looks for M.
 "MOMMY YUKKY" G to M while G was eating a melted
 ice cream sandwich.

GREG

SESSION +6 CONTINUED

Q+ _____:

NEG+ _____: "NO BOY" A asks, "Is daddy going to eat the ice
cream?"
"NO COW" A calls a toy a horse but G insists that
it is a cow.
"NO SEE IT" A says, "Get the pool." G looks around.

INDETERMINATE:

GREG

SESSION +7

DUMMY+ _____ : "a TOP" G is putting rings on a stack.
 "a THAT" G points to a doll which he can't reach.

REDUPLICATED _____ :

EMPTY FORM+ _____ :

GROUP I:

SS: "THAT ONE" M asks, "Do you know which one is the road runner?"
 VV: "GOING TO CUT" G has cheese and a knife in front of him.
 CC: "APPLE JUICE" 2X M asks, "What kind of juice do you want?"
 "GRAPE JUICE" 2X G calls to M who is in the kitchen.
 "PAPER CUP" M asks, "Do you want elephant or paper cup?"
 "SOCKS ON" M asks, "Do you want your socks on or off?"
 "ON THE BED" M asks, "How did you hurt yourself?"
 "ON KNEE" M asks, "Where should I kiss it?"
 "ANOTHER ONE" G gets another block.
 "BLUE ELEPHANT" G is looking at a picture of an elephant.
 "A BALL" 6X G sees a ball and runs for it.
 "OUT THERE" G tries to pop up the tape.
 "GUINEA PIG" M asks, "What could Daddy bring in a cage?"
 "TWO IN THIS" G points to two balls in a box.
 "ON WALL" A asks, "Where should I hang this picture?"
 "TWO BIG ONE" 2X G points to two pieces of cheese near him.
 "MORE JUICE CHEESE" 4X G to M after he finished his juice and cheese.

GROUP II:

SV: "YOU CATCH" G pushes a car to M.
 "BURT SWEEPING" G is looking at a picture of Burt sweeping the floor.
 "HER CRYING" M is reading G a story and asks, "Is Lotta in trouble?"
 SC: "THAT MINE" G points to his bed.
 "THAT RECORDER" G points to tape recorder.
 "THAT ELEPHANT" G points to toy elephant.
 "THAT PIG" 3X G points to a picture of a pig on his sheet.
 "THAT MINE" G points to tape recorder.
 "THAT MINE" G grabs book from A.
 VC: "WANT JUICE" 2X G to M.
 "PUT DOWN" A is looking at the big calendar.
 "HURT MYSELF" G walks into the corner of the bed and the wall:
 gets his foot stuck.
 "FOUND IT" G gets another block.
 "SEE FISH" M asks, "What do you want to see?"
 "LOOK IT" 2X G is looking at the guinea pig.
 "WANT CHEESE" G to M.
 "EATING CHEESE" 5X G to daddy. G is eating cheese.
 "SHOW PICTURE" G is playing with toy movie projector.

GREG

SESSION +7 CONTINUED

"HAMMERING NAIL" 5X G is hammering in a nail.

"MOVE AWAY" M is reading a story and asks, "What's Lotta going to do?"

GROUP III:

SSV:

SSC: "THIS STRAW OUT" G is holding a straw with the paper cover on it.

VVC: "WANT SEE THAT" 3X G pushes Jory away from the guinea pig's cage.

SVV:

SCC: "ICE CREAM ON HAT" G looks at a picture of Ernie wearing a party hat.

"THAT MINE HERE" G points to cheese on the table.

VCC: "SIT ON LAP" G sits on A's lap. A asks, "What did you do?"

"SIT DOWN LAP" G sat on M's lap. M asks, "What did you do?"

"TAKE THIS DOWN" G is pulling on the big calendar.

"PUT IT DOWN" M is looking at calendar and G grabs it.

"WIPE MY LEG" G spilled juice on his leg.

"TAKE IT OUT" 2X G to Daddy referring to guinea pig.

"OPEN IT UP" 2X G takes the paper off the cheese.

"OPEN THE DOOR" G tries to get the door opened but can't.

GROUP IV:

SSVV:

SSCC: "THAT HAT ON ERNIE" G points to a picture of Ernie in a book.
Ernie is wearing a party hat.

VVCC:

GROUP V:

SVC: "YOU TAKE OFF"

"ME SLEEP ON BED"

"ME FOUND IT"

"ELEPHANT BE IN THERE"

"ELEPHANT TOUCHING ME"

"ME WIPING EYES"

"ME CARRY THIS"

"I HAVE THAT"

"YOU EATING CHEESE"

"I OPEN IT"

"ME OPEN CHEESE"

"DADDY DOING THIS"

"DADDY SITTING HERE"

"ME LOCK THE DOOR"

"ME OPEN THE DOOR"

"MOMMY HOLD ME"

"LET ME SIT DOWN HERE"

"IT FALL DOWN"

GREG

SESSION +7 CONTINUED

"THE BABY FALL DOWN"
"YOUR STOP READING STORY"
"DADDY GOT SODA" 3X

EXPLIC+ _____ : "HI GUINEA" G to guinea pig.
"OH MINE" G points to the tape recorder.

Q+ _____ :

NEG+ _____ : "NO MOMMY" 3X M is putting G's clothing on.
"NO YOU" M says, "Ask Daddy for juice."
"NO MY BED" 3X M is putting a sheet with pictures on
Jory's bed. G cries angrily.
"NO MINE" 4X M says, "The recorder is A's."
"NO BLUE" M says, "I thought that toy was orange."

INDETERMINATE:

APPENDIX VI

SYNTACTIC CORPORA: DAVID S.

SYMBOLS

D = David S.

M = Mother

A = Examiner

(I) = Imitation

X = # times produced

DAVID S.

SESSION O

DUMMY+ _____ : "A DIDI" D takes out a broken wagon. M reports that "didi" is his word for broken.

REDUPLICATED _____ : "AMA AMA" D points at a fire truck. M reports that "ama" is his word for fire engine.

EMPTY FORM+ _____ :

GROUP I:

SS:

VV:

CC: "ALL DONE" 7X At various times on the completion of an activity.

"ICE CREAM" (I) M points to a picture of ice cream saying, "It's ice cream."

"DIDI WAGON" D has the broken wagon.

GROUP II:

SV:

SC:

VC:

GROUP III:

SSV:

SSC:

VVC:

SVV:

SCC:

VCC:

GROUP IV:

SSVV:

SSCC:

VVCC:

GROUP V:

SVC:

EXPLIC+ _____ : "HI GRANDMA" (I) D has a phone. M says, "Why don't you call grandma and say, 'Hi Grandma'?"

"UHOH DIDI" D has the broken wagon.

"UHOH DIDI" 2X D breaks the ring stack when it falls.

DAVID S.

SESSION O CONTINUED

Q+ _____: "WHERE IS IT" (I) 3X A says, "Find the dog. Where is
 it?"
 "WHERE IS SHE" (I) A says, "Where's M? Where is she?"

NEG+ _____:

INDETERMINATE:

DAVID S.

SESSION +1

DUMMY+ _____ : "a APPLE" A is holding an apple puzzle and says,
"What's this?"

REDUPLICATED _____ : "HIPPO HIPPO" (I) D has a hippo. A says,
"Hippo hippo."
"AMA AMA" D points out window to a fire engine.
"TICK TICK" A is holding a watch. M asks,
"What does it do?"

EMPTY FORM+ _____ : "rdi OPEN" D gives M an uncut apple and wants it
cut open.
"rdi MOMMY" F calls for M who is in the kitchen.
"rdi APPLE" F grabs the apple puzzle piece.
"rdi BANANA" D looks for the banana puzzle piece.
"rdi COOKIE" D to A. Then goes into kitchen and
reaches for a cookie.

GROUP I:

SS:

VV:

CC: "OVER THERE" 2X A asks, "Where are D's toys?" D points to toy chest.
"ALL DONE" 4X Upon completion of various tasks.
"MORE TOYS" D looks at the toys on the floor then goes to toy chest.
"JACK-IN-BOX" (I) M asks, "Where's your Jack-in-the-Box?"
"ME THIS" D reaches past A to a pile of toys.

GROUP II:

SV:

SC: "THIS COOKIE" A and D in kitchen. A points to the cookie bag say-
ing, "This?" "What is this?"

VC: "WANT THIS" (I) D pulls toy from bag. A asks, "Do you want this?"
"READ ME" 2X D points to a book.

GROUP III:

SSV:

SSC:

VVC:

SVV:

SCC:

VCC:

GROUP IV:

SSVV:

SSCC:

VVCC:

DAVID S.

SESSION +1 CONTINUED

GROUP V:
SVC:

EXPLIC+ _____:

Q+ _____: "WHERE IS IT" (I) 2X D is searching through toy chest. A asks, "Where is it?"

NEG+ _____:

INDETERMINATE:

DAVID S.

SESSION +2

DUMMY+ _____:

REDUPLICATED: _____: "BALL BALL" D grabs a ball.
 "TICK TICK TICK" D has the hickory dickory dock toy.

EMPTY FORM+ _____: "i di BOOK" D to M when all D's books surround
 them on the floor. M says, "We have all
 the books."

GROUP I:

SS:

VV:

CC: "IN THERE" 2X (I) A says, "It's in there." A refers to a stick in
 the toy chest.

"ALL GONE" 3X At various times when D is finished with an activity.

"IN IT" 3X D reaches for A's pocketbook. Had been looking for a doll.

"DAPPER DAN" 5X M takes the stuffed toy from D. D half crying reaches
 for it.

GROUP II:

SV:

SC: "THAT ELEPHANT" A holds up an elephant saying, "What's this one?"

VC: "SEE THAT" 2X D reaches for A's pocketbook.

"DO IT" D wants A to spin the top.

"GO OUT" D climbs into his carriage.

GROUP III:

SSV:

SSC:

VVC:

SVV:

SCC:

VCC:

GROUP IV:

SSVV:

SSCC:

VVCC:

GROUP V:

SVC:

DAVID S.

SESSION +2 CONTINUED

EXPLIC+ _____ : "HI TEDDY" 2X D had laid the teddy bear down then
picks him up.

Q+ _____ :

NEG+ _____ :

INDETERMINATE:

DAVID S.

SESSION +3

DUMMY+ _____ :

REDUPLICATED _____ : "SHOE SHOE" 3X After A had put D's shoe on.

EMPTY FORM+ _____ :

GROUP I:

SS:

VV:

CC: "ALL GONE" 2X At various times when was finished playing with a toy.

"EMPTY BOX" (I) A says, "It's an empty box."

"APPLE SAUCE" 2X D to M in request.

GROUP II:

SV:

SC: "THAT BOOT" D finds his boot under the dressing table and points to it.

VC: "OPEN IT" (I) A says, "You want to open it?" A refers to a box.

"OPEN THIS" (I) A says, "Open this?" After D gives A a box.

GROUP III:

SSV:

SSC:

VVC:

SVV:

SCC:

VCC:

GROUP IV:

SSVV:

SSCC:

VVCC:

GROUP V:

SVC:

EXPLIC+ _____ : "OH JUJU" D breaks a box. M reports that "juju" is his word for any catastrophe. Is used as a single word utterance with the same interpretation.

Q+ _____ : "WHERE IS HE" 3X A asks, "Where is daddy?"

DAVID S.

SESSION +3 CONTINUED

NEG+ _____:

INDETERMINATE

DAVID S.

SESSION +4

- DUMMY+ _____ : "A THIS" D accidentally hits the toy truck and it rolls.
 "a JUMP" D stands on top of the toy chest to jump off.
 "a SEE" D looks for another car.
 "a PEAR" D pretends to take a bite out of the puzzle pear.
 "I THIS" A asks, "What did you find in the bag?" D pulls out a wheel.
 "a TV" D puts a toy wheel on the TV.
 "a THIS" A asks, "Where does the wheel go?" D tries it on the truck.
 "I THIS" 3X D gives A several cars. Separate utterance for each car.
- REDUPLICATED _____ : "RAISIN RAISIN" D to M in request.
 "AMA AMA" D sees a picture of a tractor. Ama is his word for fire engine. M corrects him.
 "TOY TOY" 2X D holds a toy up to a neighbor's child who is in the house.
 "BOOK BOOK" D reaches for his book.
- EMPTY FORM+ _____ : "adi THIS" D holds a nail up to A.
 "adi SLIPPER" D tries to put his slipper into a box.

GROUP I:

SS:

VV: "LET SEE" D sits down in the middle of toys that A and M are cleaning up.

CC: "IN THERE" D reaches for a box and is holding a small toy car.
 "NEW CAR" (I) A says, "You have a new car."
 "SLIDING BOARD" 2X D runs to sliding board.
 "MORE PLEASE" D to M while holding out empty raisin box.
 "BROKEN WHEEL" (I) A says, "It's a broken wheel."
 "ALL GONE" D empties a box of toys then looks into empty box.
 "MORE INSIDE HERE" D looks through toy bag.
 "LITTLE YELLOW CAR" (I) A says, "Give me the little yellow car." D touches it.
 "BROKEN WHEEL" D finds another wheel that had broken off a car.
 "BROKEN ONE" 3X D has a broken car.
 "CUP OF WATER" (I) M says, "Say, cup of water."
 "WATER CUP" 2X D holds out an empty cup to M. Requesting more water.
 "MORE BOX" D puts another ring into the box.
 "MORE BOOM BOOM" As D goes into the bathroom.

GROUP II:

SV:

SC:

DAVID S.

SESSION +4 CONTINUED

VC: "OPEN THIS" 5X D has a toy bag.
 "EAT IT" 3X A asks, "Should I eat the apple?"
 "SIT DOWN" 5X D calls to M to sit on the floor near him.
 "OPEN IT" 4X After D had opened the toy bag.
 "CLOSE IT" (I) A asks, "Should I close it?"
 "PUT THAT" D puts a toy wheel on a TV knob.
 "PUT THIS" 2X D holds out two wheels to A.
 "OPEN IT" 6X D gives A a box.
 "SIT DOWN" D to A.
 "EAT IT" As D eats his raisins.

GROUP III:

SSV:
 SSC:
 VVC:
 SVV:
 SCC:
 VCC:

GROUP IV:

SSVV:
 SSCC:
 VVCC:

GROUP V:

SVC: "I LOVE MOMMY" 2X
 "I LOVE RAISIN" Routine with M. M says, "Who do you
 "I LOVE ANDRYA" 2X love? I love . . ."
 "I LOVE PAPA" 2X
 "I LOVE JILL"

EXPLIC+ _____: "HI MOMMY" M walks into the room.
 "OH WOW WHEE" 2X D finds a box of pictures.
 "OH JUJU" D takes apart the top and bottom of a
 box which then falls behind the sofa.

Q+ _____: "WHAT THIS" 5X D points to various things.
 "WHAT IT" (I) D has microphone and A asks, "What
 is it?"
 "WHERE IS IT" D is looking for a pear.

DAVID S.

SESSION +4 CONTINUED

NEG+ _____:

INDETERMINATE:

DAVID S.

SESSION +5

DUMMY+ _____ : " ^ CAR" D finds a toy car.
 " x SNOOPY" D is holding Snoopy doll.
 "a SNOOPY" D covers Snoopy with a blanket.
 "a MOMMY" D to M who is talking to A.
 "a ANDRYA" D to A to get her attention.
 " r BABY" M is talking to A about a baby.

REDUPLICATED _____ : "BAD BAD" D touches the Christmas tree but known
 he should not.

EMPTY FORM+ _____ :

GROUP I:

SS:

VV:

CC: "NEW CAR" (I) 2X M to D, "Is this the color of the new car?"
 "MORE CAR" 5X D looks for a second car.
 "BROKEN CAR" D is holding a broken car.
 "RECORD PLAYER" D to M in request. M then gets D's record player.
 "ANDY DOLL" (I) A says, "It's an Andy doll."
 "MORE RAISIN" D to M in request after D finished one box.
 "MORE COCA COLA" D to M in request after D finished his soda.
 "APPLE SAUCE" D to M in request after M has denied all other re-
 quests.
 "TWO PIECE" (I) 2X A says, "You found two pieces."
 "MOMMY MATCHES" 2X D finds M's cigarettes and matches.
 "NEW BOOK" (I) 3X M asks, "You want a new book?"
 "RAISIN NOW" (I) 2X M asks, "Do you want a raisin now?"

GROUP II:

SV:

SC:

VC: "OPEN IT" 5X D drags the toy bag over to A.
 "TAKE IT" D holds out a toy giraffe to A.
 "BOUNCE IT" As D throws a ball.
 "READ IT" 5X D hands a book to M.
 "READ BOOK" D gives A a book.
 "WOKE UP" D picks Andy doll off floor.
 "SIT UP" (I) 3X D sits Snoopy on his bike.
 "SIT DOWN" D to A while pointing to floor.

GROUP III:

SSV:

SSC:

VVC:

DAVID S.

SESSION +5 CONTINUED

SVV:
SCC:
VCC:

GROUP IV:
SSVV:
SSCC:
VVCC:

GROUP V:

SVC: "I LOVE BABY" Routine with M. M says, "Who do you love?
"I LOVE JELL" I love . . ."

EXPLIC+ _____:

Q+ _____: "WHERE IS IT" 2X D looks for puzzle pieces.

NEG+ _____:

INDETERMINATE:

DAVID S.

SESSION +6

DUMMY+ _____: "a MOMMY" D points at tape recorder. Followed by,
 "get it."
 "a SIT" D sits on his dresser.
 " ^ PRESS" D points to tape recorder.

REDUPLICATED _____: "TICK TICK TICK" D holds a watch. A says,
 "I'll make it tick."
 "TRUCK TRUCK TRUCK" D hears a truck outside.
 "BUS BUS" D hears traffic noise.
 "MOMMY MOMMY" D calls to M as she enters the
 apartment.
 "BAD BAD" D hits the desk after he walks into it.

EMPTY FORM+ _____:

GROUP I:

SS:

VV:

CC: "THIS WAY" D pulls on the zipper of the toy bag.
 "JUNK BAG" (I) A says, "You've got the junk bag."
 "MORE CAR" 10X D pulls several cars from the toy bag.
 "ALL GONE" 6X Whenever finishes playing with something.
 "NEW CAR" 2X D looks out window at traffic.
 "MORE JUMP" D has been jumping off the toy chest and gets on it again.
 "HIDE 'N SEEK" D to M in request.
 "TV ON" 12X D walks to TV as if he were going to put it on.
 "IN HERE" (I) A says, "We'll bring the recorder in here."
 "BAD BAD HORSE" D falls off the horse.
 "DUMP TRUCK" 5X D gets his large toy dump truck.
 "POLICE CAR" (I) 2X M says, "Do you see a police car." D and M are
 looking out the window.
 "A TRUCK" D sees a truck out the window.
 "COAT ON" 5X D sees A putting her coat on.
 "GOOD BOY" (I) A says, "You're a good boy."
 "LIGHT ON" D goes to light switch and turns it on.
 "BAD BAD DESK" D bumps into the desk.
 "BOX OF RAISINS" A asks, "What do you have?"
 "MORE RAISINS" D to M after he finishes his raisins.

GROUP II:

SV: "TRUCK ROLL" D looks out window at traffic.
 "HE ROLL" D looks out window at traffic.
 "MOMMY COME" D grabs M from the phone in the other room.
 "WE GO" (I) M says, "Here we go."
 "DAVID SIT" 3X D climbs into his high chair.
 SC: "TV OFF" 4X TV is off and D points at it.
 "TAPE IN" A asks, "Where is the tape?" D points at tape recorder.

DAVID S.

SESSION +6 CONTINUED

"MOMMY PANTS" D's pants are opened. D walks over to M to close them.
 VC: "SEE THIS" D pulls Andy doll from the toy bag.
 "OPEN THIS" 6X D gives A a box.
 "OPEN IT" D gives A a box.
 "FALL DOWN" (I) A says, "Snoopy will fall down."
 "SIT SNOOPY" D sits Snoopy up.
 "GET UP" 5X D sits Snoopy up after he falls.
 "GO CHICAGO" D is riding his motorcycle.
 "THANK YOU" D hands pretend money to M.
 "GIVE ME" D is trying to prop Snoopy up but needs M's help.
 "FELL DOWN" After Snoopy falls.
 "LOCK IT" (I) M says, "I'm going to lock it." M refers to cabinet
 that D keeps opening.
 "SIT DOWN" D gets into his high chair.
 "COME IN" 2X M is in bathroom. D knocks on and pushes door.
 "GET IT" D points at tape recorder.

GROUP III:

SSV:

SSC:

VVC:

SVV:

SCC: "MOMMY TAPE RECORDER" D to M. D is pointing at recorder for M to
 get it.

"DADDY NEW CAR" A asks, "Who has a new car?"

VCC: "GIVE ME THIS" D grabs a high chair tray.

GROUP IV:

SSVV:

SSCC:

VVCC:

GROUP V:

SVC: "SNOOPY SIT UP"
 "HERE WE GO" 2X
 "MOMMY OPEN THIS"
 "SNOOPY FALL DOWN"
 "MOMMY GO COOK"

EXPLIC+ _____ : "HI ANDRYA" D to A when A enters apartment.
 "UHOH SLIPPER" 2X D's slipper falls off his foot.
 "HI MOMMY" D calls to M from the top of a toy chest.
 "BYE BYE TRUCK" Truck passes outside.
 "BYE BYE ANDRYA" D thinks that A is leaving.

DAVID S.

SESSION +6 CONTINUED

"BYE BYE MOMMY" D is on his motorcycle and rides from the room.

"BYE MOMMY" D is on the motorcycle and leaves the room.

"OH SEE" 2X D holds up a picture for A to see.

"MOMMY JUMP" 3X D is on top of the chest. D has been jumping off the chest and M has been catching him.

"MOMMY COAT ON" D sees A with her coat on and tells M.

Q+ _____:

NEG+ _____:

INDETERMINATE:

DAVID S.

SESSION +7

DUMMY+ _____ : "a HAPPEN" D's record player stops and A asks, "What needs to happen?" A is referring to the fact that it needs to be rewound.

REDUPLICATED _____ :

EMPTY FORM+ _____ :

GROUP I:

SS:

VV:

CC: "TAPE RECORDER" A asks, "What's that?" D is lifting the recorder's cover.
 "JILL HOUSE" (I) A says, "Maybe the truck went to Jill's house."
 "A TOP" A is holding a top. M asks, "What's this?"
 "BIG COW" M asks, "What's that?" D has a cow puzzle piece.
 "STATUE HORSIE" M asks, "What do we see statues of when we go to Grandma's house?"
 "KINDA TRUCK" (I) 2X A asks, "What kind of truck is that?"
 "MOVING TRUCK" (I) A says, "It's a moving truck."
 "MAIL TRUCK" (I) A says, "There's a mail truck."
 "FIRE ENGINE" D points to a fire engine out the window.
 "ALL GONE" 2X A fire engine pulls away.
 "THIS TABLE" D puts a toy car on the table.
 "MORE BIRDS" D sees many birds flying out the window.
 "MORE BIRDS SKY" D sees birds out the window.
 "THIS WAY" 4X D gives Snoopy's collar to M to put on Snoopy.
 "PURPLE RECORD" M asks, "Do you know what color that record is?"
 "BIG FALL" D is looking at a picture of Humpty Dumpty.
 "ALL RIGHT" A fixes one of D's toys and gives it back to him.
 "TWO JALOPY" A asks, "How many jalopies do you have?"
 "THREE JALOPY" Follows preceding utterance.
 "GRANDMA HOUSE" 2X M asks, "Where do you see Sammy?"
 "UP THIS" D drops a toy and says this to M. D can't reach the toy.
 "VERY SOFT" M asks, "What whispers?"
 "VERY HIGH" (I) M says, "Very soft and very high."
 "MORE HIDE 'N SEEK" D to A after A stops playing.
 "THREE THUMBS" A says, "One, two, three fingers." A is counting D's fingers.
 "SHAPE BOX" 2X A asks, "You want to play with the ball or the shape box?"
 "PRETTY BOX" D refers to shape box while holding it.
 "ALL RIGHT" A says, "Let's put all the pieces in the box."
 "THIS TABLE" A asks, "Do you want to do it on the floor?"
 "THIS WAY" D is riding his motorcycle and turns into kitchen.
 "BACK SEAT" D puts Snoopy on the motorcycle.

DAVID S.

SESSION +7 CONTINUED

GROUP II:

SV: "MOMMY SEE" D holds a broken toy up for M to see.
 "THEY COMING" (I) M says, "They're coming back from Capistrano."
 "MOMMY WIND" 5X D gives the record player to M.
 "MOMMY HELP" D can't find the records.
 "ANDRYA HELP" 2X D can't wind toy radio.
 "MOMMY HELP" 5X D can't find right spot for shape piece on the box.

SC: "THERE ONE" D points out the window to a truck.
 "THAT TRUCK" A asks, "What's that?"
 "TV ON" D walks over to the TV that M had turned on.
 "THAT RECORDER" A asks, "What's that?"
 "THIS JALOPY" D brings in a second jalopy. A asks, "What is this?"

VC: "SIT DOWN" 2X D to A.
 "SEE TRUCK" D runs to window.
 "GO BUS" M says, "We're going to grandma's."
 "DO IT" 2X D gives M his record player for her to wind.
 "SING DO DAH" 2X M says, "Play do dah on the recorder."
 "TURN OFF" D is standing at the tape recorder.
 "WIND IT" D gives A his toy radio.
 "OPEN THIS" 2X D pushed against the door.
 "STAY HERE" D goes into the kitchen. A asks, "Should we come too?"
 "OPEN IT" D goes over to the tape recorder and pulls on cover.
 "TAKE IT" 3X D gives A some shape pieces.
 "GET UP" Snoopy falls over.

GROUP III:

SSV: "DAVID HAND FITS" D puts his hand into the tape recorder case.

SSC:

VVC: "WANT SEE THAT" D takes a toy horse from M.
 "COULD SEE THAT" D points out the window to a passing airplane.
 "HELP DO THAT" D to M when D can't take a record off his player.

SVV:

SCC: "PENNY IN IT" 2X D opens a toy pocketbook.
 "BIRDS ALL GONE" D watches birds fly away.
 "IT A TRUCK" D has a pull toy. A asks, "What is that?"

VCC: "SEE GARBAGE TRUCK" D looking out the window.
 "SEE POLICE CAR" D is looking out the window.
 "SEE TRUCK HERE" D gets his toy truck.
 "BLEW HOUSE IN" (I) D and M are telling the story of the Three Little Pigs. M asks, "Who blew the house in?"
 "CLOSE THE DOOR" As A opens the door to the kitchen.
 "TAKE ME HOME" D to Snoopy when Snoopy is sitting on the motorcycle.

GROUP IV:

SSVV:

.DAVID S.

SESSION +7 CONTINUED

SSCC: "GARBAGE TRUCK ALL GONE" D watches a garbage truck pull away.
 "MOVING TRUCK ALL GONE" D sees that the moving truck left.
 "FIRE ENGINE ALL GONE" D had heard a fire engine but when he got
 to the window it wasn't there.

VVCC:

GROUP V:

SVC: "MAN GO TRUCK"
 "DADDY COME IN"
 "HERE WE GO"
 "MOMMY DO IT"
 "MOMMY WIND IT"
 "MOMMY HELP DO IT"
 "ANDRYA OPEN IT"
 "HE BLEW HOUSE IN"
 "MOMMY OPEN THIS"
 "I SAID GOODBYE"
 "ANDRYA PICK IT UP"
 "SNOOPY FELL DOWN"
 "SNOOPY GET UP"
 "SIT UP SNOOPY"

EXPLIC+ _____: "UHOH PEOPLE" D takes out the toy bus but there are
 no people.
 "HELLO DADDY" D puts toy daddy into the bus.
 "UHOH SNOOPY" D finds Snoopy's collar in the toy box.
 "OH DOO DAH" M says, "Let's sing doo dah."
 "OKAY MOMMY" A says, "That's the okay button. You
 can press it." A refers to the recorder.
 "THANK YOU ANDRYA" A gives D a balloon.

Q+ _____: "WHERE IS IT" 3X D is looking for various things.
 "WHERE IS THE TRUCK" D is looking for the truck.
 "WHERE IS YOU SNOOPY" D is riding on his motorcycle.
 "WHAT HAPPENED SNOOPY" D finds that Snoopy's collar
 isn't on him.
 "WHAT HAPPENED COLLAR" D to Snoopy when D sees that
 Snoopy isn't wearing his collar.
 "WHERE IS JALOPY" D looks under the sofa.

NEG+ _____: "NO SLIPPERS" D looks at his feet and sees that he
 isn't wearing slippers.
 "NO MOMMY" 2X M tells D not to touch the tape record-
 er but he puts his finger on it saying:

DAVID S.

SESSION +7 CONTINUED

"NO PIGGY BANK" 2X A asks D, "Do you have a piggy bank?"

"NO OPEN" A asks, "Does the door to the bus open?"

"NO MOMMY" A offers to put Snoopy's collar on but D takes it and gives the collar to M.

"NO CLOWN" A says, "It's a clown." A refers to the jalopy.

"NO CHICAGO" M asks, "You going to Chicago?"

"NO MIAMI" M asks, "You going to Miami?"

"NO BOOK" A says, "If you get a book, I'll read it to you." D does not look for a book. He shakes his head and gets on his motorcycle.

"NO MOTORCYCLE GARAGE" M says, "Your motorcycle is in the garage."

INDETERMINATE:

DAVID S. SESSION +8

DUMMY+ _____: "I GOES" D pushes his toy car.

REDUPLICATED _____:

EMPTY FORM+ _____:

GROUP I:

SS:

VV:

- CC: "CHUCHU WATER" D points to the dog's water on the floor.
- "GARBAGE TRUCK" 2X D looks out the window and points to a garbage truck.
- "TAPE RECORDER" D is standing at the tape recorder. A asks, "What's that?"
- "DADDY JACKET" Dad asks, "Whose jacket is that?"
- "NICE JACKET" D has put on his new windbreaker.
- "CARS TAXI" A asks, "What do you see out there?"
- "BIG PROBLEM" D is stuck in the motorcycle. A says, "You have a problem."
- "THREE PIG" Dad says, "You ought to tell the story of Three . . ."
- "SECOND PIG" (I) A asks, "What happened to the second pig?"
- "ANDRYA KEYS" D finds A's keys on the table.
- "BIG FALL" Dad says, "Humpty Dumpty had a . . ."
- "DADDY TENNIS RACKET" D pulls on Dad's tennis bag.
- "BIG DAVID CHOOCHOO TRAIN" D shows A a toy train. M explains that it had belonged to his friend, big David.
- "ROOT BEER" A asks, "What kind of soda is that?"
- "BIG TAXI" 2X D sees several taxis out the window.
- "ANOTHER TAXI" D is looking out the window at the traffic.
- "POLICE CAR" D hears a siren outside.
- "BIG POLICE CAR" 2X D hears a siren.

GROUP II:

- SV: "DADDY COME" 3X D grabs Dad's hand.
- "MOTOR CYCLE STUCK" The motorcycle gets stuck in the doorway.
- "DAVID SIT" D climbs on Dad's lap.
- "RITA COMING" 2X A had been on the phone with Rita.
- "SHE COMING" D to M referring to A who was in the bathroom.
- SC: "DAVID BUSY" Daddy says, "Tell the story of The Three Pigs, David."
- VC: "FIXING MOTORCYCLE" D is playing with the back of the cycle. A asks, "What are you doing?"
- "KISS IT" D kisses Dad's sore foot.
- "STUCK AGAIN" 2X Cycle gets stuck in the kitchen.
- "SEE TRAIN" 2X D shows A and M a train.

DAVID S.

SESSION +8 CONTINUED

"CHU CHU HOLD IT" 2X
 "DAVID SIT MOMMY"
 "YOU GET IT MOMMY"

EXPLIC+ _____ : "HI DADDY" D runs to Dad when he comes home.
 "MOMMY LEAVE" 2X D gets on his cycle and rides away.
 "MOMMY STUCK" D gets stuck in corner with cycle,
 calls to M.
 "DADDY STUCK" D gets stuck in doorway with cycle.

Q+ _____ : "WHAT MOMMY" M calls D. D goes to M saying . . .
 "WHERE IS IT" D looks for toy car.
 "WHERE IS TENNIS SHOE" D looks in tennis bag.
 "WHERE IS SODA" D looks around for his soda.
 "WHERE IS ALAN" D looks for Alan.
 "WHERE IS CHU CHU" D remembers Chu Chu and can't
 find him.

NEG+ _____ : "NO GARBAGE TRUCK" Dad says, "I thought it was a
 sanitation truck."
 "NO CHU CHU" D to Chu Chu as the dog licks D's
 fingers.
 "NO GO JILL" D to Jill as she puts her coat on.
 "CHU CHU NO GO" D to Jill as she puts the dog's
 leash on.
 "NO ANDRYA" M and D at window. M asks, "What do
 you see?" D turns and looks around the
 apartment and says . . .
 "NO BALL MOMMY" D is looking in his room for a ball.

INDETERMINATE:

APPENDIX VII .

SYNTACTIC CORPORA: DAVID N.

SYMBOLS

D = David N.

M = Mother

A = Examiner

(I) = Imitation

_X = # times produced

DAVID N.

SESSION +1

DUMMY+ _____ : "I DROP" 7X As D drops various things.
 "X HAVE" 3X While D pointed at various things he
 wanted.
 "A BOOK" D is sitting at a table with a book.
 "A BALL" M has a ball and D grabs it from her.

REDUPLICATED _____ : "BALL BALL" D sees a ball across the room and
 runs to it.

EMPTY FORM+ _____ :

GROUP I:

SS:

VV:

CC: "MORE JUICE" 2X D finished his juice and runs into kitchen.

"APPLE JUICE" M asks, "What kind of juice do you want?"

"MY BALL" M is holding the ball. D's arms are outstretched for it.

GROUP II:

SV:

SC:

VC:

GROUP III:

SSV:

SSC:

VVC:

SVV:

SCC:

VCC:

GROUP IV:

SSVV:

SSCC:

VVCC:

GROUP V:

SVC:

EXPLIC+ _____ :

Q+ _____ :

DAVID N.

SESSION +1 CONTINUED

NEG+ _____:

INDETERMINATE:

DAVID N.

SESSION +2

DUMMY+ _____ : "[^] BROKE" 5X D picks up a car and the wheels fall off.
 "[^] DROP" D drops a mirror.
 "~~x~~ BALL" 17X D points at pictures of balls in a book.
 "~~x~~ BAG" 2X D is trying to open the toy bag.
 "~~x~~ HORSE" D sees a toy horse in the toy bag.
 "~~x~~ JUICE" D to M. M interprets as D's wanting juice.
 "~~x~~ BALL" 2X D points at a ball under the bed.

REDUPLICATED _____ :

EMPTY FORM+ _____ :

GROUP I:

SS:

VV:

CC: "MOMMY BALL" D points at a lime on top of the refrigerator. D calls all round objects balls.

GROUP II:

SV:

SC:

VC: "WANT BALL" D climbs on top of kitchen counter to reach the lime.

GROUP III:

SSV:

SSC:

VCC:

SVV:

SCC:

VCC:

GROUP IV:

SSVV:

SSCC:

VVCC:

GROUP V:

SVC:

EXPLIC+ _____ :

Q+ _____ :

DAVID N.

SESSION +2 CONTINUED

NEG+ _____:

INDETERMINATE:

DAVID N.

SESSION +3

DUMMY+ _____ : "au DADDY" D finds his father's pliers.
 "r BROKEN" D has trouble opening a zipper.
 "e BOX" D sees a box.
 "o DADDY" D grabs one of his father's tennis balls.
 "t LANI" D hears M and Lani come home.
 "a LANI" A asks, "Where's M?" M is in living room
 with Lani.

REDUPLICATED _____ :

EMPTY FORM+ _____ :

GROUP I:

SS:

VV:

CC: "IN BOX" D picks up all the toy animals and puts them into a box.

GROUP II:

SV:

SC:

VC: "WANT MOMMY" 2X D walks around house looking for M and calling her.

GROUP III:

SSV:

SSC:

VVC:

SVV:

SCC:

VCC:

GROUP IV:

SSVV:

SSCC:

VVCC:

GROUP V:

SVC:

EXPLIC+ _____ :

Q+ _____ :

DAVID N.

SESSION +3 CONTINUED

NEG+ _____ :

INDETERMINATE:

DAVID N.

SESSION +4

DUMMY+ _____ : "X BROKE" D pushes a car and the wheel falls off.
 "X BROKE" (I) D imitates A's, "What happened? It
 broke."
 "O MOMMY" D looks around the room.
 "I WATER" D points to the watering can.

REDUPLICATED _____ : "WATER WATER" D is watering the plants and runs
 out of water.

EMPTY FORM+ _____ :

GROUP I:

SS:

VV:

CC: "MY MOMMY" D cries at door after M leaves.
 "MOMMY FLOWER" D is holding one of M's plants.
 "THAT BOX" (I) D imitates A's, "You want that box."
 "THAT BOX" D reaches for the toy bag. A asks, "What do you want?"
 "DADDY BALL" D looks around the room for a ball and finds a tennis
 ball.
 "MOMMY BALL" D sees an apple on top of the kitchen counter.

GROUP II:

SV: "ME SEE" A takes a fruit puzzle from the bag. D grabs it.

SC:

VC: "WANT MOMMY" 2X D cries at the door after M leaves.
 "SEE THAT" 2X D is looking into a mirror.

GROUP III:

SSV:

SSC:

VVC:

SVV:

SCC:

VCC:

GROUP IV:

SSVV:

SSCC:

VVCC:

GROUP V:

SVC:

DAVID N.

SESSION +4 CONTINUED

EXPLIC+ _____:

Q+ _____: "WHAT THAT" 2X D is holding a pear from the fruit puzzle.

NEG+ _____:

INDETERMINATE:

DAVID N.

SESSION +5

DUMMY+ _____ : "a WANT" D reaches for a block.
 "I GO" D holds up a car.
 "I MOVE" D pushes a toy refrigerator.
 "2 MOVE" D pushes a toy car.
 "o BOAT" D points out window to the river.
 "a TOP" 5X D piles blocks on top of one another.
 "2 HERE" D grabs a block.
 "I BUS" D points out the window.
 "2 DOLL" 3X D pulls a doll from the toy bag.
 "2 WATER" D puts a box into the sink.
 "A MIRROR" D looks into the mirror hanging in M's room.
 "A MOMMY" D is crying at the front door after M leaves.

REDUPLICATED _____ : "WATER WATER" 2X D points out the window to the river.
 "DADDY DADDY" D points at the mirror in the bathroom.
 "BOTTLE BOTTLE" D opens the refrigerator and points to juice bottle.

EMPTY FORM+ _____ :

GROUP I:

SS: "MY LANI" A asks, "Who painted that picture?"
 "MY MIDI" 2X A asks, "Mommy uses a rope?"
 "THAT ONE" A's watch falls down. D points at it and A asks, "What fell?"
 "DADDY MOMMY" D is in his parents' room and A asks, "Where is M's clock?" D points at a clock.

VV: "SEE GO" D pushes a truck.

CC: "THAT BOAT" 2X D points out the window to the river.
 "THE WATER" 3X D points to river.
 "THE BOAT" D points out the window.
 "THAT BUS" 2X D sees a bus outside.
 "MORE BLOCKS" D is building a tower and runs out of blocks.
 "MY MOMMY" 3X After D soils his diaper.
 "THAT ONE" D points to fruit puzzle.
 "IN IT" 2X A duck is swimming in water in a picture book.
 "IN WATER" D sees a picture of a duck swimming in water.
 "MY DABY" D points at a picture of an animal. D calls all animals "daby."
 "THE DABY" 2X D takes animals off the toy boat.
 "THE BUS" D runs to the toy bus.
 "THAT ONE" A asks, "What do you want?" D points to the blocks.
 "THE WATER" D is holding a toy that had been filled with water.
 "THE BALL" 2X D finds a ball.
 "MY BOOK" A is reading a book to D.
 "THE BANK" A asks, "Where is Mommy?"

DAVID N.

SESSION +5 CONTINUED

"ONE BLOCK" 2X D hands A blocks.

GROUP II:

SV: "APPLE GO" D puts the apple piece into the fruit puzzle.

"BUS GO" D pushes the toy bus.

"THAT DROP" The block tower falls down.

SC: "THAT LANI" 2X D points to dolls on a shelf. A asks, "Whose are those?"

"THAT DADDY" D points to a clock. A asks, "Whose is that?"

"BUS BETTER" (I) A says, "The bus goes better."

"THERE BALL" D looks under the bed for the balls.

"THAT LANI" 2X D pulls down Lani's picture from the wall.

"THAT DIRT" D has his hand in the air conditioner unit. A asks, "What is that?"

VC: "WANT MOMMY" 3X D cries at door for M after M leaves.

"FALL DOWN" D turns a bag of toys upside down.

"GO IN" D puts trucks into the toy bag.

"WANT WATER" D reaches for the sink.

"SEE IT" 2X D grabs animals that A has.

GROUP III:

SSV: "THIS ONE GO" D points to a truck on the floor.

SSC: "THE PEOPLE BUS" D plays with the people on the toy bus.

VVC:

SVV:

SCC: "THIS THE ONE" A says, "Show me the picture of Lani's school."

"THAT BABY WATER" D points to a picture of milk bottles.

"THAT A BABY" D points to a picture of a baby in a book.

VCC:

GROUP IV:

SSVV:

SSCC:

VVCC:

GROUP V:

SVC:

EXPLIC+ _____ :

Q+ _____ :

DAVID N.

SESSION +5 CONTINUED

NEG+ _____ :

INDETERMINATE: "FIT SHOE" D looks down at his shoe.
"BALL DADDY" D points at a tennis ball.

DAVID N.

SESSION +6

DUMMY+ _____ : "A GONE" D finishes his juice.
 "A DROP" 2X A drops a bottle.
 "Z TOWER" D builds a block tower.
 "Z SUSU" 2X D comes into room with a sucker.
 "Z LANI" D is holding Lani's sucker.
 "Z BALL" D points to a ball on the shelf.
 "Z BOOBOO" D points to a sore on his knee.
 "Z TOWER" D had just built a tower out of the blocks.
 "A BALL" D finds a ball under the crib.
 "Z WATCH" (I) A says, "It's a watch."
 "Z BUS" D points to a picture of a bus.
 "Z DOLL" 2X A is holding a doll and asks, "What is this?"

REDUPLICATED _____ : "TOWER TOWER" D watches the tower of blocks fall.
 "THAT THAT" D points to the fallen tower. Followed by, "fall."
 "DADDY DADDY" D and A are looking at a picture of a doctor. A says, "The doctor goes to the hospital."
 "LANI LANI" A picture falls off the wall. A asks, "Whose picture fell?"
 "MOVE MOVE" 4X D pushes the table.
 "OPEN OPEN" 5X D opens a book.
 "DROP DROP" Lani's picture falls off the wall.
 "SUSU SUSU" D is holding Lani's sucker.
 "LANI LANI" D points at the sucker.
 "WATER WATER" 10X D puts water into watering can.
 "MOM MOM" When M's plant falls.
 "HOT HOT" 4X D touches the coffee cup.
 "SHOE SHOE" D finds Lani's shoe.
 "BALL BALL" 4X D grabs a ball.
 "BAD BAD" 2X D shows A the crayoning in a book.
 "BLOCK BLOCK" 3X D tries to reach the blocks.

EMPTY FORM+ _____ :

GROUP I:

SS: "THE BUS" (I) 3X A asks, "What does the bus have?" D and A are looking at a picture of a bus with empty seats.

VV:

CC: "TO SKY" A says, "You're going to throw the ball."
 "THE HAMMER" D holds a hammer.
 "THE BLOCK" D reaches for blocks.
 "THIS BOOK" D takes a book off the shelf.
 "MOMMY PACKAGE" (I) A says, "See M's package."

DAVID N.

SESSION +6 CONTINUED

GROUP II:

SV: "THAT DROP" When the sucker falls on the floor.
 "THIS DROP" D picks up the sucker.
 "MOMMY COME" D grabs M's hand.
 "LANI DROP" 2X Lani's picture falls off the wall.
 "WATER DROP" A cup falls off the table.
 "BLOCK DROP" The block tower falls over.
 "IT DROP" A crashes into all the blocks with a toy truck.

SC:
 VC: "WANT SUSU" D reaches for sucker from M.
 "OPEN IT" D gives M the tape box.
 "WANT MOMMY" M has left and D notices her absence.
 "READ IT" 3X D hands A a book.
 "DROP IT" D drops an animal on the floor.
 "OPEN POCKETBOOK" D pulls A's pocketbook.
 "WIND THIS" D gives A a wind up toy.

GROUP III:

SSV:
 SSC:
 VVC:
 SVV:
 SCC:
 VCC:

GROUP IV:

SSVV:
 SSCC:
 VVCC:

GROUP V:

SVC:

EXPLIC+ _____:

Q+ _____: "WHERE MOMMY" 4X After M leaves the apartment.

NEG+ _____:

INDETERMINATE:

DAVID N.

SESSION +7

DUMMY+ _____ : "x DROP" 2X The doll's head falls off.
 "x BROKE" D is holding the doll without its head.
 "o STUCK" 5X The top of the toy milk bottle is stuck
 and D can't get it off.
 "i GO" D pushes a toy animal on the floor.
 "A WRITE" D finds a crayon.
 "r COW" D looks on the floor for the toy cow.
 "i DOLL" D gives A the doll's head.
 "A DOLL" D has the doll's shoes. A asks, "Where is
 the doll?"
 "x DOWN" 4X D knocks down the blocks.
 "x BLOCK" 5X D writes with a crayon on a block.
 "x BOOK" 6X D gets several books and brings them to A.

REDUPLICATED _____ : "PETIE PETIE" M asks, "Did Petie knock over the
 plant?"
 "MAN MAN" D looks at a picture of a man walking
 in the rain. Followed by, "walk."
 "BUS BUS" A winds up a bus and it is running in
 a circle.
 "DROP DROP" 3X The toy boat falls off the table.
 "MOVE MOVE" 2X D pushes a toy truck.
 "OPEN OPEN" 2X D tries to get the top off of the
 bottle.
 "HOT HOT" 6X D points to A's coffee.
 "MOM MOM" (I) A asks, "Where is M?"
 "WATER WATER" D closes the closet on his fingers.
 He runs to M so she can put his finger under
 the faucet.
 "DIRT DIRT" D points to a dirty ashtray.
 "MOO MOO" 7X D is looking at a picture of a cow.
 "TURTLE TURTLE" 10X D sees a turtle in a book.
 "BOX BOX" 2X D points to the paints in a box.
 "DOLL DOLL" D takes the dolls from their cradle.
 "HANGER HANGER" D finds a hanger under his crib.
 "KEY KEY" D takes a key out of the plastic con-
 tainer.
 "SHOE SHOE" D finds a doll's shoe.
 "BOOK BOOK" D reaches up to the book shelf.
 "BALL BALL" A asks, "What else is in there?"
 "WATER WATER" D reaches for the watering can.
 "PAPER PAPER" 2X D writes in a book. A says,
 "It's bad to write in a book."
 "WATER WATER" D is holding an empty cup and runs
 to bathroom.

EMPTY FORM+ _____ :

DAVID N.

SESSION +7 CONTINUED

GROUP I:

SS:

VV:

CC: "BALL DOWN" A takes a ball from the shelf.
 "THE DABY" D takes an animal from a container
 "THE SKY" 6X A says, "You're going to throw the ball?"
 "THING DOWN" D climbs on the shelves to reach a box.
 "BUS DOWN" D is holding a toy bus, then he puts it on the floor.
 "IT DOWN" D climbs on the shelf and points to a box. D to A in
 request.

GROUP II:

SV: "ANIMAL DROP" 2X An animal falls to the floor.
 "ANIMAL CRY" D looks at a book and sees a picture of a dog crying.
 "DOLL DROP" D drops a doll.
 "THIS DROP" M's hanger falls to the floor.
 "CUP DROP" A's cup falls off the table.
 "ONE DROP" D knocks down a bottle.
 SC: "IT PETIE" D looks at a picture of a baby. A asks, "What is that?"
 "PETIE BAD" M asks, "Did Petie knock over the plant?"
 "BOO BOO WATER" D hurts his hand. D wants M to put his hand under
 the faucet and says, "The boo boo goes under the
 faucet."
 "IT TURTLE" D sees a picture of a turtle. A asks, "What is it?"
 "THAT BALL" D points to a picture of a ball. A asks, "What is that?"
 "THAT DOLL" A is holding a doll and asks, "What's this?"
 "THAT BLOCK" D piles up blocks. Followed by, "tower."
 "THAT COW" D points to a picture of a cow. A asks, "What is that?"
 "THAT WATER" D points to the water faucet.
 VC: "DROP ANIMAL" 2X An animal falls to the floor.
 "DROP MIDI" A toy that Midi had bought fell down.
 "MOVE BLOCK" 2X D pushes toys aside.
 "DROP BLOCK" 2X The blocks fall down.
 "SIT DOWN" D to A as D points to a chair.
 "WANT BALL" D reaches for a ball.

GROUP III:

SSV:

SSC:

VVC:

SVV:

SCC:

VCC:

DAVID N.

SESSION +7 CONTINUED

GROUP IV:
 SSVV:
 SSCC:
 VVCC:

GROUP V:
 SVC:

EXPLIC+ _____:

Q+ _____:

NEG+ _____: "IT NO" A has a spinning music box. A asks, "Should
 I put it down?"
 "NO DONE" The wind up bus runs out and stops moving.
 "NO BOX" D stands in the block box. A says, "Come
 out of there."
 "NO BALL" D is looking for a ball and can't find it.

INDETERMINATE: "ANIMAL MIDI" D has a toy animal that Midi had given him.

DAVID N.

SESSION +8

DUMMY+ _____ : "I LANI" Iani comes into the house with Donna.
 "I DROP" 4X A hands a ball to D but it falls.
 "x SIT" 5X After A stands up D points to her chair.
 "I SIT" 3X D to A while grabbing the chair.
 "I ME" 2X A pulls a chair over. D copies A pulling
 one over to the table for himself.
 "x DABY" 2X D takes an animal from the toy boat.
 "I TOP" D puts one animal on top of another.
 "I BALL" 20X D points to ball.
 "A CLAY" D has clay. A asks, "What is that?"
 "A SKY" D tosses the clay up to the ceiling.
 "A CARROT" 5X D looks for a carrot in the refrigerator.
 "I BALL" 2X D is playing with clay balls.
 "I DONNA" 6X D notices that Donna left the room.
 "I WATER" D climbs onto the shelf and looks at the
 river.
 "I BLOCK" 7X D plays with blocks.
 "x TOP" 3X D stacks blocks.
 "o DOWN" D knocks the block tower over.
 "o BALL" D gives A a piece of clay to make into a ball.

REDUPLICATED _____ : "THAT THAT" D sees a picture of a giraffe. A
 asks, "What is that?"
 "LOOK LOOK" D pushes a small chair into a hole
 and wants A to see what he is doing.
 "DABI DABI" 2X D points at a giraffe.
 "GIRAFFE GIRAFFE" D is holding a giraffe.
 "ONE ONE" A says, "Here's another giraffe." D
 takes it.
 "PAINTING PAINTING" 2X D is standing on a paint-
 ing.
 "MAN MAN" A has a toy man. A asks, "What's this?"
 "TRUCK TRUCK" 2X D takes a truck from the toy
 boat.
 "WATER WATER" 4X D picks up a boat.
 "CHAIR CHAIR" 2X D finds a chair in the toy boat.
 "BALL BALL" 32X At various times while playing
 with clay balls.
 "SKY SKY" 3X D throws a ball in the air.
 "CLAY CLAY" D gets another piece of clay.
 "CUP CUP" D puts clay in a pot.
 "MORE MORE" 2X D gets more clay balls.
 "BAD BAD" 2X D puts clay in the toilet. Then
 says this.

EMPTY FORM- _____ :

DAVID N.

SESSION +8 CONTINUED

GROUP I:

SS:

VV:

CC: "THE BALL" D throws a ball.
 "BABY BALL" (I) D gives A a small piece of clay for a ball. A says,
 "I'll make a baby ball."
 "AWAY BALL" D pushes ball aside.
 "BIG BALL" (I) A says, "I'll make big balls."
 "MORE BOOK" 2X D points to books on the shelf.
 "THAT BOOK" (I) A asks, "Do you want that book?"
 "NICE FLOWER" D sees a flower.
 "MORE THIS" D gives A more clay for balls.
 "MORE BALL" D gives A more clay.
 "BABY BALL" 2X D gives A a small piece of clay.
 "BALL SKY" D throws the ball up.
 "BIG BALL" D looks for the rubber ball.
 "HAMMER NOW" D gets a hammer from the shelf.
 "IN BED" A asks, "Where's M?" M is not really in bed.
 "BALL DONNA" A asks, "What will you do with that ball?" D then runs
 to Donna with the ball.

GROUP II:

SV: "MIDI KICK" D is holding a ball.
 "BALL SIT" D puts a ball in the toy basket.
 SC: "THAT SHOE" A and D are looking at a book. A asks, "What's that?"
 "THAT WATER" A and D are looking at a book. A asks, "What's that?"
 VC: "COOK HOT" 5X D puts balls in the toy oven.
 "PUTTING MONEY" D sees a picture of a boy putting money in a token
 box on the bus.
 "COOK THAT" D puts a pot on the toy stove.
 "COOK POT" D puts pot of clay balls on toy stove.
 "MOVE BYE" D throws a ball.
 "MOVE BALL" D throws a ball.
 "HELP BALL" D is looking for a big ball and can't find it.
 "WANT ONE" 5X D takes balls from Lani.

GROUP III:

SSV:

SSC:

VVC:

SVV:

SCC:

VCC:

DAVID N.

SESSION +8 CONTINUED

GROUP IV:
SSVV:
SSCC:
VVCC:

GROUP V:
SVC:

EXPLIC+ _____: "BYE BYE SMOKE" D waves his hand to move the smoke.

Q+ _____:

NEG+ _____: "NO NO DOWN" A says, "We better take some of these
blocks down from the tower before they fall."

INDETERMINATE: "PAINTING ME" D is standing on one of his paintings.
"STOP BUS" D sees a picture of a bus stopped at a light.
"WINDOW SIDE" D can see water out of his window. D
climbs up on shelf to look outside.
"WINDOW WATER" D can see water out of his window. D
climbs up on shelf to look outside.

DAVID N.

SESSION +9

- DUMMY+ _____ : "SIT" D to A while pointing at a chair.
 "COVER" D covers a doll with a blanket.
 "SLEEP" D takes two Annie dolls and lies them down.
 "CRY" (I) M says, "Tom Tom cried."
 "SKY" D throws a ball up.
 "SKY" D throws a ball up.
 "COFFEE" 2X M and A are having coffee.
 "KITCHEN" D stands up and walks into kitchen.
 "TOP" (I) A says, "You're going to put that on top."
 A refers to the blocks.
 "HOUSE" D points to a block house.
- REDUPLICATED _____ : "BALL BALL" D holds out a tennis ball can that had
 had balls in it but is now empty.
 "ME ME" M asks, "Who wants milk?"
 "DADDY DADDY" D sees a picture of a lady bug.
 Daddy had had a lady bug on him.
 "WRITE WRITE" D has a book and a pencil.
 "SIT SIT" D sees a picture of a boy standing on
 a bus.
 "COVER COVER" 2X D puts a cover on the balls.
 "SLEEP SLEEP" D has covered the balls.
 "MOVE MOVE" D pushes a car.
 "SIT SIT" A asks, "What are the boy and the girl
 in the book doing?"
 "MOMMY MOMMY" 2X D looks for M.
 "MORE MORE" D reaches for two other tennis ball
 cans.
 "SKY SKY" 2X D throws a ball up.
 "BALL BALL" 2X D points to a picture of balls.
 "HAND HAND" D hits his hand with a bat.
 "LIGHT LIGHT" D stands on chair to reach the light.
 "ON ON" D turns the light on.
 "SUN SUN" A asks, "Is it day or night?" D points
 to the sun.
 "FISH FISH" 2X D sees a picture of a cat swinging
 fish in a pot.
 "POT POT" 3X D sees a picture of a cat swinging
 fish in a pot.
 "HOT HOT" D grabs pot on toy stove.
 "HAT HAT" D puts the can on his head.
 "BONE BONE" 3X D sees a picture of the nursery
 rhyme about Old Mother Hubbard.
 "STICK STICK" M says, "Jack be nimble, Jack be
 quick, Jack jump over the . . ."
 "MOON MOON" D sees a picture of the moon.
 "MORE MORE" 5X D sees many moons.
 "DADDY DADDY" As D sees Daddy walk into the room.
 "DRAWER DRAWER" M asks, "Where did you get the gum?"

DAVID N.

SESSION +9 CONTINUED

EMPTY FORM+ _____ :

GROUP I:

- SS: "THE CAN" D observes the tennis can fall off the table.
- VV:
- CC: "EENSY BEENSY SPIDER" 3X D points to nursery rhyme pictures.
 "THE SHOE" M says, "One two buckly your . . ."
 "BUS BOOK" D brings a book to A.
 "THE BALL" D picks up a ball.
 "FOOT BALL" A asks, "What kind of ball is that?"
 "TENNIS BALL" 5X D points to top shelf where his tennis balls are.
 "BIG BALL" D grabs a big ball.
 "TO SKY" D throws the ball up.
 "THAT BALL" D points to a ball under the bed.
 "MORE COVER" D looks for another cover for the dolls.
 "MORE BALL" D wants the rest of the balls taken off the shelf.
 "FISH DOWN" D sees a picture of a cat swinging a fish. D wants the cat to put the fish down. D is very upset.
 "UP BED" 2X D climbs on bed.
 "HOT POT" There is a pot on the toy stove.
 "MORE TENNIS BALL" D points to several tennis balls on the floor.
 "MOTHER GOOSE" 4X A is holding a Mother Goose book.
 "MORE CRACKER" D to A in the kitchen.
 "HALF A MOON" 5X A asks, "What's this?" A refers to a picture of a moon.
 "THE MOON" 3X D points to a moon.
 "MORE CAT" 2X D sees another picture of a cat.
 "BAA BAA SHEEP" D sees the nursery rhyme about Baa Baa Black Sheep.
 "BUNNY RABBIT" 7X D points to a picture of a rabbit.
 "HOT TUSHY" 2X D sits on the radiator.
 "SOCK SHOE" 5X D takes off his socks and shoes.
 "THAT ONE" A asks, "Which block do you want?"
 "THE SIZE" (I) A asks, "Which size?" A refers to size of a block.
 "DOWN FISH" D sees a picture of a cat swinging a fish in a bowl.

GROUP II:

- SV: "FISH HAPPEN" D sees a picture of a fish fall out of his bowl.
 "TOM TOM CRY" D sees the nursery rhyme of Tom Tom the Piper's Son.
- SC: "IT OFF" (I) A says, "Now, it is off your head." A refers to the can on D's head.
 "THAT PETER" D points to a picture of Peter Peter the Pumpkin Eater.
- VC: "TAKE IT" D takes a book from A.
 "GET IT" D goes into the kitchen for a book.
 "READ AGAIN" A had read the book to D once.
 "HOLD IT" D gives blocks to M.
 "GET IT" 7X D runs to get different balls.

DAVID N.

SESSION +9 CONTINUED

"NEED TOP" D wants the top for the tennis ball can.
 "READ BOOK" D holds out a book to A.
 "COVER BALL" D puts cover on top of balls.
 "FALL DOWN" The block tower falls over.
 "SEE CAT" D points to picture of a cat.
 "SEE DONKEY" D sees a picture of a donkey.

GROUP III:
 SSV:
 SSC:
 VVC:
 SVV:
 SCC:
 VCC:

GROUP IV:
 SSV:
 SSC:
 VCC:

GROUP V:
 SVC:

EXPLIC+ _____:

Q+ _____:

NEG+ _____:

INDETERMINATE: "HAPPENED THIS" D sees a picture of a cat swinging a fish in a bowl and the fish falls out of the bowl.

DAVID N.

SESSION +10

DUMMY+_____:

REDUPLICATED _____: "PEOPLE PEOPLE" D looks at ark that still has some toy people in it. D had taken some of the toy people out of the ark. Followed by, "out."
 "LANI LANI" A says, "David can draw so nicely."
 D grabs one of Lani's pictures and holds it up saying . . .
 "MOMMY MOMMY" M throws a ball up.
 "ME ME" 2X A asks, "Who's going to the doctor?"
 "DOCTOR DOCTOR" A asks, "Who's inside the carriage?" A doll was in the carriage but had previously been talking about doctors.
 "MEN MEN" 2X D looks out the window and sees men on the roof of the next building.
 "MOMMY MOMMY" A asks, "Where's Mommy?" This utterance is followed by, "Downstairs."
 "WRITE WRITE" D is holding a piece of chalk.
 "BED BED" A asks, "Sit on what?"
 "HOUSE HOUSE" D points to a picture of a house.
 "TOY TOY" A asks, "Do you want to play with a toy or read a book?"
 "DOWN DOWN" D puts an elephant on the table.
 "HOT HOT" D points to the coffee cup.
 "CAMEL CAMEL" 3X A asks, "What's this?"
 "BOTTLE BOTTLE" D sees a picture of a boy drinking from a bottle.
 "DADDY DADDY" D sees a picture of a boy sitting on his father's head.
 "BEAR BEAR" A asks, "What's this?"
 "MONKEY MONKEY" A asks, "What's that?"
 "BOY BOY BOY" 2X D takes a boy from the bus.
 "HOUSE HOUSE" (I) A says, "Build a house."
 "PAPER PAPER" D gets paper to write on.
 "BOAT BOAT" D points out the window to a boat.
 "CAR CAR" D points to a car.
 "DOOR DOOR" D tries to hang pictures on the door.
 "JUICE JUICE" D sees A's soda.
 "SIP SIP" D pulls A's cup from her.
 "BALL BALL" D throws a ball.
 "ME ME" A asks, "Is it yours or Dad's tennis racket?"
 "TEDDY TEDDY" D sees a teddy bear.
 "OUT OUT" D takes the balls out of the tennis ball can.
 "DOCTOR DOCTOR" 3X D gets the doctor book.
 "HAND HAND" D puts a toy doll on his finger.
 "BALL BALL" 8X D picks up clay balls.
 "HOT HOT" D opens toy oven.
 "MORE MORE" 2X D points to clay after A has made several clay balls.

DAVID N.

SESSION +10 CONTINUED

"CLAY CLAY" D finds a piece of chalk.
 "CHALK CHALK" 2X D is holding chalk.
 "BALL BALL" 3X D is looking in the oven for the balls.
 "MORE MORE" D gives A clay to make more balls.
 "PEN PEN" D finds a pen on the floor.
 "BUNNY BUNNY" 5X A gives D a clay bunny.

EMPTY PIVOT+ _____ :

GROUP I:

SS: "FUSSY CAT" 6X The clay cat's tail fell off. A asks, "Who lost the tail?"
 VV: "WENT WALKED" A asks, "Where's Daddy?"
 CC: "MOTHER GOOSE" 5X D gives A the Mother Goose book.
 "IN IT" (I) A says, "The doll goes in it." A refers to cradle.
 "FUSSY CAT" A points to a picture of a cat.
 "BLUE BOY" A is reading the nursery rhyme about Little Boy Blue.
 "THIS ONE" 2X D gets a book from the shelf.
 "ANOTHER ONE DOWN" A puts a toy horse on the table.
 "DADDY HEAD" D sees a picture of a boy sitting on his father's head.
 "WILD THINGS" D takes the Wild Things book from the shelf.
 "THIS OFF" D pushed a toy off the table.
 "ANOTHER ONE" 2X D takes a second crayon from a box.
 "HIGH UP" 2X D is holding a picture. A says, "Where should we hang it?"
 "DAVID CUP" (I) A asks, "Where's David's cup?"
 "DAVID JUICE CUP" D is looking for a cup.
 "THAT CUP" D points to a cup on the counter.
 "BIG BAT" D gets a big block and swings it like a bat.
 "DADDY ROOM" A asks, "Where are the balls?"
 "BOTH CAN" A says, "Bring one can."
 "DADDY RACKET" 2X D has his father's tennis balls and looks around the room.
 "TENNIS BALL" 3X D is holding the tennis balls.
 "ONE TENNIS BALL" D takes a ball out of the can.
 "BALL IN" D puts a ball into the can.
 "TENNIS RACKET" D looks around the room while holding the balls.
 "DADDY ROOM" A asks, "Where's the racket?"
 "FUSSY CAT" 5X D gets a stuffed cat from the crib.
 "RIGHT THERE" D puts a cat on the table.
 "BIG ANNIE" (I) A says, "I see a big Annie."
 "BIG ONE" D is having trouble taking a ball out of the can.
 "ANOTHER ONE" D puts a second ball in the oven.
 "MAIL MAN" (I) A says, "I see the mailman."
 "POLICE CAR" 2X A asks, "What did the taxi hit?"
 "A RIDE" A asks, "Where are the children going?"

DAVID N.

SESSION +10 CONTINUED

"ONE MINUTE" (I) A says, "Wait one minute." D is dragging A into the kitchen.

"PIECE CLAY" D finds a piece of clay on the floor.

"BLACK BOARD" A asks, "Where are you going to write?"

"PIECE CHALK" D is writing on the black board.

"BIG BALL" 2X D gives A clay. A had been making balls from the clay.

"FOUR BALL" (I) A says, "You have four balls."

"RED BALL" (I) A says, "It's a red ball."

"BLUE ONE" (I) A says, "I'll make a blue one."

"BLUE BALL" (I) A says, "You make a blue ball."

"MORE MORE CLAY" D finds the clay bag.

"MORE IN IT" D looks into the clay bag.

"TENNIS RACKET" 2X D is looking around the room holding the balls.

"CLAY BALL" (I) 3X A says, "Here's a clay ball."

"RUBBER BALL" (I) A says, "It's a rubber ball."

"BUNNY RABBIT" 6X Said while A is making a rabbit out of clay.

"LONG NECK" (I) A says, "It will have a long neck."

"MORE CLAY" (I) A says, "We need more clay."

"BUNNY EITHER" (I) A says, "Don't give it to me from the bunny either." Said after D took clay off of clay animal.

"ANOTHER ONE" (I) A says, "Here's another one."

"TAPE RECORDER" (I) A says, "Don't touch the tape recorder."

"PIECE CLAY" (I) A says, "David, pick up that piece of clay."

"GIRAFFE AWAY" D gives A the giraffe.

"MORE AWAY" D gives some clay to A.

"ANOTHER HIPPO" (I) A says, "And another hippo."

"THAT ONE" D puts a boy in the toy bus.

"JUICE CUP" (I) A says, "Pick up your juice cup." D does not.

"RIGHT BACK" (I) A leaves the room saying, "I'll be right back."

"UP STAIRS" 3X A asks, "Where is M?"

"DOWN STAIRS" 4X A asks, "Where did you say M is?"

"LITTLE PIECE" (I) A says, "There's a little piece."

"ONE PIECE" 4X D grabs a piece of clay from A.

"CLAY BALL" D finds a clay ball on the floor.

"FEW MINUTES" (I) A says, "We're going downstairs in a few minutes."

GROUP II:

SV: "MAN DOING" (I) A points to a picture and asks, "What's the man doing?"

SC: "BALL HERE" A asks, "Where are the balls?"

"DADDY SKY" D watches his father throw a ball up.

VC: "READ MITZI" D brings over the book about Mitzi.

"READ IT" 2X D brings over a book.

"HANG IT" D holds up his picture.

"SIT DOWN" 3X As D sits down on the bed.

"GROW UP" 2X D points to his plant.

DAVID N.

SESSION +10 CONTINUED

"SIT DOWN" 5X D to A.
 "HELP ME" 2X D can't reach the balls.
 "GET IN" 3X D puts balls in a can.
 "HAVE IT" D reaches for gum on the kitchen counter.
 "WANT MORE" D gives A more clay for balls.
 "GIVE IT" A is holding D's juice.
 "WANT IT" A says, "Put the bird away."
 "BROKE IT" (I) D pulls cat's tail off. A says, "Oh, you broke it."

GROUP III:

SSV:

SSC:

VVC:

SVV:

SCC:

VCC:

"HAND HIGH UP" D holds up his picture.

"HELP ME DADDY ROOM" D to A while D drags a chair into his father's
room."GIVE ME ONE" (I) A says, "Give me one ball."

GROUP IV"

SSVV:

SSCC:

VVCC:

GROUP V.

SVC: "ME DO IT"

EXPLIC+ _____: "BYE SODA" D finishes drinking his soda.

Q+ _____:

NEG+ _____:

INDETERMINATE: "MORE READ" A puts a book down. D wants A to read more.

DAVID N.

SESSION +11

DUMMY+ _____: "x ME" D and A were looking at a picture of duck swimming. D said, "Duck swim," " Me," "Me swim."
 "x SKY" D throws a ball up.

REDUPLICATED _____: "SLEEP SLEEP" (I) D and A are reading a book.
 A says, "Here's a boy going to sleep."
 "HORSIE HORSIE" D points to a horse picture.
 "DADDY DADDY" D runs to his father in the other room.
 "TIGER TIGER" D is looking at a picture of a tiger.

EMPTY FORM: _____:

GROUP I:

SS: "THE BABIES" D sees a picture of babies being bathed by their mothers. A asks, "Who's getting a bath?"
 "MY HOUSE" The block house that D had built fell down.
 "THAT BOOK" (I) A asks, "Where does that book go?" D doesn't put it away.

VV: "SEE GO" After A winds up a toy truck.
 "LET GO" D releases a little wind up truck.

CC: "OUT BOOK" D grabs a book from the shelf.
 "MORE GUM" D to A who is holding gum.
 "TIGER BOOK" D gives A a book.
 "SAIL BOAT" A points to a picture of a sail boat.
 "BUNNY RABBIT" 2X D points to a picture of a rabbit.
 "SIX LITTLE BUNNY RABBITS" D points to a picture of a mother rabbit and several babies.
 "UP THERE" A asks, "Where are you going to sit?" D gets on the table.
 "BABY ANIMAL BOOK" D is holding a book. A asks, "What book is that?"
 "LOTS THEM" (I) A says, "There are lots of them." A refers to a picture of baby lambs.
 "BABY HORSIE" (I) A says, "It's a baby horse."
 "PUSSY CAT" A asks, "Who is in the carriage?"
 "ANOTHER BOOK" D gets another book from the shelf.
 "STREET BOOK" D gets the Sesame Street book.
 "NUMBER THREE" D is looking at a page of three items.
 "NUMBER TWO" D is looking at a page of two items.
 "TWO MEN" 2X D points to a picture of two men.
 "TWO BALL" 2X D points to a picture of three balls.
 "THREE BALLS" (I) A says, "It's really three balls." D had said that there were two balls.
 "THIS ROOM" D grabs his father's hand and drags him into bedroom.
 "THAT BOOK" 2X D takes a book off the shelf and gives it to his father.
 "MORE SODA" D to A while standing in the kitchen. D is holding an empty juice cup.

DAVID N.

SESSION +11 CONTINUED

"ICE TOO" D holds out his cup of soda to A.
 "OTHER ROOM" (I) A says, "Daddy is in the other room."
 "UP THERE" D is reaching up onto the big table to get a truck.
 "ALL OUT" (I) D has the block box. A asks, "Can you get them all out?"
 "MORE BOAT" D looks out the window to the river.
 "MORE BOAT OUTSIDE" D points out the window.
 "NICE LETTER" D picks up a block with a letter on it.
 "TALL HEAD" (I) A referring to a block says, "It's as tall as your head."
 "ALL OUT" 2X D takes all the blocks out of the box.
 "OUT WAY" D pushes things off the table.
 "AWAY RECORDER" D pushes recorder off the shelf.
 "THAT TRUCK" A asks, "What do you want?" D points.
 "OTHER TRUCK" (I) A says, "You're putting one truck on the other truck."
 "A BOOK" D gets a book from the shelf.
 "THIS BOOK" D gets a book.
 "BABY HORSE" (I) A referring to a picture says, "It's a baby horse."
 "N'OTHER HORSE" D is looking at a picture of two horses.
 "MORE COW" 2X D sees a picture of a cow.
 "IN WINDOW" D catches his finger in the window.
 "NOTHER ONE" D points to a picture of another chick.
 "BUNNY RABBIT" 3X D points to a picture of a rabbit.
 "OUT WAY" (I) A is caught in the corner of the room and says, "Let me get out of the way."
 "ZEBRA BODY" (I) A says, "That's the zebra's body."
 "MORE GUM" D holds out hand to A.
 "MORE SODA" D gets his cup and goes into kitchen.
 "ALL OUT" 2X D takes the blocks out of the truck.
 "UP BED" A asks, "Do you want to sit on the chair or the bed?"
 "THIS BOOK" (I) A says, "Let's look at this book."
 "THE SKY" (I) A says, "The balloon goes up in the sky."
 "UP SKY" D points to a picture of a flying airplane.
 "THAT WAY" As D turns the page of a book.
 "THIS BOOK" D hands A a book to read.
 "MORE MONEY" D wants Dad to give him more money. Dad had given D two pennies.
 "ANOTHER PENNY" D to his father. D's hand is outstretched.
 "OTHER GIRAFFE" (I) A points to a picture and says, "Find the other giraffe."
 "OTHER MONKEY" (I) A says, "Get the other monkey." D does not.
 "PINK FISH" (I) A says, "I see a pink fish."
 "ANCHOR ON" 2X (I) A says, "Tie the anchor on."

DAVID N.

SESSION +11 CONTINUED

GROUP II:

- SV: "PETER LOOK" D shows Peter the tape recorder.
 "HANNAH GOING" As M goes out of the house.
 "DUCK SWIM" D sees a picture of ducks swimming.
 "ME SWIM" After D sees a picture of ducks swimming.
 "DAD COME" D gets his father from the other room.
 "SODA TASTE" A asks, "How does the soda taste?" D sips the soda.
 "SODA BREAK" D to his father while looking at the glass. The glass is not broken.
- SC: "TRUCK STUCK" A truck hits a block and stops moving.
 "THAT BOOK" D is holding a book. A asks, "What's that?"
 "THIS INSIDE" D points to several blocks inside a toy truck. A asks, "Where are the blocks?"
 "THAT TALL" D is holding a large block.
 "BLOCK TALL" D is holding a large block.
 "BLOCK BLOCK WINDOW" D points to several blocks on the window sill.
 "THAT COCKADOODLE" D points to a rooster.
 "THAT MORE" 2X A points to a boat full of animals saying, "That boat has lots of animals." D grabs the ark which has more animals in it.
 "THAT TOWER" D sees a picture of a tower in a book.
 "THAT DOCTOR" D sees a picture of a doctor.
 "HERE PENNY" D holds out a penny to A.
- VC: "LOOK THAT" D to A pointing to gum.
 "READ THAT" D gives A a book.
 "SIT DOWN" 2X D to A. D is sitting, A is standing.
 "READ IT" 13X D gives A various books.
 "WANT BOOK" D reaches up on the shelf for a book.
 "GET DOWN" D is standing on a chair and trying to get a book.
 "HAVE GUM" 3X D to A. D sees the gum on the table.
 "CHEW GUM" D has some gum in his mouth.
 "CHEW IT" D has some gum in his mouth.
 "WANT MORE" D swallows his gum. D to A.
 "LIE DOWN" D walks over to the bed and points. A asks, "What about the bed?"
 "SEE HORSIE" D points to a picture of a horse.
 "SIT DOWN" As D sits on a chair.
 "EAT FLOWERS" D sees a picture of a lamb eating flowers.
 "EAT SHOE" D sees a picture of a dog eating a shoe.
 "EATING SHOE" D sees a picture of a dog eating a shoe.
 "SIT DOWN" D to A. A is standing.
 "SWIM WATER" D sees a picture of a duck swimming in the water.
 "SWIM TOO" D points to a second duck swimming.
 "BUILD CASTLES" (I) A asks, "Did you build sand castles?"
 "SEE BOAT" 3X D points out the window.
 "COME IN" 4X D's father is standing in the doorway. D to his father.
 "BOUNCING BALLS" D sees a picture of a man bouncing balls.
 "READ BOOK" D hands a book to A.

DAVID N.

SESSION +11 CONTINUED

"WANT DADDY" 2X D to A after Dad left the room.
 "WANT DRINK" D to A.
 "WANT SODA" D to A after A asks, "Do you want juice?"
 "HAVE SODA" After A gives D soda.
 "HAVE SOME" D is holding a glass of soda.
 "SIT DOWN" As D sits down.
 "PICK UP" 2X D lifts a toy house.
 "GET SODA" D finishes his soda and goes back into kitchen.
 "TASTE IT" D drinks his soda.
 "RIDE BOAT" 2X A asks, "Did you take an airplane or a boat?"
 "NEED SODA" D to A after D finished his second glass of soda.
 "FIND IT" (I) D is looking for an apple. A says, "Go find it."
 "WANT DRINK" D to A.
 "WASH IT" 5X D soils a doll's dress.
 "EAT IT" D takes a carrot from the refrigerator.
 "WIND IT" 3X D holds out a wind up truck to A.
 "WIND AGAIN" 3X D gives A the wind up truck.
 "GET IT" 3X The wind up truck moves away from D.
 "GO NOW" D lets go of the wind up truck.
 "MAKE NOISE" D hears a car honk outside.
 "PLAY HOUSE" A asked, "What do you want to play?"
 "PULL STRING" As D pulls the puppet's string.
 "DO THAT" D starts the wind up truck.
 "GET IN" D sees a picture of a horse outside of his corral.
 "CAUGHT FINGER" D catches a finger in the window.
 "SEE CARROT" D sees a picture of a rabbit eating a carrot.
 "SEE DOG" D sees a picture of a dog.
 "STAND UP" D makes toy bunny stand up.
 "PUT DOWN" D puts the bunny down.
 "JUMP OFF" D is standing on the window sill.
 "READ IT" 4X D gives A a book.
 "WANT MOMMY" D to A.
 "GET MONEY" 3X (I) A says, "I'll get money."
 "NEED IT" 2X D is holding the pennies that A gave him.

GROUP III:

SSV: "BUNNY RABBIT FALL" A toy bunny falls down.
 SSC:
 VVC:
 SVV:
 SCC: "THIS THE ONE" D grabs a particular book and gives it to A. A had asked, "Which one should I read?"
 "DAVID IN SAILBOAT" A asked, "Who is in the sailboat?"
 "GIRL ON SWING" D sees a picture of a girl on a swing.
 "THERE ONE THAT OUT THERE" A is holding a glass of soda. D refers to the fact that there is more soda in the kitchen.
 "TRUCK UP THERE" D points to the shelf.

DAVID N.

SESSION +11 CONTINUED

"GIRL RIDE BOAT"
 "DADDY SEE SODA"
 "DAD GAVE ME"
 "IT GO THERE"
 "TAXI MAKE NOISE OUTSIDE"
 "TRUCK TRUCK FELL OFF"
 "DONNA GAVE ME"
 "HORSIE GET IN"
 "DONKEY GO HEE HAW"
 "DUCK COME IN WATER"
 "BUNNY RABBIT EAT CARROT"
 "DAVID EAT CARROT" (I)
 "BUNNY RABBIT FALL DOWN"
 "DAD HAS SOME" 2X
 "HANNAH COME BACK"
 "DAVID WANT SODA"
 "DAVID WANT ICE"
 "DAVID FOUND GUM"
 "DAVID FOUND MORE GUM"
 "ANDRYA PUT DOWN"
 "THAT GO THERE"
 "I FINISHED IT"
 "I FINISHED SODA"
 "DAVID HAVE SODA"
 "DAVID HAVE THEM"
 "DAVID TURN PAGE"
 "BEE EAT FLOWER" 2X
 "DAVID SEE CAT"
 "DAVID SEE IT"
 "ANDRYA TURN IT"
 "DAVID NEED MORE MONEY"
 "ANDRYA GET IT OUT"
 "ANDRYA GET OUT"
 "DAVID SEE NOTHER ONE"
 "ANDRYA STAND UP"
 "ANDRYA SIT DOWN HERE"
 "ZEBRA NEED BODY"

EXPLIC+ _____ : "HI TEDDY" D gets his teddy bear.

Q+ _____ : "WHERE GOING" D to M as she leaves.

NEG+ _____ : "NO SILLY" A says, "David is silly."
 "CAN'T DO IT" D couldn't spin a top.
 "CAN'T TURN IT" D couldn't spin a top.

DAVID N.

SESSION +11 CONTINUED

INDETERMINATE: "BILLY BROWN READ IT" D to M. D wants M to read a book
called Billy Brown.
"NOTHER ONE CHICK" D points to another chick.
"SEE IT FISH" D points to a fish.
"NOTHER ONE BOOK" D gets a book.
"READ IT BOOK" D wants A to read a book.
"ANOTHER ONE PINK FISH" D finds a second pink fish.
"NOTHER ONE MONEY" D wants more pennies.

APPENDIX VIII

GUIDELINES FOR THE ANALYSIS OF CHILD UTTERANCES
ACCORDING TO GRAMMATICAL RELATIONS

The semantic intent of each utterance is determined on the basis of three types of disambiguating situational information:

1. the preceding adult utterances
2. the child's utterances immediately following the utterance under analysis
3. the non-linguistic context

Adult Utterances

1. In the case where the child imitates the preceding adult utterance the child's utterance is assumed to express the same grammatical relations as the adult form.

"BIG BALL" (CC) The examiner and Lisa are playing ball.

The examiner says, "Get the big ball."

2. In a child's response to an adult question in which the child supplies the requested information, the child's utterance is considered to express the same grammatical relations as the requested information in the adult question.

"DESK IN" (SC) The examiner asks Danielle, "Where is the desk?" The desk was in the doll house at the time.

Child Utterances

In certain cases the child's utterances which immediately follow

the utterance under analysis disambiguate the grammatical relations expressed.

"MOMMY BEADS OUT" (SCC) Danielle is taking beads out of a box then Danielle hands the box to her mother. Followed by, "Mommy take beads out."

Non-Linguistic Context

Subject

1. The child observes an act or event which he did not initiate and his utterance specifies the initiator.

"ROCKING CHAIR" (SS) Marjorie walks by the rocking chair and it bumps her in the eye.

2. The child commits an act and specifies himself as the actor.

"DANIELLE MONEY" (SC) Danielle takes the examiner's pen-nies from the examiner's purse.

3. The child commits an act but comments on the situation resulting from the act rather than commenting on the act itself.

"MOMMY RIDE" (SV) Greg puts the mother doll on a toy horse and then turns to the examiner making this statement.

Verb

1. The child comments on an action that he or someone else initiated.

"GO SLEEP" (VV) Emily puts several dolls into the doll bed.

2. The child expresses a state of being or desire.

"WANT IT" (VC) Lisa pulls a chain off the examiner's neck.

Complement

1. The child's utterance specifies who or what was acted upon or desired.

"PUSH TRAY" (VC) Emily is pushing on the high chair tray.

"WANT WATER" (VC) David N. reaches up to the sink.
2. The child's utterance specifies the time that an act occurred.

"GO NOW" (VC) David N. winds up a truck and lets go of it.
3. The child's utterance specifies location in relation to an act.

"RIDE IN WATER" (VCC) Greg puts a toy fish into the sink filled with water.
4. The child's utterance specifies the manner in which an act occurred.

"GROW TALL" (VC) David N. points to a plant in his room.
5. The child's utterance specifies numerosity in relation to an action.

"STUCK AGAIN" (VC) David S.'s motorcycle gets stuck in the kitchen for the third time.
6. The child's utterance specifies an attribute of the acted upon component.

"OTHER SOCK" (CC) Lisa is wearing one sock and gets another one from her room.

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