

THE ACQUISITION OF ENGLISH VERB MORPHOLOGY
BY NONNATIVE SPEAKERS

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ABSTRACT

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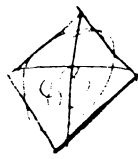
By

Edward Eugene Heckler

This study of the acquisition of English grammar by non-native speakers was based on both transformational and structural viewpoints. The transformational viewpoint provided the theory of language acquisition and the theory of English grammar while the structural viewpoint provided the testing and the analytical methodologies. The model for the present study was the psycholinguistic research study on English morphology done by Jean Berko in 1958 on native English-speaking children.

A modification and expansion of Berko's study and of other similar studies, the present study consisted of three tests, each with seventy items: an oral productive test, a written productive test, and a written receptive test. For each verb structure being tested, a pair of questions was included, one with a nonsense word and one with a real word. Thirty-six foreign students studying English at Michigan State University served as the subjects.

Twelve of them spoke Arabic as their native language; twelve spoke Japanese; twelve spoke Spanish. Each of these language groups was



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composed of four beginners, four intermediates, and four advanced students.

Several patterns emerged from the study. The level of a student's proficiency in English gave a good indication of his performance; thus advanced students gave the most correct responses; the beginners, the fewest. The native language also gave an indication of performance as the data showed an ascending Spanish-Arab-Japanese order in the number of correct responses. More correct responses were found on the written tests than on the oral test. Nonnative speakers tended to learn the structures of English verb morphology in a nonrandomized order: the infinitive (to MV) was acquired earlier than the gerund (ing MV); tense (past), before tense (present s); the en of passive, before the be; the en of perfect, before the have; and the be of progressive, before the ing. Of the structures that can follow a modal, MV and be were acquired before have. For present s, /s/ and /z/ allomorphs were acquired before /Iz/; for past, and for en of perfect /t/ and /d/ allomorphs were acquired before /Id/.

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INTRODUCTION

Studies concerning the acquisition of language comprise two main areas of investigation: those on a child's acquisition of his native language and those on second or foreign language acquisition. In general,

research in foreign language learning is based on behaviorist, structural linguistic theories, while most of the work in child language acquisition stems from concepts and hypotheses drawn from the rationalist, transformational framework.

(Falk 1974: 5)

Child language studies usually provide a descriptive analysis of the acquisition process with little or no consideration being given to any pedagogical implication. Second language studies, on the other hand, are generally undertaken in order to improve classroom instruction.

Because of these differing theoretical bases and interests, research studies remain relatively dichotomized; consequently, insights gained in one area remain unnoticed by scholars working in the other. While differences do exist between the learning of one's native language and the learning of a foreign language, information gained by investigating one field may be "of relevance" to the other (Natalicio 1969: 9). A comparison of relevant data in both areas may result in a clearer understanding of the language learning process. Only a few studies (e.g., Natalicio 1969, Martinez-Bernal 1972) have tried to bridge this gap. By using

child language methodology, the present study of second language acquisition will be another attempt to bridge it.

The Transformational Theory of Native
or First Language Acquisition

Of all the phases of child development, the learning of language has traditionally attracted most attention because of the complexity of language and the apparent ease and swiftness of learning.

(Carroll 1961: 331)

Such "apparent ease and swiftness" in learning "the complexity of language" has interested psycholinguists greatly. In recent years they have conducted longitudinal studies on child language acquisition, some of which have lasted for several years. The children generally are not over seven years old because after this age they have mastered for the most part the phonology and the grammar of the native language. After tape-recording and analyzing the data, the psycholinguists construct a descriptive grammar of each child's language.

One of the psycholinguists' goals has been the formulation of an accurate, detailed model of language acquisition. One current theory of language acquisition, the transformationalist one, will serve as the model for this study. The following ideas comprise the basic transformational model:

1. language acquisition is species specific;
2. language acquisition is biologically determined and, hence, innate; and
3. a universal, maturational pattern of acquisition occurs.

The capacity for language acquisition remains a species-specific characteristic of homo sapiens; only man can acquire language. Most animals have developed systems of communication, some of them extremely complex. But none of these systems represent even "primitive stages of human communication" (Lenneberg 1964: 71). Recent experiments with Washoe and other chimpanzees may require new definitions of species-specificity (see Linden 1974).

Being species-specific, the capacity for language acquisition is biologically determined. Lenneberg (1967a: 394) states that

the processes by which the realized, outer structure of a natural language comes about are deeply-rooted, species-specific, innate properties of man's biological nature.

Language acquisition, an "innate" property of man, consequently, cannot be culturally learned behavior; the environment plays no critical role in language learning except in the selection of the specific language being learned.

If the language had to be "learned" from the environment, the physically handicapped and the mentally retarded would likely be unable to acquire more than the most "primitive stages of human communication." But this is not true. The congenitally blind acquire language nearly as well as the average person, and the congenitally deaf, despite extreme physical disability, can master reading, writing, and even sign language. Intelligence has little bearing on language development since even the mentally retarded acquire language:

Children whose IQ is 50 at age 12 and about 30 at age 20 are completely in possession of language though their articulation may be poor and an occasional grammatical mistake may occur.

(Lenneberg 1964: 80)

Finally, according to the transformationalist theory, a universal, maturational pattern occurs in language development in every culture.

All the evidence suggests that the capacities for speech production and related aspects of language acquisition develop according to built-in biological schedules. They appear when the time is ripe and not until then, when a state of . . . "resonance" exists. The child somehow becomes "excited," in phase with the environment, so that the sounds he hears and has been hearing all along suddenly acquire a peculiar prominence.

(Lenneberg 1967b: 8)

Children in every culture throughout the world appear to be endowed with this state of "resonance," which is so necessary for the acquisition of language. This state generally lasts from the second to the twelfth year of life.¹ After that time "progress in language development usually ceases" (Lenneberg 1967b: 9).

Child language data suggest that language learning occurs in certain stages. Many linguists have agreed on the general order in which the sounds are acquired; for example, /p/ and /m/ are nearly always acquired before /d/ (see Carroll, 1961, Smith and Miller 1966, McNeill 1970).

Linguists have begun establishing the stages of grammatical development. Two such stages are the holophrastic and the

¹Arnold Gesell (1941) in Wolf Child and Human Child documented the language difficulties that confronted Kamala, the "wolf" girl who missed the early years of this critical state of "resonance."

telegraphic stages. Before his first birthday a child usually utters single, meaningful words like /mama/ and /dada/. Before this time, the child's utterances have been random, meaningless cries and sounds. Since these utterances are now meaningful, language acquisition may be said to have begun. During the holophrastic stage, a one-word utterance indicates a thought; "dog," for instance, may mean "Do you see the dog?" Before his second birthday, a child will form two-word sentences such as "see dog" to express the same thought. This stage in which a few words express a thought is called the telegraphic stage.

The Acquisition of a Second Language

The present study concerns the acquisition of English by second-language learners, not bilingual learners.

By "second language acquisition" we mean the acquisition of another language after having acquired the basics of the first, whereas "bilingual acquisition" is the acquisition of two languages simultaneously.

(Dulay and Burt 1972: 235)

The second language may be called the target language to differentiate it from the native or primary language, the "mother tongue" that has been learned first.

Children often learn a target language with relative ease.

Most parents who have lived abroad have marveled at how easily their children pick up a foreign language, and perhaps have wondered about their child's unusual talent. Many children, without the benefit of formal classroom instruction, learn the language of a new country in the first year they are there.

(Dulay and Burt 1972: 235)

Although children may learn a foreign language with remarkable ease, their parents do not. Lenneberg (1967a: 176) states that

most individuals of average intelligence are able to learn a second language after the beginning of their second decade, although the incidence of "language-learning-blocks" rapidly increases after puberty. Also automatic acquisition from mere exposure to a given language seems to disappear after this age, and foreign languages have to be taught and learned through a conscious and labored effort. Foreign accents cannot be overcome easily after puberty. However, a person can learn to communicate in a foreign language at the age of forty.

At this point a weakness in the transformationalist model arises: if the state of "^{2, 12}resonance" is indeed critical to the language-learning process, no adult would theoretically be able to learn a second language but, as Lenneberg says, an adult can with "conscious" effort. Lenneberg (1967a: 176) tries to explain away this seeming contradiction of fact and theory by saying:

This does not trouble our basic hypothesis on age limitations because we may assume that the cerebral organization for language learning as such has taken place during childhood, and since natural languages tend to resemble one another in many fundamental aspects . . . the matrix for language skills is present.

Although plausible, this does not seem, a priori, any more convincing than the behaviorists' explanation.

Carroll (1971: 109), while agreeing "in some measure" with the transformationalist model, offers a behaviorist explanation:

The evidence for a "critical period" and a decline in language acquisition ability during the middle school years is not strong, however, and even if there is some decline, I am not persuaded that one must appeal to biology to explain it. An alternative hypothesis about this decline is that it is due to the consolidation of the habits established in primary language acquisition and their interference with the acquisition of new habits. Further, it may

be that the large individual differences in foreign language aptitude that can be observed reflect individual differences in the rate of this decline.

Carroll stresses the difficulty of acquiring new language habits after the establishment of the first ones. Other explanations can be given. Possibly the state of "resonance" remains critical only for first language learning. This puzzling problem of adult language learning clearly indicates the need for additional research.

Besides possible age limitations, other differences exist in the learning of a target language. The second language learner is exposed to a smaller amount of carefully controlled linguistic data while the child is exposed to a larger amount of generally uncontrolled data, some of which may include nonsense words and "nonsentences" (e.g., Tabakowska 1969: 47-8). In addition, in second language learning

- (i) the individual's cognitive development is at a later and more advanced stage;
 - (ii) he is already in possession of the grammatical structures of a language . . .
 - (iii) he already possesses concepts and meanings.
- (Jakobovits 1968: 269)

Other factors playing a role in second language learning include the learner's motivation, his general language aptitude, his previous language learning experience, the status of the native and the target languages, the usefulness of the target language in communication, and the method of instruction (see Weinreich 1970: 3-4, 72-80; Lambert 1972: 160-96).

The theory of contrastive analysis states that the second language learner will

tend to use his native language structures in his second language speech, and where structures in his first language (L1) and his second language (L2) differ, he will goof. For example, in Spanish, subjects are often dropped, so Spanish children learning English should tend to say Wants Miss Jones for He wants Miss Jones.

(Dulay and Burt 1972: 236)

In short, there is interference, "the use of elements from one language while speaking or writing another" (Mackey 1965: 239). This usually occurs during the acquisition of a target language.

Three kinds of interference exist: (1) phonological, (2) syntactic, and (3) lexical. Phonological interference often consists of under-differentiation of phonemes. A Japanese speaker, for example, may pronounce both the /r/ and the /l/ in English the same; he under-differentiates these two English phonemes. In Japanese these two sounds are nondistinctive (i.e., allophonic) but in English they are distinctive (i.e., phonemic).

Syntactic interference often results in incorrect word order in the target language as this example shows:

A German speaker says in English this woman loves the man on the model of German diese Frau liebt der Mann, intending to communicate the message "the man loves this woman," but producing the opposite effect.

(Weinreich 1970: 37)

Errors of verb tense, subject-verb agreement, and idiomatic usages of prepositions may also occur.

Lexical interference usually involves the inappropriate transferral of a word from the native to the target language; for example, a German speaker, substituting Fleisch for meat, may say, "My Fleisch (or flesh) is cold." Native words may be mistakenly identified; for instance, a nonnative German speaker, seeing some

German goods labeled "DIE DEUTSCHEN WAREN FÜR INDIA," translated it as "The Germans were for India" instead of the more appropriate "German goods for India" (Kelly 1969: 225).²

To minimize such possible interference, drills based on the distinctive contrasts in phonology and syntax of the native and the target languages are often implemented in the classroom. But native language interference may not create as many problems for the second language learner as has often been assumed. Jakobovits (1969: 65) notes that similarities in the native and the target languages may result in "positive transfer" and a speeding up of the language learning process; this does not rule out, a priori, interference from dissimilar elements. Recently some researchers have questioned the usefulness of instruction based on the theory of contrastive analysis. They believe this theory "inadequate, theoretically and practically, to predict the interference problems of a language learner" in the area of syntax (Whitman and Jackson 1972: 40). They do not rule out the possibility that contrastive analysis may prove useful for phonology. Additional research is needed to establish more accurately the extent of interference in second language learning.

Concluding Remarks

This present study of the learning of English verb morphology by 36 nonnative speakers is based on both transformational

²See also Weinreich (1970: 7-71) for a detailed analysis of interference.

and structural viewpoints. The transformational viewpoint provides a theoretical model of language acquisition and a theoretical model of English grammar while the structural viewpoint provides testing and analytical methodologies. Serving as the model for the present investigation, the psycholinguistic research study on English morphology done by Jean Berko in 1958 is deeply rooted in transformational theory, but it utilizes a basically structural testing methodology. By this rather unorthodox joining of two competing theories, the present investigation of second language learning will, hopefully, reveal new insights about the language-learning process.

CHAPTER I

THE RELATED LITERATURE

The Berko Study

According to Noam Chomsky (1970: 43) and the other transformationalists,

a grammar is not a description of the performance of the speaker, but rather of his linguistic competence . . . a description of competence and a description of performance are different things.

By competence Chomsky means the unconscious, internalized knowledge of the phonological, morphological, syntactic, and lexical rules of a language. Performance denotes the use of this internalized knowledge. Measuring this competence is difficult since "a direct description" of a child's "actual verbal output" reveals only performance.

If anything far-reaching and real is to be discovered about the actual grammar of the child, then rather devious kinds of observations of his performance . . . in many different kinds of circumstance will have to be obtained . . . to determine . . . his underlying linguistic competence at each stage of development.

(Chomsky 1970: 44)

One such "devious" observation of performance was conducted by Jean Berko. Investigating the acquisition of English morphology by native English-speaking children, Berko (1958: 150) stated the rationale underlying her research:

. . . we undertake to discover the psychological status of a certain kind of linguistic description. It is evident that the acquisition of language is more than the storing up of rehearsed utterances, since we are all able to say what we have never before heard. In bringing descriptive linguistics to the study of language acquisition, we hope to gain knowledge of the systems and patterns used by the speaker.

Berko, in other words, wanted to ascertain the children's unconscious knowledge of English morphology.

On her test Berko asked her subjects to inflect correctly several nonsense words. Berko (1958: 150) defended her use of these nonsense words by arguing:

. . . if the subject can supply the correct plural ending, for instance, to a noun we have made up, he has internalized a working system of the plural allomorphs in English, and is able to generalize to new cases and select the right form. If a child knows that the plural of witch is witches, he may simply have memorized the plural form. If, however, he tells us that the plural of *gutch is *gutches, we have evidence that he actually knows, albeit unconsciously, one of those rules which the descriptive linguist, too, would set forth in his grammar.

Of the morphological inflections that occur in English, Berko tested for the plural and the possessive of the noun, the comparative and the superlative of the adjective, the third person singular of the present tense, the past tense, the progressive, and the derivational suffixes -er (as in *zibber) and -let (as in *wuglet).

The allomorphs of the noun plural morpheme, the possessive morpheme, and the third-person-singular present-tense morpheme are /Izʒʒs/. They occur in these environments:

/Iz/ occurs after stems ending in the sibilants /č ʃ s z š ž/ as in buzzes and wishes;

/z/ occurs after stems ending in vowels or the voiced consonants /b d g ɖ m n ŋ l r/ as in robs and skis;

/s/ occurs after stems ending with the voiceless consonants /p t k θ f/ as in gyps and sits.

These allomorphs are phonologically conditioned; that is, the allomorph is chosen on the basis of the phonological environment (i.e., the final sound of the stem). The rules are regular and predictable.

Some of the allomorphs of the past tense morpheme are phonologically conditioned. The phonologically conditioned allomorphs of the past tense /Idvdvt/ occur in these environments:

/Id/ occurs after stems ending in /t d/ as in wanted and guided;

/d/ occurs after stems ending in vowels or the voiced consonants /b g j ɖ v z ʒ m n ŋ l r/ as in dined and snowed;

/t/ occurs after stems ending in the voiceless consonants /p k c θ f s ʃ/ as in gasped and fished.

These allomorphs form the so-called "weak" or regular verbs in English.

Allomorphs of the past tense morpheme may be morphologically conditioned; that is, the allomorph is not chosen on the basis of the phonological environment of the stem. These so-called "strong" or irregular verbs like rang and swam must be memorized individually since the final sound of the uninflected stem provides no clue to the past tense allomorph. While adult native

speakers have unconsciously internalized the rules for phonologically conditioned allomorphs, they have only acquired the morphologically conditioned ones by a conscious memorization of individual allomorphs.

Berko's psycholinguistic testing procedure was simple. The examiner showed the child a picture of a cartoonlike character performing a certain act and then asked for a one-word oral response to statements about the picture. The examiner, for example, showed the picture of a man dangling an object on a string and told the child:

This is a man who knows how to bod.
 He is bodding. He did the same thing yesterday.
 What did he do yesterday? Yesterday he _____.
 (Berko 1958: 156)

A response like bodded indicated the child had internalized the grammar rules but a response like bod revealed the lack of such internalization. All responses were written down in phonemic notation and recorded on tape. Later the tape was replayed to verify the accuracy of the notation.

Berko's preschoolers and first graders showed "consistency, regularity, and simplicity" in their acquisition of English morphology:

Where they provided inflexional endings, their best performance was with those forms that are the most regular and have the fewest variants. With the morphemes that have several allomorphs, they could handle forms calling for the most common of those allomorphs long before they could deal with allomorphs that appear in a limited distribution range.
 (Berko 1958: 176-7)

The progressive morpheme ing was the most consistently learned verb morpheme.¹ Testing for the /Iz/ present tense allomorph, Berko discovered that only half of the children used it. The other half gave uninflected forms. Of the three past tense allomorphs, the children responded more accurately with /t/ and /d/ than with /Id/. If they gave any of these allomorphs as the answer, they usually used it appropriately. They occasionally gave progressive forms (e.g., was ricking) for the simple past (e.g., ricked). They gave uninflected forms (e.g., rick), too. For the irregular past morpheme of ring no preschooler and only a few first graders gave rang; most gave the phonologically conditioned ringed. Among nouns and possessives /s/ and /z/ allomorphs were better learned than /Iz/. The children gave many uninflected forms, too. Three rare, inappropriate inflections occurred: /hifiz/, /gəʔs/ and /kaeʔs/ (Berko 1958: 162-3).

Other Berko-Type Studies

Berko's psycholinguistic study of child language acquisition pioneered the way for later studies of competence. In a Berko-type study of the acquisition of English morphology Bellamy and Bellamy (1970) tested 160 school-age children from kindergarten through the fourth grade. Their productive phase of testing

¹ Berko (1958: 157) supplied be in her one progressive item:

This is a man who knows how to zib.

What is he doing? He is _____.

In subsequent discussions of the data for progressive in other studies, be was included for each test item unless it is noted otherwise.

consisted of two tasks: a forward formation task like Berko's in which the child was asked to generate an inflected form of an uninflected word and a backward formation task (not in Berko) in which the child was asked to either generate the uninflected form of an inflected word or to provide a different inflected form.

In the comprehension phase the child was asked which picture best fitted a supplied inflected nonsense form. Second, shown one picture, he was asked which of two inflected nonsense words best described that picture.

(Bellamy and Bellamy 1970: 202)

The Bellamys' data indicated that the /s/ and the /z/ allomorphs of the plural, the possessive, and the present tense morphemes were mastered before the /Iz/ allomorphs. The /s/ and the /z/ allomorphs were learned at the same rate except in the one backward formation task involving present tense in which the kindergarteners and first graders experienced more difficulty with /s/ than /z/. In backward formation tasks most children formed the progressive more easily for past tense verbs inflected with /Id/ than for those inflected with /t/ and /d/. No overall pattern resulted for either the progressive or the past tense in forward formation tasks. In the comprehension phase the data indicated a late mastery of many tasks:

. . . morphological inflection comprehension does not seem to outstrip production by as far as one might expect. At about age eight children seem to be sensitized to morphological inflections and then seem to make rapid progress in mastering both comprehensional and productional tasks at about the same time. This concurrent mastery does not fit the pattern usually found in language development.

(Bellamy and Bellamy 1970: 210-1)

This late mastery of comprehension tasks appeared most evident in the past tense tasks which proved to be too difficult for even

the fourth graders who had, nevertheless, performed well on all other comprehension tasks.

In a Berko-type study of twenty preschool children Foley and Locke (1971) noted the late acquisition of the past tense. They found statistically "nonsignificant differences" in the relationship between the child's knowledge of phonological rules and his knowledge of morphological rules. They found "nonsignificant differences" in "the relationship between phonological competence and performance" (Foley and Locke 1971: 261).

A Berko-type morphophonemic study by Baird (1973: 229) suggested that "the principles governing use of the inflectional endings are re-learned within each morpheme." He investigated the children's acquisition of the phonological rule covering the plural, the possessive, and the present tense morphemes (i.e., the rule for the /s/, /z/, and /Iz/ allomorphs).²

Baird tested the validity of the hypothesis that a child's internalization and mastery of a phonological rule for one morpheme meant the simultaneous internalization and mastery of this rule in all cases, including those involving other morphemes. According to this hypothesis, if a child knew the phonological rule for the plural allomorphs, he then knew this same rule for both the possessive and the present tense allomorphs. Baird's findings did not support this view. His data showed that the child's mastery

²Baird found the following kinds of errors: uninflected forms, sound substitutions (e.g., /tovz/ as the plural of /tof/), and rare inappropriate inflections (e.g., /gefIz/ and /pIvzIz/) (personal communication, 1974).

of the phonological rule for one morpheme (e.g., the plural) did not mean the simultaneous mastery of this rule in the case of other morphemes (e.g., the possessive and the present tense); instead, the child had to relearn the rule for each morpheme. Children do not generalize phonological rules across morpheme boundaries.

In addition to being given to middle class children, Berko-type tests have been given to the socially and the economically disadvantaged. Some educators such as Bereiter and Engelmann (1966: 41) contend that cultural deprivation, "a lack of those particular kinds of learning that are important for success in school," can be found in lower class children. Language deprivation represents one form of social deprivation:

Many disadvantaged children of preschool age come very close to the total lack of ability to use language as a device for acquiring and processing information.

(Bereiter and Engelmann 1966: 39)

Linguists refute this idea of language deprivation; they say the real issue is dialectal differences (see Williams 1971).

Shriner and Miner (1968) administered to 25 culturally advantaged and 25 culturally disadvantaged preschool children a test consisting of a productive part like Berko's and a receptive part on noun plurals. Mental age was controlled. Although only some allomorphs of the plural, the present tense, and the past tense morphemes were included as test items, Shriner and Miner's data revealed no statistically significant difference in the use of English morphological rules between the two groups.

In a study of 145 kindergarteners from rural Florida Vogel (1970) investigated the morphological competence of white

and black children. Using a slightly modified Berko test, Vogel (1970: 52) concluded:

Significant differences were found that were attributed to the variables of intelligence and of race. No significant difference was found that could be attributed to the variable of sex alone. In analyzing interaction effects, significant differences were found between and among all variables--intelligence, race, and sex.

Among verb allomorphs the kindergarteners learned /z/ before /Iz/ and /d/ before /Id/. They gave nonstandard responses more often for the verbs than for the nouns. Their most common nonstandard response was the uninflected form of an inflected word. In 35 out of 38 group tabulations the black children answered with the uninflected form more often than the whites did. Both male and female white children gave a standard response more often than did their male and female black counterparts. These differences in responses among the blacks and the whites resulted because of dialectal differences. Whereas standard English regularly adds inflectional endings to denote the present and the past morphemes, black English often does not. Except for a brief comment, Vogel failed to explore this possibility of dialectal differences.

Several shortcomings in the Vogel study sharply reduce the number of generalizations that can be made from it. The most noticeable weakness concerns her data charts. Having classified all responses as either standard or nonstandard, Vogel recorded them by sex and race in charts in the appendix. All responses were recorded in standard orthography, but Vogel did not indicate how she had transcribed the variant allomorphs of a single morpheme. Apparently she listed those responses with the correct

allomorph as standard responses and all others as nonstandard but the reader cannot be certain. Her notation should have been made clearer by use of phonemic transcription or the inclusion of commentary concerning her answers in standard orthography.

In her discussion of the data, Vogel made an erroneous statement about the past tense allomorph of one nonsense verb and, thereby, added to the confusion concerning her data transcription. Vogel (1970: 57) stated:

Two items (8, 10) are in the language category requiring, in linguistic symbols, the allomorph /əd/, and four are in the category requiring /-d/, after stems ending in voiced sounds.

Careful analysis of her test items and charts reveals that she included rick /rɪk/ as one of the four nonsense verbs taking /d/. But rick should take /t/, not /d/, since its stem ends in a voiceless stop. Vogel, though, never stated that any verb on the test required /t/. Rick appeared in the Berko (1958: 164-5) study in which a high percentage of children, 73% in fact, inflected it with /t/. Berko reported no instance of /d/ with rick. Vogel never directly stated which allomorph the children used with rick but her earlier comment referred to /d/. Clearly, /rɪkt/, not /rɪkd/, is the standard response.

One nonstandard response, ricket, points to a possible variant past tense allomorph, either /t/ or more likely /ɪt/, which would be a variant of /ɪd/ (Vogel 1970: 89). If this is a variant pronunciation of the past tense allomorph, Vogel should have noted that the word was inflected for past tense but an

inappropriate allomorph was used. Vogel never indicated such a possibility.

Vogel, at times, failed to discuss her results as thoroughly as she might have; e.g., she failed to comment about ricket as a possible past tense variant form. Even more clearly, bing-ed, given as the nonstandard response by 2.9% of the white females for the past tense of bing, represents the use of /Id/ (Vogel 1970: 96). Or is it /d/? Another possible past tense response, bang, was given by 4.7% of the black males and 6.2% of the black females (Vogel 1970: 97). Bang could be patterned after the ring-rang-rung paradigm. Berko (1958: 165) indicated an awareness of this possibility:

Adults clearly felt the pull of the irregular pattern, and 50% of them said *bang or *bung for the past tense of *bing, while 75% made *gling into *glang or *glung in the past. Only one child of the 86 interviewed on these items said *bang. One also said *glang.

At one point Vogel (1970: 56) was vague when she commented on "the nuances of verb tense formation" concerning spow.

A 1973 study by Ramer and Rees explored dialect differences of blacks and whites. They administered the Berko test, with modifications, to black children ranging in age from five to fifteen years in several preschool, kindergarten, first grade, fifth grade, and eighth grade classes in the New York City schools. For each morphology item on the test, the dialects of standard American English and black English use different morphemes. Ramer and Rees (1973: 575-6) learned that

for the morphemes examined, the black children of low socioeconomic background in the population of this study know and use the rules of morphological construction of both black English and standard American English. As the children grow in age and maturity, they demonstrate increased use of standard American English forms, but in no case in this study did even the oldest group, the eighth-graders, use any of these forms to the exclusion of the alternate black English forms.

These children knew /s/ and /z/ present allomorphs better than /Iz/ and they knew the /d/ past allomorph better than either the /t/ or the /Id/ forms. They used black English forms more frequently in the present tense than in the past. First graders who showed a slightly greater use of black English forms in the past tense (68% to 61.5% in the present) proved to be the only exception to this trend (Ramer and Rees 1973: 572).

Berko-type tests have been given to the physically handicapped and the mentally retarded. One study by Goodglass and Berko (1960) of the language acquisition by agrammatic and nonagrammatic aphasics revealed an order of learning differing from the normal one. As previous studies have indicated, nonaphasic subjects experienced the most difficulty with /Iz/ and /Id/. The aphasics, in contrast, were more influenced by "grammatical function" than phonology (Goodglass and Berko 1960: 266). For the possessive and the present tense inflections, they tended to respond more accurately with /s/ or /z/ than /Iz/ but for these same three allomorphs of the plural they showed essentially no difference in learning. On past tense items the aphasics, in contrast to nonaphasic children, performed slightly better on inflected verbs with /Id/ than those with /t/ or /d/.

Cooper (1967), in a comparison of deaf and hearing females, found the progressive less well learned than the 1958 Berko study had indicated. But, like Berko, he found past tense inflections better learned than present tense ones. On the receptive part both deaf and hearing females knew the /s/ present allomorph better than the /Iz/; however, the hearing females correctly produced /s/ 1% of the time more often than /Iz/, whereas the deaf correctly produced /Iz/ 7% of the time more often than /s/ (Cooper 1967: 83).

The language acquisition of the mentally retarded has been studied by several researchers (Newfield and Schlanger 1968, Dever and Gardner 1970, Dever 1972, and Lovell and Bradbury 1971). In a study containing both real and nonsense words Newfield and Schlanger (1968) concluded that normal subjects showed marked superiority over the mentally retarded in the rate of morphological acquisition, but all subjects tended to acquire the inflections in the same order. Both groups responded better to real words than to nonsense syllables. Items of verb morphology revealed the greatest significant differences in the performance of normal and retarded subjects. Both tended to learn /t/ and /d/ before /Id/. The retarded, however, scored 23% correct for /Id/ items involving real words but only 17% on /d/ ones (Newfield and Schlanger 1968: 698). The normal subjects excelled most noticeably over the retarded in the areas of the morphologically conditioned past tense (rang, sang) and the /d/ allomorph. The mentally retarded scored low on items requiring /Iz/, the only present tense allomorph on

the test. Overall, the Newfield and Schlanger results paralleled those of Berko (1958).

Dever and Gardner (1970) studied two groups of educable mentally retarded boys. One group, the MRMA, was paired with the normal boys on the basis of mental age while the other group, the MRCA, was paired with the normal boys on the basis of chronological age. The normal boys consistently surpassed both the MRMA's and the MRCA's in the number of correct responses. The MRMA's outdid the MRCA's on many items, especially those for /Id/ and rang.

Research conducted by Lovell and Bradbury (1971) on educationally subnormal special school children generally supported the findings of Berko, Newfield and Schlanger, and Dever and Gardner. The progressive was learned early; /t/ and /d/ were acquired before /Id/; and /Iz/ was learned very late. Correct responses to real words occurred more frequently than those to nonsense words. The subnormal and retarded did not score as well as normal subjects.

Other Berko-type studies have been carried out. Investigating the acquisition of plurals by children, Anisfeld and Tucker (1967), Koziol (1971), and Graves and Koziol (1971) learned that /s/ and /z/ plural allomorphs were acquired before /Iz/. Investigating plural stem endings, Solomon (1972: 50) found that

the phonetic characteristics of the stem endings at least partially determine whether young children will inflect them correctly. For example, children tend to omit inflections altogether on stems ending in fricatives or affricates, regardless of which allomorph would be appropriate for the stem.

Children experienced difficulty adding either the /s/ to /θ/ and /f/ stems or the /z/ to /d/ and /ŋ/ stems. No conclusions could be reached concerning /Iz/.

Kernan and Blount (1966) used Berko's methodology to study the acquisition of Spanish noun and verb inflections by Mexican children. Because of vast differences in inflections in the English and Spanish languages, their data do not necessarily illuminate the acquisition of English morphology. The Kernan and Blount study, however, can be useful in comparative studies of the acquisition of the first and the second languages by Spanish speakers.

Of all researches using the Berko methodology, only three concern the acquisition of English morphology by non-English speakers. Natalicio (1969), Johnson (1974), and Martinez-Bernal (1972) studied the acquisition of English morphology by Spanish speaking bilinguals. Natalicio tested 144 students in the first, second, third, and tenth grades in San Antonio (Texas) schools; one-half of her sample were native English speakers and the other half were native Spanish speakers. Aptitude and socioeconomic status were controlled. Modifying Natalicio's test and testing procedure, Johnson tested 147 Spanish-English bilinguals in the third, sixth, eighth, and tenth grades in San Antonio schools. Martinez-Bernal tested her bilingual students ranging in age from five to eight years old in the kindergarten, the first, and the second grade classes of schools in Tucson, Arizona. All Martinez-Bernal's sample were enrolled in a bilingual-bicultural program, but no

monolingual English speakers learning Spanish were included in the testing. Both Natalicio and Martinez-Bernal concluded that Spanish speakers tended to learn English plural allomorphs in the same order that native speakers did. Johnson, however, noted several problems (such as devoicing and null endings) that make any analysis of plural allomorphs extremely difficult.

Natalicio and Johnson restricted their studies to nouns, but Martinez-Bernal tested for both nouns and verbs. Martinez-Bernal (1972: 127) found the order of the acquisition of English verb morphology among bilinguals to be the following: /s/ and /z/ present allomorphs are acquired first at a 40% accuracy-in-response rate; then /t/ and /d/ past allomorphs at 30%; the progressive at 23%; the /Id/ past allomorph at 18%; and the /Iz/ present allomorph at 9%. Both /s/ and /z/ plural and possessive allomorphs received higher accuracy scores than those for any verb inflection.

Martinez-Bernal's evidence for present progressive contrasted sharply with that of the 1958 Berko study. Attempting to clarify this discrepancy, Martinez-Bernal admitted her data on the progressive resulted from a flaw in the test question. To such a question as:

The boy knows how to dap.
What is he doing right now?

the children sometimes gave the response daping without any form of the verb be. Since it directly answered the question, daping did not necessarily indicate that the children omitted be in their normal conversation. This one-word answer was ambiguous.

After several children gave this response, Martinez-Bernal (1972: 120, 127) changed her question by adding a pronoun:

The boy knows how to dap.
What is he doing right now? He _____.

With the revised question no ambiguity exists; the pronoun in the test item requires a form of be in the response. Since Martinez-Bernal counted all daping responses as incorrect, her figures on the progressive most likely reflect too low a score of those children who knew this morpheme.

The role of interference in target language learning was discussed in all three studies. Finding only a little interference, Natalicio (1969: 157) stated:

Since our data failed to provide any support for predictions derived from the contrastive analysis of Spanish and English in terms of such notions as "interference" and different types of "transfer," we find little justification for their continued use, at least as regards plural formation in English.

Johnson (1974: 119-20), however, disagreed:

interference does play an important role in native Spanish speakers' performance in plural formation . . . and in any case, study 1's [i.e., Natalicio's] discussion of interference is misleading in not offering a distinction between phonological and syntactic interference.

Martinez-Bernal (1972: ii) noted a minimal amount of interference:

Interlingual interference was found to be present in 2.7 percent of all the responses. Of this, 2.5 percent was interference of Spanish in English, and 2.9 percent was interference of English in Spanish.

The matter of interference, thus, remains unresolved.

Both Natalicio and Martinez-Bernal support the transformationalist theory of a universal, maturational pattern of language

acquisition. As supportive of Lenneberg's theory of "specific periods of language development," Natalicio (1969: 159-60) cited the fact that her tenth graders failed to show "a markedly better performance" than her third graders. Likewise, Martinez-Bernal (1972: 186) pointed to

the striking similarity of order of ease (and therefore probable order of acquisition) of comparable items in Spanish and English morphology

by bilingual children as additional evidence strengthening "developmental theories of language acquisition."

Although suggesting a pattern of language development, these studies involve carefully controlled test statements in an artificial situation. In a comparison of the results of a revised version of Berko's test with the free speech of mentally retarded children, Dever (1972: 173) concluded:

. . . the test responses did not do a good job of predicting errors or the lack of errors in the free speech of the subjects participating in this experiment.

In free speech the children rarely used an incorrect inflection. While useful in indicating which inflections the children knew, the Berko test failed to predict the occurrence or nonoccurrence of morphological errors in free speech. The greatest correlation between test scores and free speech occurred for the progressive, the irregular past, and the /z/ present allomorph. Real lexical items predicted errors slightly better than nonsense ones.

Longitudinal Studies

Dever's experiment raises questions about the extent to which Berko-type data reflect the actual order of acquisition of

morphological inflections in the spontaneous, natural speech of young children. Several longitudinal studies help provide an answer. Weir (1962), analyzing the pre-sleep monologues of a two-and-a-half-year old child, found evidence supporting Berko's conclusions. For plural and possessive inflections, Weir's young subject used /s/ and /z/ more often than /Iz/. He used the progressive morpheme the most frequently of all the verb inflections, although sometimes without a form of be. Past tense came next, followed by third person singular present tense.

Studying the language development of several monolingual children, Ervin (1964) reached the same conclusion regarding noun plurals. Her subjects, moreover, inflected irregular nouns according to the rules of phonological conditioning (e.g., foots for feet; mans for men) (1964: 175). They also failed to produce the syllabic /Id/ past tense allomorph with any regularity. Ervin's subjects produced the past tense of some irregular verbs (e.g., came) before they produced any regular past tense (e.g., walked) (1964: 178). This early learning of irregular past tense morphemes was due most likely to their extremely frequent usage in adult speech. Once an awareness of the regular past tense inflections developed, the children overregularized the irregular verbs by adding regular endings for past tense; their free speech revealed such linguistic creations as breaked, buyed, comed, and doed (1964: 178-9). Discussing this phenomenon, Ervin (1964: 178) wrote:

The odd, and to me, astonishing thing is that these extensions occurred in some cases before the child had produced any other regular past tense forms.

Cazden (1968), reporting on the acquisition of inflections by three children over a five-year span, noted the learning of the plural allomorphs before the possessive ones by two of her subjects; the third child acquired both simultaneously. Among verbs, the criterion of 90% accurate usage was reached first for present progressive. Cazden found no clear trend for the acquisition of the present and past tenses since her subjects acquired them in a different order.

Menyuk (1969) grouped the inflectional errors of nursery school children, kindergarteners, and first graders into three categories: (1) omission errors, (2) substitution errors, and (3) redundancy errors. Errors of omission involve the use of no inflection (zero allomorph) as in he talk for he talks. Substitution errors refer to the use of phonologically conditioned allomorphs for morphologically conditioned allomorphs, e.g., mans (plural), catched (past), and havez (present) (1969: 60-1). The use of more than one inflection is termed a redundancy; words like /laIktId/³ for liked, /kemId/ for came, and /gozIz/ for goes

³Berko (1958: 165) noted one redundant answer on her test, the response /spozd/ as the past of /spo/. In this case the present /z/ allomorph occurs, too. Baird (personal communication) noted two redundant responses on his test: /wəgIŋz/ with the present /z/ allomorph added to the progressive /Iŋ/ and /plvzIz/ with both /z/ and /Iz/.

illustrate the error of redundancy (1969: 60-1).⁴ Menyuk's sample usually committed errors of omission.

In summary, both the Berko-type studies and the longitudinal ones indicate a sequential learning of the English inflections by children. Morphological inflections seem to be acquired in a non-randomized, non-simultaneous order. While not unanimous in their conclusions, these investigations strongly indicate a mastery of the regular noun plural rules before those involving the possessives. The present progressive of verb inflections is learned first, followed by regular past tense inflections, and then the present tense ones. The /s/ and /z/ allomorphs are acquired before the /Iz/ and the /t/ and /d/ allomorphs are learned before the /Id/. Such a developmental pattern of morphology learning is not incompatible with the transformational theory of language acquisition.

⁴The redundancy /kemId/ is especially unusual since it involves the use of the wrong past allomorph after /m/.

CHAPTER II

THE EXPERIMENTAL DESIGN

Limitations of Berko's Study

Certain limitations and omissions in procedure and test construction can be found in Berko's pioneering psycholinguistic research methodology. Aware of these limitations, several later researchers (Shriner and Miner, 1968, Natalicio and Natalicio 1969, Bellamy and Bellamy 1970, among others) made changes in Berko's work to avoid its shortcomings. Only those limitations of relevance to the present study will be enumerated.

Anisfeld and Tucker (1967: 1203) noted that Berko tested for productive control of the morphological rules but not for receptive control. While the children were required to inflect nonsense words with appropriate inflections, they were never given an opportunity to choose the answer. Anisfeld and Tucker (1967: 1204) also indicated Berko's test items contained "an unequal distribution of the three allomorphs" which "precludes making all possible error comparisons." Of the three present tense allomorphs, for instance, Berko included in her study two nonsense words, loodge and naz, for /Iz/ but none for either /s/ or /z/.

Natalicio and Natalicio (1969: 207) expressed dissatisfaction with Berko's selection of subjects "based solely on the availability of Ss . . . in the particular schools used for the

research," the only criterion being "(1) preschooler and (2) first-grader"; "the sample," thus, "was one of convenience." Such variables as sex, IQ, and socioeconomic status were not controlled.

The Natalicios noted that Berko's subjects may not have accurately perceived all stimuli, thus precluding an accurate evaluation of all responses. Because of "the occurrence of unfamiliar phonemes in the stimulus" or because of the similarity of distinctive features in some phonemes (e.g., /θ/ and /f/), the subjects may have "confused" the sounds they heard:

Assuming the possibility of such perceptual confusions, let us suppose that a S is presented with a stimulus item *heaf (Berko 158), and is asked to provide the plural. According to Berko's discussion, if the S replied with either *heafs or *heaves . . . the plural response was considered correct. If, on the other hand, the S responded with *heaf (no ending) or *heafes, the plural response was considered incorrect (158). The question arises when a S provides a plural response of, for example, *heases. According to the adult sample criterion, this last would be judged incorrect as a plural for *heaf. But, was the singular stimulus actually *heaf? (Natalicio and Natalicio 1969: 210-1)

Besides possible perceptual confusion resulting from an inaccurate hearing of the nonsense words, some of Berko's children may have been unable to produce some phonemes correctly even if they had accurately perceived them. This inability may have resulted from a physiological disability or an incompletely developed phonological system. It would be possible to learn whether this was the case by requesting the subjects to repeat the nonsense stimulus (see Anisfeld and Tucker 1967).

None of the above limitations necessarily invalidate the results of Berko's investigation; they do, however, point out the

difficulty involved in data interpretation and sharply delimit any generalization concerning the results. Overall, though, the Berko methodology remains a useful tool in measuring linguistic competence.

The Experimental Design

A modification and expansion of Berko's work, the present experimental study was restricted to the acquisition of verb morphology. To be more precise, this study mainly concerned the acquisition of the English verb auxiliary by second language learners. It consisted of three tests, each with seventy items. The first test, which measured oral productive ability, was patterned very closely after Berko's methodology. While the student looked at the picture of a brightly colored cartoon figure performing a certain task, the examiner read a statement about the cartoon illustration and requested the student to fill in a missing blank with a one-word response. The examiner, for example, showed a picture of a man hitting a drum with sticks. The examiner pronounced the nonsense word as it first appeared in the statement and asked the student to repeat it. If the student pronounced it incorrectly the first time, this procedure was repeated, several times if necessary, until either the student gave the desired word or further effort seemed unproductive. Pronunciation difficulties and deviant responses were written down. After it had been determined whether or not the student could repeat the nonsense word, the whole statement was read as in:

This man zicks very hard.
 He has to do it every week.
 What must he do next week?
 Next week he must _____ very hard.

Each statement was usually repeated twice. On some occasions, at the insistence of the student, it was repeated more often.

Such a procedure, however, was not followed for questions like:

The boy can klant the house.
 In other words, the house can _____ klanted by the boy.

Here the student was not asked to make a verbal repetition since no form of the main verb was the correct answer. A form of be could have been given to the student but this would have provided a clue to the answer; giving the student this clue would make it more difficult to determine what he actually knew. Whenever the answer was to or a form of be or have, no repetition to determine pronunciation was requested of the student. If a form of the main verb was the answer, the earlier procedure involving the word repetition was carried out.

Since test one concerned oral productive ability, all cues were given verbally. None of the words appeared in writing on the pictures themselves. Berko, in contrast, apparently printed her test statements on the cards. In the present study all responses to the oral test were written down in phonemic notation and the entire oral test was taped on a Panasonic tape recorder. Later each tape was replayed to determine the accuracy of the phonemic notation. During this oral test the examiner tested each student individually. The oral productive test was given so that each

student's pronunciation might be studied, especially as it concerned the allomorphs of the present and the past tenses. No written test could provide such direct data. This oral test provided an opportunity to test the student's listening comprehension, too.

While the Berko investigation studied only oral productive ability, the present one also included a written productive test. After the oral test had been administered, the written productive test was given. The seventy items on this second test matched those on the oral test in grammatical structure: different verbs were used on the second test to prevent memorization of first-test items and to reduce monotony in the wording of questions. This second time the student wrote a one-word response in the appropriate blank in each test item but he saw no pictures illustrating the statements.

After this written productive test was completed, a written receptive test was administered. Once again key words were changed but grammatical structures remained the same. On this test the student was asked to choose the correct answer out of four possibilities, as this item shows:

The woman is tooging the bridge.
 The girl also wants to _____ the bridge.
 a. tooge b. tooges c. tooged d. tooging¹

While nearly all of the previous Berko-type studies focused attention on the acquisition of noun morphology, especially that of

¹See Appendix A, which lists all test items on all three tests.

the plural allomorphs, the present study focuses its attention exclusively and more extensively on the acquisition of verb morphology. This apparent lack of interest in the English verb system reflected in previous research studies likely results from the complexity of the verb system; the English noun morphological system, in contrast, is relatively simple.

A study by Martinez-Bernal (1972: 96) showed that children found no problem in using nonsense words "except for some puzzlement at first by the concept of an imaginary verb." Part of this puzzlement certainly was caused by the difficulty of assigning meaning to a nonsense verb. This difficulty became apparent during the construction of our test. While nonsense words are mere creations, they do have "varying degrees of meaningfulness" (Shriner and Miner 1968: 609). All morphological inflections occurring in the sentence and the syntactic pattern of the sentence itself help provide some of this meaningfulness.

Berko (1958: 151) chose not to create any nonsense pronouns because of the difficulty involved in making up a nonsense pronoun, and because the pronouns are so few in number and so irregular that we would hardly expect even adults to have any generalized rules for the handling of new pronouns. Moreover, we do not encounter new pronouns, whereas new verbs, adjectives, and nouns constantly appear in our vocabularies.

In our study, likewise, no nonsense verbs were created to parallel the modals, the forms of be, and the forms of have. In the

terminology of C. C. Fries, these are "function words," words that one must know as items.² Substitutes will not work.

Of the 27 items on Berko's test, all except three were nonsense words. The noun glass and the verbs ring and melt were the only real words on her test. In our study one real word was included for each nonsense word. For each allomorph and each structure being investigated, our test included a pair of questions, one with a nonsense word and one with a real word. The vocabulary on the test was limited to the first 2,000 most common words in English as found in Thorndike and Lorge's The Teacher's Word Book of 30,000 Words (1944). TV, the only word on the test not in this frequency range, certainly is a common word today whereas it was not in 1944, the time of the frequency count.

The present study differed from earlier studies in the type of morphemes being tested. All others dealt almost exclusively with the acquisition of the inflectional morpheme, that is, an ending added to the stem of the word to express a particular grammatical relationship as the -ed of hooked and the -ing of swimming. No inflectional morpheme can stand by itself as a free morpheme, that is, an independent word. It must, instead, be attached to another base or a free morpheme. An inflectional

²See Fries, The Structure of English, 1952, Chapter VI. See, for example, Fries's illustrations on page 108.

"The boy was given the money.

The boy had given the money.

The boy vab given the money."

And, of course, the transformational formula for Aux includes the items have, be (no substitutes) and Modal (with only can, may, shall, will, and must substitutable).

morpheme, unable to stand alone, may be called a bound morpheme. Like most of those listed in chapter two, this study tested for the inflectional morphemes -s, -ing, and -ed. But, unlike the others, it also tested for the free morphemes to, have, and be (including inflectional forms been, being, is, and were).

Thirty-six students were selected for this experiment. While children served as the subjects in other studies, college students were used in this one. All were foreign students studying English at the English Language Center of Michigan State University during the spring term of 1974. Twelve of them spoke Arabic as their native language; twelve spoke Japanese; and twelve spoke Spanish. Each language group was composed of four beginners, four intermediates, and four advanced students. Each student was classified as either beginning, intermediate, or advanced in English solely on the basis of his composite score on three English proficiency tests administered by the English Language Center. Out of a total of 100 possible points, the beginners' composite scores ranged from 30 to 58, the intermediate students from 59 to 73, and the advanced students from 75 to 85. The score for each student reflected a cumulative score of three separate tests: one for aural comprehension, one for grammar, and one for composition. The experimental test was given to all students during April and May. Four native English-speaking college graduates served as the controls.

A preliminary version of the test was given to eight non-native speakers between February 26 and March 6 to determine any

problems foreign students might encounter with the testing procedure and to note any flaws in test questions. All students except one completed all three tests. These students were native speakers of Arabic, Chinese, Japanese, Korean, Portuguese, or Spanish; their proficiency in English ranged from the most rudimentary to extremely advanced. Their pretest responses indicated no particular difficulty in undertaking the task. All nonsense items on the oral test were pronounced to an Arabic, a Japanese and a Spanish speaker in order to determine if any were phonologically similar to real words in these three languages. If the speaker indicated the possibility of phonological similarity, the nonsense word was discarded. A few items were rearranged; for instance, sleep, the first item on the oral pretest, was replaced by cook; sleep was placed on the fill-in test since it seemed undesirable to start the first test with an irregular verb.

The Experimental Test

The present study tested the student's mastery of the auxiliary as stated in the phrase structure rule:—

Auxiliary —————→ Tense (Modal) (Perfect) (Progressive)
plus the main verb or MV, the simple form of the traditional main verb. The study was thus concerned with the ordered elements: Tense (Modal) (have+en) (be+ing) MV. In addition, this study included the passive transformation, which can be added as (be+en) at the end of the auxiliary in the above series:

Tense (Modal) (have+en) (be+ing) (be+en) MV.

This study tested for to and -ing (substitutions for tense) in what are commonly called the simple infinitive with to and the simple gerund. On the test the gerund appeared only after a preposition. Finally, the study included items testing the acquisition of the present and the past tense allomorphs. The particular transformational model of English grammar serving as the basis for this experiment is that given by Mark Lester (1971) in Introductory Transformational Grammar of English.

Tense

The lack of parentheses in the phrase structure rule indicates that tense occurs in every verb phrase (except where to or -ing replaces tense). Tense is never optional. "The meaning of tense is restricted to the present and past inflectional endings. Tense does not mean time" (Lester 1971: 52). Tense is rewritten as either present or past. Unlike Lester, here present is rewritten as -s or ∅, zero ending. As -s, ∅, or past, tense is always added to the first word, and only the first word, that follows it in the verb phrase sequence:

(Modal) (have+en) (be+ing) (be+en) MV.

The study tested for forms like those underlined below:³

³It is customary to "flip-flop" tense and the first element following it by a rule so that any inflectional ending added to the element follows it. The illustrations which follow do not indicate the "flip-flop."

TENSE	Perfect	Progressive	Passive	MV
1 pres s				ride→rides
2 pres ∅				ride→ride ✓
3 past				ride→rode ✓
4 past				jump→jumped ✓
5 pres s have+en				ride→has ridden ✓
6 past		be+ing		ride→was riding ✓
7 past			be+en	ride→was ridden
8 pres ∅ have+en		be+ing		ride→have been riding ✓
9 past have+en			be+en	ride→had been ridden
10 past		be+ing	be+en	ride→were being ridden

The study did not test for tense added to modal as in:

TENSE	Modal	Perfect	Progressive	Passive	MV
pres ∅	may				ride→may ride
past	may				ride→might ride

The variable meanings in the modals, past or present, made testing impractical.

Modal

This study tested for the simple, uninflected form of have, be, or MV which follows immediately after the modal:

Tense	MODAL	Perfect	Progressive	Passive	MV
1 pres ∅	may				ride→may ride
2 pres ∅	may	<u>have</u> +en			ride→may <u>have</u> ridden
3 past	may		<u>be</u> +ing		ride→might <u>be</u> riding
4 past	may			<u>be</u> +en	ride→might <u>be</u> ridden
5 pres ∅	may	<u>have</u> +en	be+ing		ride→may <u>have</u> been riding
6 pres ∅	may	<u>have</u> +en		be+en	ride→may <u>have</u> been ridden

The choice between have or be is dependent on recognizing the use of perfect, progressive, or passive. The choice is considered under those headings. Here recognizing that a simple form is required after a modal is the essential desideratum.

Perfect (Have+en)

The study tested for have of perfect (have+en) in the following structures:

<u>Tense</u>	<u>Modal</u>	<u>PERFECT</u>	<u>Progressive</u>	<u>Passive</u>	<u>MV</u>
x pres ∅		<u>have+en</u>			ride→have ridden *)
x past		<u>have+en</u>	be+ing		✓ride→ <u>had</u> been riding ✓
x pres s		<u>have+en</u>		be+en	✓ride→ <u>has</u> been ridden ✓
x pres ∅ may		<u>have+en</u>			✓ride→may <u>have</u> ridden ✓
x pres ∅ may		<u>have+en</u>	be+ing		✓ride→may <u>have</u> been riding ✓
x pres ∅ may		<u>have+en</u>		be+en	✓ride→may <u>have</u> been ridden ✓

It tested for en of perfect (have+en) in similar structures:

<u>Tense</u>	<u>Modal</u>	<u>PERFECT</u>	<u>Progressive</u>	<u>Passive</u>	<u>MV</u>
x pres ∅		<u>have+en</u>			ride→have ridden
✓ pres s		<u>have+en</u>	be+ing		ride→has <u>been</u> riding
x past		<u>have+en</u>		be+en	ride→had <u>been</u> ridden
x pres ∅ may		<u>have+en</u>			ride→may <u>have</u> ridden
x pres ∅ may		<u>have+en</u>	be+ing		ride→may <u>have</u> <u>been</u> riding
x pres ∅ may		<u>have+en</u>		be+en	ride→may <u>have</u> <u>been</u> ridden

Progressive (Be+ing)

The study tested for both be and ing of progressive (be+ing) in these structures:

<u>Tense</u>	<u>Modal</u>	<u>Perfect</u>	<u>PROGRESSIVE</u>	<u>Passive</u>	<u>MV</u>
past			be+ing		ride→were riding
past			be+ing	be+en	ride→was <u>being</u> ridden
x pres ∅ may			be+ing		ride→may <u>be</u> riding
x past		<u>have+en</u>	be+ing		ride→had <u>been</u> riding
x pres ∅ may		<u>have+en</u>	be+ing		ride→may <u>have</u> <u>been</u> riding
past			be+ing		ride→was riding
past			be+ing	be+en	ride→was <u>being</u> ridden
past may			be+ing		ride→might <u>be</u> riding
pres s		<u>have+en</u>	be+ing		ride→has <u>been</u> riding
pres ∅ may		<u>have+en</u>	be+ing		ride→may <u>have</u> <u>been</u> riding

Passive (Be+en)

The study tested for both be and en of passive (be+en) in these structures:

<u>Tense</u>	<u>Modal</u>	<u>Perfect</u>	<u>Progressive</u>	<u>PASSIVE</u>	<u>MV</u>
! past				<u>be+en</u>	ride→ were ridden
x past	may			<u>be+en</u>	ride→might <u>be</u> ridden
x pres s		have+en		<u>be+en</u>	ride→has <u>been</u> ridden
x past			be+ing	<u>be+en</u>	ride→was <u>being</u> ridden
x pres Ø	may	have+en		<u>be+en</u>	ride→may have <u>been</u> ridden
! pres Ø				<u>be+en</u>	ride→are ridden ✓
+ pres Ø	may			<u>be+en</u>	ride→may <u>be</u> ridden
+ past		have+en		<u>be+en</u>	ride→had <u>been</u> ridden
+ pres s			be+ing	<u>be+en</u>	ride→is <u>being</u> ridden
+ pres Ø	may	have+en		<u>be+en</u>	ride→may have <u>been</u> ridden

To MV

The study tested for the "sign of the infinitive" to, transformationally a replacement of tense, as well as the simple form of the MV that follows to:

<u>Tense Replacement</u>	<u>MV</u>
/	
<u>to</u>	ride→ <u>to</u> ride
<u>to</u>	<u>ride→to</u> <u>ride</u>

Ing MV

Finally, the study tested for the gerund (or ing form) after a preposition. Transformationally, this ing has replaced tense:

<u>Tense Replacement</u>	<u>MV</u>
/	
<u>ing</u>	ride→ <u>riding</u>

Test Items

For tense we used on each test 22 items such as:

This woman knows how to cook. She is cooking now.
She does it every day. Every day she _____.

and

This man knows how to jump. He is jumping now.
He did the same thing yesterday. Yesterday he _____.

All items on the oral and the written tests are listed in Appendix A.

To test for the uninflected form of have, be, or MV which comes after the modal, we included on each test 20 items like the following:

This man talks very well. He is talking now.
What can he do well? He can _____ well.

and

The man is cutting the tree.
He will cut another tree soon.
Soon another tree will _____ cut by the man.

We placed 28 items involving perfect (have+en) on each test.

Some sample items for have included:

The boy studied his lesson for three hours.
He lost all interest in the lesson.
He may _____ studied too long.

and

The man could not win the race.
He was sick and didn't run well;
Otherwise, the race would _____ been won by him.

We tested for en of perfect in items like:

This boy knows how to walk.
He has done it recently.
What has he done recently?
Recently he has ____*_____.

and

The man is rowing a boat now.
He has _____ rowing it since noon.

Some items fit more than one structure and are counted in both in our discussion of the results. For example, the following item tested for both en of perfect and be of passive:

The woman is opening the letters.
One has _____ opened before.

Similar overlaps occurred in items for tense plus perfect, progressive, or passive; modal plus perfect, progressive, or passive; perfect plus progressive; and progressive plus passive. In all such cases the item is considered under both structures.

Fourteen items for progressive (be+ing) were included on each test as illustrated by the following examples of be:

The girls water the flowers every afternoon.
What was happening to the flowers yesterday afternoon?
Yesterday afternoon the flowers _____ being watered.

and

The boy usually sails his boat at noon.
It is now noon.
He could _____ sailing his boat now.

and examples of ing such as:

The men smoke their pipes every day.
In fact, they were _____ their pipes yesterday.

and

The man is throwing the ball now.
What is happening to the ball?
The ball is _____ thrown by the man.

For passive (be+en) we put 14 items per test in the study.

Some tested for be:

The people are enjoying the music.
Most people enjoy the music.
The music _____ enjoyed by most people.

and

The girl saw a dead animal on the road.
The animal might have _____ hit by a car.

while others tested for en:

The woman picks flowers every day.
She did this yesterday.
Yesterday the flowers were _____ by the woman.

The infinitive (to+MV) included four items per test. Some tested for to:

The woman drives a car. It is fun.
What is fun? It is fun _____ drive a car.

Others tested for the MV:

The girl is riding a horse.
The boy also wants to _____ a horse.

For gerund (ing+MV), we used two items such as:

The boy eats the bad food.
He gets sick after _____ the food.

In summary, the test included items for the underlined elements in these structures:—

	<u>Tense</u>	<u>Modal</u>	<u>Perfect</u>	<u>Progressive</u>	<u>Passive</u>	<u>MV</u>
1	<u>pres s</u>					MV
2	<u>past</u>					MV
	tense	modal				MV
	tense	modal	<u>have+en</u>			MV ✓
	tense	modal	<u>have+en</u>	<u>be+ing</u>		MV
	tense	modal	<u>have+en</u>		<u>be+en</u>	MV
	tense	modal		<u>be+ing</u>		MV
	tense	modal			<u>be+en</u>	MV
	tense		<u>have+en</u>			MV ✓
	tense		<u>have+en</u>	<u>be+ing</u>		MV
	tense		<u>have+en</u>		<u>be+en</u>	MV
	tense			<u>be+ing</u>		MV
	tense			<u>be+ing</u>	<u>be+en</u>	MV
	tense				<u>be+en</u>	MV
	<u>to</u>					MV
	<u>ing</u>					MV

Limitations of the Experimental Design

Although numerous other researches have been useful in the design of this experiment, certain limitations do exist in our study and our psycholinguistic procedure. Because of a limited supply of available students, not as many variables could be controlled as had been originally planned. Sex, for instance, was not controlled: all students except an intermediate Japanese and an advanced Arab were males. Since findings from several earlier studies (see Berko 1958 and Vogel 1970) indicated no statistically significant difference in performance between males and females, control of the sex variable probably would not have affected our results significantly. Other variables not controlled included the age of the student, the amount of time that had passed since the student's arrival in the U.S., his previous study of English grammar, his individual language aptitude and the instructional methodology and textbooks used in the English Language Center classes at Michigan State University.

The time interval between the oral test and the written productive test and the time interval between the two written tests varied. A few students took all three tests the same day. Most took a few weeks to complete all three; in some instances, even more time elapsed. An interval of one month occurred between the time the first student took the oral test and the time the last one took it. Since this project involved the voluntary cooperation of the students during their free time outside of class, their desires concerning the test schedule had to be accommodated; a lag

of one month occurred, for example, between the time an intermediate Japanese speaker took his first and second tests. Scheduling conflicts arose. Since most students were only free at the same time, the testing took a longer time than had been expected. This happened partly because each oral test took approximately one hour for each student and only one examiner administered all the tests. The unfortunate but unavoidable time interval between the testing of students may have some significance but it does not necessarily invalidate our results.

The order of occurrence of the test items was not rigidly controlled. For the first six items of each test, the ordering of real and nonsense words followed this pattern: (1) real, (2) nonsense, (3) real, (4) nonsense, (5) nonsense, and (6) real. These first six items were restricted to three basic structures: (1) tense (present s) MV, (2) tense (past) MV, and (3) tense (present s) be+ing MV. Item seven always tested for tense (present s) have+en MV. All other items were put in a randomized order.

Improvements can be made in our test items since most of them have never been used before. Two nonsense words should be discarded: jafe should be discarded since several students gave answers such as /jevIŋ/ in which they converted the /f/ to /v/ on the analogy of knife, knives, and thus added a complexity to their answer; deese should be discarded since it occasionally was confused with does. The infinitival item which required to may have created confusion since it was so unlike the other answers. Some students experienced difficulty with those items taking be or have

instead of the main verb; this was especially noticeable for the first few items taking one of these forms. Although the directions stated that all answers should be one word only, multiple-word answers occurred relatively often. We found no easy solution to this but a careful rewording of certain items might help decrease the number of multiple word responses.

Finally, this study, like Berko's, failed to provide an equal distribution of test items. For most of the items a pair of questions appeared on each test. Because of an oversight during the construction of the test, the underlined parts of the following structures involving the modals were represented by two pairs of questions instead of the single pair customary for the other items:

<u>Tense</u>	<u>Modal</u>	<u>Perfect</u>	<u>Progressive</u>	<u>Passive</u>	<u>MV</u>
tense modal					<u>MV</u> (modals on the tests <u>can</u> and <u>must</u>)
tense modal	<u>have+en</u>				<u>MV</u> (<u>could</u> and <u>may</u>)
tense modal			<u>be+ing</u>		<u>MV</u> (<u>could</u> and <u>should</u>)
tense modal				<u>be+en</u>	<u>MV</u> (<u>can</u> and <u>will</u>)

On the other hand, some possible structures were not tested at all. The underlined parts of the following structures were not included in this study:

<u>Tense</u>	<u>Modal</u>	<u>Perfect</u>	<u>Progressive</u>	<u>Passive</u>	<u>MV</u>
<u>tense</u>		<u>have+en</u>			<u>MV</u>
<u>tense</u>			<u>be+ing</u>		<u>MV</u>
tense	modal	<u>have+en</u>			<u>MV</u>
tense	modal	<u>have+en</u>	<u>be+ing</u>		<u>MV</u>
tense	modal	<u>have+en</u>		<u>be+en</u>	<u>MV</u>
tense	modal		<u>be+ing</u>		<u>MV</u>
tense	modal			<u>be+en</u>	<u>MV</u>
tense		<u>have+en</u>	<u>be+ing</u>		<u>MV</u>
tense		<u>have+en</u>		<u>be+en</u>	<u>MV</u>
tense			<u>be+ing</u>	<u>be+en</u>	<u>MV</u>

These omitted items could not be added to the three tests, already too long with 70 items each. They might have been added by reducing the number of other structures. Despite limitations, the test offered the opportunity to measure the extent to which Arabic, Japanese, and Spanish speakers at Michigan State University have mastered the English verb system and to make comparisons of various kinds.

CHAPTER III

THE EXPERIMENTAL RESULTS

To simplify the complexities of the verb morphology data, the results will be discussed in this order:

- A. a right-wrong analysis of the responses
 - 1. the oral test
 - 2. the fill-in test
 - 3. the multiple-choice test
 - 4. the control group
- B. an analysis by level of English proficiency
- C. an analysis by native language.

The Oral Test

Tense

TABLE 1.--All Tense (Oral Test).

	Item Response ¹	No. Correct	% Correct
Present <u>s</u>	12-432	195	45%
Past	10-360	212	58%
All	22-792	407	51%

To put the figures into sentences, of the 432 responses given by nonnative speakers to 12 different test items for

¹The first number indicates the number of items; the second number indicates the number of responses.

present s on the oral test, 45% (195) are accurate. For past tense, 58% (212) of the 360 responses to 10 test items are correct. In all, 51% (407) of the 792 responses to the 22 test items are correct. Past (58%) is answered correctly more often than present s (45%). Data for tense in varying structures are presented next.

Tense (Present s)

For tense (present s) MV, the data show:

(GS 1)	<u>Item Response</u>	<u>No. Correct</u>	<u>% Correct</u>
	6-216	107	49%

As the figures indicate, 49% (107) of the responses are the correct present s form (e.g., zooks). Included in the wrong answers are:

- a. the uninflected verb (e.g., zook), here a so-called stimulus response² (21%, 46)³
- b. past tense (e.g., zooked) (3%, 7)
- c. multiword responses (12%, 27) such as stimulus response progressives (e.g., is zooking) 9%, 21); the stimulus response does it (1%, 4); and negative statements (e.g., doesn't klead) (.9%, 2)
- d. ing stimulus responses (e.g., zooking) (9%, 20).

Since the test instructions asked for one-word answers, all multi-word answers are regarded as incorrect (see The Allomorphs, p. 70).

²GS refers to grammatical structure. The exact repetition of any word or words in the test items (including nouns, pronouns, adjectives and adverbs) will be called a stimulus response. Most of these repetitions are verb forms. Occasionally, a stimulus response refers to a change in pronunciation which represents no grammatical change (e.g., a Japanese speaker repeated frool as froo).

³The first number in the parentheses indicates the percentage of the correct responses and the second one indicates the number of such responses.

For tense (present s) have+en be+ing MV, the data show:

(GS 2)	<u>Item Response</u>	<u>No. Correct</u>	<u>% Correct</u>
	2-72	30	41%

Of the 72 responses, 41% (30) are the correct has. Among the incorrect answers are:

- a. have (4%, 3)
- b. had (4%, 3)
- c. forms of be (16%, 12) including stimulus responses is and been
- d. stimulus responses (33%, 24) (e.g., building) including is and been.

The choice of has, have, or had, as opposed to be, involves the perfect, not tense (see GS 16).

For tense (present s) have+en be+en MV, the data show:

(GS 3)	<u>Item Response</u>	<u>No. Correct</u>	<u>% Correct</u>
	2-72	19	26%

The number of correct has responses (26%, 19) for present s perfect passive, compared to the number of correct responses for present s+MV and present s perfect progressive, declines noticeably (see GS 17). Wrong answers include:

- a. have (1%, 1)
- b. had (13%, 10)
- c. stimulus responses (including is) (e.g., jatted) (22%, 16)
- d. forms of be (including is) (26%, 19).

* For tense (present s) be+en MV, the data show:

(GS 4)	<u>Item Response</u>	<u>No. Correct</u>	<u>% Correct</u>
	2-72	39	54%

The 54% correct response for passive is higher than that for the other present s structures (see GS 29). Among the errors are:

- a. forms of be (including the stimulus response are) (18%, 13)
- b. stimulus responses (including are) (26%, 19)
- c. forms of have (2%, 2).

Tense (Past)

For tense (past) MV, the data show:

(GS 5)	<u>Item Response</u>	<u>No. Correct</u>	<u>% Correct</u>
	8-288	198	68%

The 68% correct response for past is markedly higher than that for present s (45%). Wrong answers include:

- a. two-word progressives (e.g., was tumping) (5%, 15)
- b. two-word passives (e.g., was hunted) (1%, 5)
- c. other multiwords (e.g., did smile) (1%, 3)
- d. uninflected stimulus responses (e.g., smile) (17%, 50)
- e. ing stimulus responses (e.g., hunting) (1%, 4).

For the 6 regular verbs, 66% (143) of the 216 responses show ed while 76% (55 out of 72) for sing and ming are correct.⁴ Thirty-three percent (12 out of 36) are sang and 44% (16) are sung. Of the correct ming responses, 69% (25 out of 36) are the regular minged while 5% (2) show the irregular mang. The data indicate that sing is generally inflected as an irregular verb and ming as a regular verb (see The Allomorphs, Past Tense, on page 70.)

For tense (past) be+ing be+en MV, the data show:

(GS 6)	<u>Item Response</u>	<u>No. Correct</u>	<u>% Correct</u>
	2-72	14	19%

⁴According to several recent dictionaries both sang and sung are acceptable as the past form of sing though many prefer sang. On this test both minged and mang are regarded as correct allomorphs for the past of ming. No student gave mung.

In this structure (progressive + passive) the 19% correct response contrasts with the 68% in the structure immediately above. Even if was answers (11%, 8) are added as correct, the figure remains low (30%). The students seem to be relatively unfamiliar with progressive + passive (see GS 24). Wrong answers include:

- a. stimulus responses (including was) (37%, 27)
- b. forms of have (9%, 7)
- c. forms of have+en and be (20%, 15).⁵

Modal

TABLE 2.--All Modal (Oral Test).

	Item Response	No. Correct	% Response
<u>Have</u>	8-288	48	16%
<u>Be</u>	8-288	145	50%
<u>MV</u>	4-144	103	71%
All	20-720	296	41%

An uninflected have, be, or MV follows a modal in a correctly formed verb phrase. The 50% correct answers for modal + be contrast notably with the 16% for modal + have.

Modal + MV

For tense modal MV, the data show:

(GS 7)	<u>Item Response</u>	<u>No. Correct</u>	<u>% Correct</u>
	4-144	103	71%

⁵In some cases the sum of the percentages of the individual items does not equal the total percentage since the division was only carried out to the second decimal point.

The 71% correctness here is notably greater than that for either modal + have (16%) or modal + be (50%). Errors include:

- a. s stimulus response (e.g., talks) (15%, 23)
- b. ing stimulus responses (e.g., talking) (5%, 8)
- c. multiword answers (e.g., be zicking, be going to zick (2%, 3).

Modal + Have

For tense modal have+en MV, the data show:

(GS 8)	<u>Item Response</u>	<u>No. Correct</u>	<u>% Correct</u>
	4-144	22	15%

As the figures indicate, modal + perfect provides markedly fewer correct answers than modal + progressive or modal + passive.

Included in the wrong answers are:

- a. other forms of have (5%, 8)
- b. be (24%, 35)
- c. stimulus responses (including not) (e.g., write) (19%, 28).

Here be answers surpass those with have (see GS 13).

For tense modal have+en be+ing MV, the data show:

(GS 9)	<u>Item Response</u>	<u>No. Correct</u>	<u>% Correct</u>
	2-72	14	19%

The 19% in this structure remains close to that directly above (perfect, no progressive) (see GS 14). Incorrect answers include:

- a. other forms of have (12%, 9)
- b. be (19%, 14)
- c. stimulus responses (e.g., watching) (18%, 13)
- d. not (8%, 6).

For tense modal have+en be+en MV, the data show:

(GS 10)	<u>Item Response</u>	<u>No. Correct</u>	<u>% Correct</u>
	2-72	12	16%

The structure perfect + passive causes no marked variation in the percentage of correct have answers (see GS 15). Wrong forms include:

- a. other forms of have (9%, 7)
- b. be (19%, 14)
- c. stimulus responses (excluding not) (27%, 20)
- d. not, a stimulus response (9%, 7).

Modal + Be

For tense modal be+ing MV, the data show:

(GS 11)	<u>Item Response</u>	<u>No. Correct</u>	<u>% Correct</u>
	4-144	58	40%

The correct response be is supplied in 40% (58) of the answers (see GS 23). Wrong forms include:

- a. been (1%, 2)
- b. have+en and be (5%, 8)
- c. stimulus responses (e.g., sailing) (25%, 36).

For tense modal be+en MV, the data show:

(GS 12)	<u>Item Response</u>	<u>No. Correct</u>	<u>% Correct</u>
	4-144	87	60%

Since the answer be is found in 60% of the responses, this passive structure is answered accurately 20% more often than the preceding progressive structure (see GS 30). Three groups account for most wrong responses:

- a. other forms of be (1%, 2)
- b. stimulus responses (e.g., started) (27%, 39)
- c. no responses (2%, 3).

Perfect (Have+en)

TABLE 3.--All Perfect (Oral Test).

	Item Response	No. Correct	% Correct
<u>Have</u>	12-432	97	22%
<u>en</u>	16-576	272	47%
All	28-1008	369	36%

The 47% correct en responses as opposed to the 22% has responses apparently reflect the fact that the same past participle may occur after both have and be in legitimate structures, while there is a choice between have and be before a past participle.

Have

For tense modal have+en MV, the data show:

(GS 13)	<u>Item Response</u>	<u>No. Correct</u>	<u>% Correct</u>
	4-144	22	15%

Besides the 15% (22) correct response have, another 5% (8) consists of wrong forms of have: 4% (6) had and 1% (2) has.

This total of 20% (30) contrasts with 25% (35) forms of be, reflecting a decided confusion between perfect (have+en) and passive (be+en). Either perfect or passive may occur individually before MV. Besides be forms, stimulus responses (19%, 38) account for most remaining errors.

For tense modal have+en be+ing MV, the data show:

(GS 14)	<u>Item Response</u>	<u>No. Correct</u>	<u>% Correct</u>
	2-72	14	19%

To the correct have response here (19%, 14), wrong forms has (6%, 5) and had (5%, 4) may be added for a total of 31% choice of the perfect (have+en). This 31% is almost equal to the 29% use of forms of be (be 19%, 14 and the stimulus response been with or without a repeated ing form as in been watching 9%, 7). The remaining wrong answers consist chiefly of not (8%, 6) and stimulus responses (including been forms) (18%, 13).

For tense modal have+en be+en MV, the data show:

(GS 15)	<u>Item Response</u>	<u>No. Correct</u>	<u>% Correct</u>
	2-72	12	16%

The 16% have response, 2% has (2), and 6% had (5) make a 26% choice of have compared to 30% choice of be (be with 19%, 14 and been stimulus responses like been dulbed with 11%, 8). Additional wrong answers are stimulus responses (including been forms) (37%, 27).

For tense have+en be+ing MV, the data show:

(GS 16)	<u>Item Response</u>	<u>No. Correct</u>	<u>% Correct</u>
	2-72	30	41%

A modal does not precede have here; the percentage for use of have is notably higher for this structure than for that with a modal: 41% correct has responses, 4% (3) have, and 4% (3) had. The total 50% (36) contrasts greatly with 16% choice of be:

- a. is, a stimulus response, (8%, 6)
- b. was (6%, 5)
- c. been, a stimulus response, (1%, 1).

Stimulus response errors (including is and been) total 33% (24).

For tense have+en be+en MV, the data show:

(GS 17)	<u>Item Response</u>	<u>No. Correct</u>	<u>% Correct</u>
	2-72	19	26%

has
↙

The correct form has occurs in 26% (19) of the responses; had in 13%; and have in 1% for a 41% choice of have as opposed to 26% for be (be 2%; is, a stimulus response, 8%; and was 15%). Again the modal is lacking and the percentage of choice of have is high. Other errors include stimulus responses (including is) (22%, 16). For many perfect structures the percentage of stimulus responses seems rather high.

En

For tense have+en MV, the data show:

(GS 18)	<u>Item Response</u>	<u>No. Correct</u>	<u>% Correct</u>
	8-288	141	48%

Of 288 responses, 48% (141) show en, usually ed (e.g., walked) but occasionally an irregular form (e.g., sung). Included in the answers are:

- a. uninflected stimulus responses (e.g., pleen) (29%, 84)
- b. s forms (e.g., dalks) (1%, 3)
- c. ing forms (e.g., zinting) (4%, 14)
- d. multiword responses (e.g., been cleaned and the stimulus response to dalk) (4%, 13)
- e. double inflections, that is, two inflections in a row as in /plIndId/ with the /d/ and the /Id/ allomorphs (1%, 5).

Of the 216 responses for the 6 regular verbs, 51% (111) show en. For sing and ming, 41% (30 out of 72) are right. Of the responses sung makes up 36% (13 out of 36) while sang makes up 16% (6). For ming, 47% (17) show the regular minged while 8% (3) show the irregular mang. Regular verbs are answered correctly more often than irregular ones.

The remaining past participles are all been in various structures after have: the percentage for been is about the same as that for MV participles.

For tense have+en be+ing MV, the data show:

(GS 19)	<u>Item Response</u>	<u>No. Correct</u>	<u>% Correct</u>
	2-72	32	44%

As the numbers indicate, 44% of the responses are been (see GS 25).

Errors include:

- other forms of be (2%, 2)
- stimulus responses (e.g., heezing) (15%, 11)
- double inflections (e.g., rowinged) (6%, 5).

For tense have+en be+en MV, the data show:

(GS 20)	<u>Item Response</u>	<u>No. Correct</u>	<u>% Correct</u>
	2-72	39	54%

Been is found in 54% of the answers. Wrong answers include: be (5%, 4) and stimulus responses (20%, 15) (see GS 31).

For tense modal have+en be+ing MV, the data show:

(GS 21)	<u>Item Response</u>	<u>No. Correct</u>	<u>% Correct</u>
	2-72	30	41%

Been occurs in 41% of the responses. Incorrect answers include: other forms of be (13%, 10) and stimulus responses (16%, 12) (see GS 26).

For tense modal have+en be+en MV, the data show:

(GS 22)	<u>Item Response</u>	<u>No. Correct</u>	<u>% Correct</u>
	2-72	30	41%

Been, the answer, again occurs in 41% of the responses. Among the wrong forms are: other be forms (18%, 13) and stimulus responses (20%, 15). Whereas been stimulus responses often occur for have answers, the reverse is not true: have repetitions almost never occur for been responses (see GS 14 and 32).

Progressive (Be+ing)

TABLE 4.--All Progressive (Oral Test).

	<u>Item Response</u>	<u>No Correct</u>	<u>% Correct</u>
<u>Be</u>	10-360	134	37%
<u>ing</u>	4-144	40	27%
All	14-504	174	34%

Forms of be (37%, 134) are correctly chosen more frequently than ing (27%, 40). If one adds wrong forms of be (see the following), the discrepancy is even greater between choosing be or choosing ing.

Be

For tense modal be+ing MV, the data show:

(GS 23)	<u>Item Response</u>	<u>No. Correct</u>	<u>% Correct</u>
	4-144	58	40%

The correct response with be totals 40% (58). Incorrect forms of be include:

- a. been (1%, 2)
- b. being (.6%, 1)
- c. is, a stimulus response (2%, 3)
- d. perfect + be (5%, 8): has been (.6%, 1);
have been (4%, 7).

Forms of be, thus, equal 55% (80). Have, given in 2% (4), occurs relatively infrequently. Twenty-five percent (36) are stimulus responses.

For tense be+ing be+en MV, the data show:

(GS 24)	<u>Item Response</u>	<u>No. Correct</u>	<u>% Correct</u>
	2-72	14	19%

Forms of be make up 52% (38) of the responses:

- a. were, the correct answer (19%, 14)
- b. was, a stimulus response (11%, 8)
- c. been (1%, 1)
- d. perfect + be (e.g., has been) (20%, 15).

Besides have in item d immediately above, the one word have is given in 9% (7) of the responses. For the progressive have alone is not grammatical (e.g., *they have being watered) but perfect (have+en) + be is (e.g., they have been being watered). Be forms are found in 43% more responses than nonperfect have. Stimulus responses (including was) make up 37% (27).

For tense have+en being MV, the data show:

(GS 25)	<u>Item Response</u>	<u>No. Correct</u>	<u>% Correct</u>
	2-72	32	44%

The answer been occurs in 44% with was in 1% (1) and be in 1% (1) for a total of 47% (34) be: this differs markedly from 2% (2) have forms: has, a stimulus response, 1% (1) and had 1% (1). Stimulus responses (including has) (15%, 11) make up nearly all other errors.

For tense modal have+en being MV, the data show:

(GS 26)	<u>Item Response</u>	<u>No. Correct</u>	<u>% Correct</u>
	2-72	30	41%

Been, the answer, occurs in 41% (30) of the responses. Incorrect responses include:

- a. be (11%, 8)
- b. being (1%, 1)
- c. beinged, a double inflection (1%, 1).

Forms of be are thus given in 55% (40) for forms of have occur in only 2% (2) (including one stimulus response should have). Most other answers are stimulus responses (including should have) (16%, 12). In general few incorrect substitutions of have (a 4% average) for the be of progressive occur, compared to the markedly larger number of substitutions of be (a 25% average) for the have of perfect.

Ing

For tense being MV, the data show:

(GS 27)	<u>Item Response</u>	<u>No. Correct</u>	<u>% Correct</u>
	2-72	28	38%

In 38% (28) of the responses the ing of progressive occurs (e.g., smoking). If two ing forms (riding and fozing), considered incorrect because the base verb (jafe) was not used, are added, the total for ing forms is 41% (30). Most errors are: en (e.g., smoked) (26%, 19) and uninflected stimulus responses (e.g., smoke) (20%, 15).

For tense be+ing be+en MV, the data show:

(GS 28)	<u>Item Response</u>	<u>No. Correct</u>	<u>% Correct</u>
	2-72	12	16%

For this structure the number of correct answers with being plummets to 12 (16%). Most errors are: forms of be (20%, 15) and stimulus responses (including is) (59%, 43) (see GS 33).

Passive (Be+en)

TABLE 5.--All Passive (Oral Test).

	<u>Item Response</u>	<u>No. Correct</u>	<u>% Correct</u>
<u>Be</u>	12-432	207	45%
<u>en</u>	2- 72	45	62%
All	14-504	252	50%

Of the be responses 45% are answered correctly; 62% of the en responses are. Added together, all correct passive responses total 50%.

Be

For tense be+en MV, the data show:

(GS 29)	<u>Item Response</u>	<u>No. Correct</u>	<u>% Correct</u>
	2-72	39	54%

Is, the answer, is found in 54%. Wrong responses include:

- a. are, a stimulus response (6%, 5)
- b. was and were (8%, 6)
- c. was been (1%, 1).

In brief, 70% (51) of the responses contain forms of be while only 2% (2) contain forms of have. Most others are stimulus responses (23%, 17).

For tense modal be+en MV, the data show:

(GS 30)	<u>Item Response</u>	<u>No. Correct</u>	<u>% Correct</u>
	4-144	87	60%

The correct answer be accounts for 60% (87) of the responses. Most errors are: other be forms (are and is) (1%, 2) and stimulus responses (including not) (27%, 39). Forms of be comprise 61% (89) of the total; no have forms occur.

For tense have+en be+en MV, the data show:

(GS 31)	<u>Item Response</u>	<u>No. Correct</u>	<u>% Correct</u>
	2-72	39	54%

Been, the answer, occurs in 54% (39) of the responses. Wrong answers include: be (5%, 4) and stimulus responses (20%, 15).⁶

⁶One question is: The woman is opening the letters.
One has _____ opened before.

Two answers were the stimulus response is opening. Is, a be form, is not included with be because it is included in a multiword answer. Treating it otherwise would not change percentages materially.

Those with forms of be total 59% (43) compared to 2% (2) with had, the only have form given.

For tense modal have+en be+en MV, the data show:

(GS 32)	<u>Item Response</u>	<u>No. Correct</u>	<u>% Correct</u>
	2-72	30	41%

The correct been response for this structure with a preceding modal drops to 41%. Answers with be forms (be 13%, 10; is and was 2%, 2; and had been 1%, 1) total 59% (43), while those with had (including had been) total only 2% (2). Stimulus responses (20%, 15) make up most other responses.

For tense be+ing be+en MV, the data show:

(GS 33)	<u>Item Response</u>	<u>No. Correct</u>	<u>% Correct</u>
	2-72	12	16%

This structure results in only 16% accuracy. But the use of be (be+en) is also recorded in the wrong answers:

- a. been (8%, 6)
- b. be (5%, 4)
- c. was (2%, 2)
- d. is, a stimulus response (4%, 3).

This results in 37% (27) with be forms. Only 1% (1) consist of have forms (i.e., had). Stimulus responses (including is) (59%, 43) make up most other answers (see GS 28).

En

For tense be+en MV, the data show:

(GS 34)	<u>Item Response</u>	<u>No. Correct</u>	<u>% Correct</u>
	2-72	45	62%

On the oral test, en is the best answered passive structure. The en answers picked and spacked occur in 62% (45) of the responses.

Most errors are:

- a. ing (e.g., picking) (15%, 11)
- b. uninflected forms (e.g., pick) (5%, 4)
- c. s stimulus responses (e.g., picks) (4%, 3).

The Infinitive (To MV)

TABLE 6.--All Infinitive (Oral Test).

	Item Response	No. Correct	% Correct
<u>To</u>	2- 72	33	45%
<u>MV</u>	2- 72	52	72%
All	4-144	85	59%

Of the 144 responses for infinitive 59% are correct.

For to MV, the data show:

(GS 35)	<u>Item Response</u>	<u>No. Correct</u>	<u>% Correct</u>
	2-72	33	45%

To, an answer unlike any other on the test, is found in 45% (33)

of the responses. Included among the errors are:

- a. stimulus responses: uninflected forms (e.g., drive) or s forms (e.g., bing) (23%, 17)
- b. ing stimulus responses (e.g., driving) (8%, 6)
- c. the progressive (e.g., be driving) (1%, 1).

For to MV, the data show:

(GS 36)	<u>Item Response</u>	<u>No. Correct</u>	<u>% Correct</u>
	2-72	52	72%

Responses for the uninflected MV (e.g., bing) are nearly 30% better than those for to. Most errors belong to two groups: ing stimulus responses (e.g., piffing) (13%, 10) and s forms (e.g., rides) (8%, 6).

The Gerund (ing MV)

For ing MV, the data show:

(GS 37)	<u>Item Response</u>	<u>No. Correct</u>	<u>% Correct</u>
	2-72	31	43%

The gerund (e.g., eating) occurs in 43% (31) of the answers. Ing also occurs in the structure ing be+en MV (e.g., the multiword being eaten 2%, 2). Other wrong answers include:

- a. uninflected forms (e.g., eat) (13%, 10)
- b. s stimulus responses (e.g., thaps) (11%, 8)
- c. the past (e.g., ate) (8%, 6).

The Allomorphs

In addition, data from the oral test indicate whether or not the nonnative speaker supplied the appropriate allomorph for the present s and past morphemes. The test includes no item for the present $\emptyset$ morpheme. Only responses /s, z, Iz/ for present s and /t, d, Id/ for past will be discussed here. For other responses (e.g., uninflected forms), see GS 1, 5, 18, and 34.

Whenever a present s allomorph is used, cook and zook are inflected with /s/, swim and bim with /z/, and teach and kleach with /Iz/. More responses occur with /s/ and /z/ than with /Iz/ (39, 41, and 28, respectively). No error is made in the use of the allomorphs of the present s morpheme.

The regular allomorphs of the past tense and the past participle are identical. On the oral test they occur in these structures: (a) tense (past) MV, (b) tense have+en MV, (c) tense be+en MV. Of the responses giving past allomorphs for stems requiring /t/, 55% (120) of the 216 responses consist of the correct /t/ (e.g., /pIkt/); 2% (6) consist of /d/ (e.g., /pIkd/); 6% (14) consist of /Id/ (e.g., /jæmpId/); and 2% (5) consist of a changed final stem plus allomorph (e.g., /jaembId/ as the past of jump). For stems requiring /d/ 51% (111) consist of the correct /d/ (e.g., /klind/); 6% (13) consist of /t/ after a nasal or a liquid (e.g., /frult/); 4% (9) consist of /Id/ (e.g., /mInId/) and 3% (7) consist of a changed final stem plus /d/ (e.g., /mIgd/ for minged). For stems requiring /Id/, 38% (56) of the 144 responses are /Id/ (e.g., /plaentId/).

Occasionally a different phoneme was substituted for the final phoneme in the stem: /plaend/ was given four times as the past of plant and /zInd/ was given once for zint. Since they follow neither the regular pattern nor any subpattern in English, both /plaend/ and /zInd/ will be considered mispronunciations of the uninflected stem. Past allomorphs appear in some responses not intended to elicit the past morpheme. Some are phonologically correct (e.g., /bImd/ for bims). Others, however, include allomorph errors such as the substitution of /d/ for /t/ (e.g., /smokd/) and the substitution of /Id/ for /t/ (e.g., /zUkId/).

Summary

Tense

On the oral test past tense (58%) is answered correctly more often than present s (45%). The past shows great extremes of correctness, though, with the best answered tense item (tense past MV) at 69% and the worst answered item (tense past modal progressive) at 19%.

Modal

Of the three uninflected forms that can follow a modal, the MV (71%) appears more frequently as a correct response than either be (50%) or have (16%).

Perfect

The en of perfect is answered correctly more often than the have (47% to 22%, respectively). For structures with a modal (tense modal perfect + . . .) be forms (a 28% average) occur a little more frequently than have forms (a 26% average) but in structures without a modal (tense perfect + . . .) have forms (a 46% average) occur much more frequently than be forms (a 21% average).

Progressive

In general be responses for the progressive (37%) are given more often than ing responses (27%). Have is substituted for the be of progressive (a 4% average) less often than be is for the have of perfect (a 25% average).

Passive

The en of passive is answered correctly more often than the be (62% to 45%). Be responses (59%) greatly surpass have responses (2%) in the structure perfect + passive.

All Others

Correct gerund responses (43%) are less frequent than correct infinitive responses (59%). No error occurs in the usage of the /s, z, Iz/ allomorphs of the present s morpheme. Of the three regular allomorphs for the past morpheme, correct responses using /t/ (55%) and /d/ (51%) occur more often than those for /Id/ (38%).

The Fill-In Test and the Multiple-Choice Test

The results from the fill-in and the multiple-choice tests are compared with one another and with the results from the oral test.

Tense

TABLE 7.--All Tense (Written Tests).

	Fill-In ⁷	Multiple Choice ⁷
Present <u>s</u>	73% (317)	88% (382)
Past	74% (267)	84% (303)
All	73% (584)	86% (685)

⁷The percentage refers to the percentage of correct responses; the number within the parentheses is the number of correct responses. For the number of items and the number of possible responses, see the appropriate structures discussed in The Oral Test.

The 86% correctness on the multiple-choice test for the structures that test for tense compares with the 73% on the fill-in test and the 51% on the oral test. Very little difference exists between present s and past on the multiple-choice test (88% and 84%) and on the fill-in test (73% and 74%) compared with the considerable difference on the oral test (45% and 58%).

Tense (Present s)

For tense (present s) MV, the data show:

(GS 38)	<u>Fill-In</u>	<u>Multiple-Choice</u>
	77% (168)	93% (202)

The 93% accuracy on the multiple-choice test compares with the 77% on the fill-in test and the 49% on the oral test. Multiple-choice errors include:

- a. past forms (e.g., studied) (.9%, 2)
- b. uninflected stimulus responses (e.g., gurr) (4%, 10)
- c. ing stimulus responses (e.g., calling) (.9%, 2).

Among the fill-in errors are past forms (e.g., washed) (1%, 3) and the following stimulus responses:

- a. uninflected forms (e.g., sleep) (14%, 32)
- b. ing forms (e.g., nazzing) (.9%, 2)
- c. the progressive (e.g., is stooming) (1%, 3).

For tense (present s) have+en be+ing MV, the data show:

(GS 39)	<u>Fill-In</u>	<u>Multiple-Choice</u>
	77% (56)	91% (66)

On the multiple-choice test 91% of the responses are accurate compared with the 77% on the fill-in test and the 41% on the oral

test (see GS 53). Multiple-choice errors include have (5%, 4) and was (2%, 2); most fill-in errors are made up of:

- a. have (5%, 4)
- b. had (8%, 6)
- c. forms of be (2%, 2).

For tense (present s) have+en be+en MV, the data show:

(GS 40)	<u>Fill-In</u>	<u>Multiple-Choice</u>
	65% (47)	88% (64)

The 88% accuracy for has on the multiple-choice test compares with the 65% on the fill-in test and the 26% on the oral test. All these percentages are down from the 91%, 77%, and 41% in the previous item. Multiple-choice errors include have (5%, 4) and was (4%, 3). Among the fill-in errors are forms of have (22%, 16) and forms of be (9%, 7) (see GS 54).

For tense (present s) be+en MV, the data show:

(GS 41)	<u>Fill-In</u>	<u>Multiple-Choice</u>
	63% (46)	69% (50)

The 69% accuracy on the multiple-choice test compares with the 63% on the fill-in test and the 54% on the oral test. Multiple-choice wrong answers consist of be (4%, 3) and forms of have (26%, 19) while fill-in errors are forms of be (29%, 21) and has (6%, 5) (see GS 66).

Tense (Past)

For tense (past) MV, the data show:

(GS 42)	<u>Fill-In</u>	<u>Multiple-Choice</u>
	81% (236)	91% (264)

Once again the 91% accuracy on the multiple-choice test is higher than the 81% on the fill-in test and the 68% on the oral test.

Multiple-choice errors include:

- a. s forms (e.g., farms) (.6%, 2)
- b. stimulus responses (1%, 3): uninflected forms (e.g., frad) (.6%, 2) and ing forms (e.g., relfing) (.4%, 1).

Wrong forms on the fill-in test include:

- a. s forms (e.g., breets) (2%, 6)
- b. uninflected stimulus responses (e.g., add) (2%, 8)
- c. two-word progressives (e.g., was planning) (1%, 4)
- d. two-word passives (e.g., was planned) (.6%, 2)
- e. other multiwords (e.g., did croll) (3%, 10)
- f. have+en MV (e.g., has rung) (.6%, 2).

For the 6 regular verbs 98% (212 out of 216) of the multiple-choice responses show ed forms compared to 82% (178) on the fill-in test and 66% (143) on the oral test. For irregular verbs the 72% (52 out of 72) correctness on the multiple-choice test, the 80% (58) on the fill-in test, and the 76% (55) on the oral test are unusually close. Correct forms chosen on the multiple-choice test include sprang (44%, 16), tringed (75%, 25), and trang (25%, 9). In addition, 52% (19 out of 36) of the responses for spring are the incorrect springed. On the fill-in test, 66% (24 out of 36) of the ring answers are rang and 8% (3) rung. Ning responses include the regular ninged (75%, 27) and the irregular nang (11%, 4). Thus tring and ning are usually inflected as regular verbs. The data correspond well with those on the oral test (see The Oral Test, Tense) except that sung is given slightly more often than sang (sing being used on the oral test instead of spring or ring).

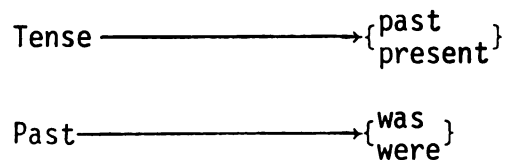
For tense (past) be+ing be+en MV, the data show:

(GS 43)	<u>Fill-In</u>	<u>Multiple-Choice</u>
	43% (31)	54% (39)

The 54% accuracy here is the lowest for any structure that tests for tense on the multiple-choice test; the same is true of the 43% on the fill-in test and the 19% on the oral test. Have (16%, 12) and had (29%, 21) are the two multiple-choice errors. Most wrong fill-in answers consist of:

- a. was, a stimulus response (9%, 7)
- b. are (4%, 3)
- c. forms of have (36%, 26).

The choice of are and was involves tense rules:



The choice of have violates the rule: Progressive $\longrightarrow$ be+ing (see GS 61).

Modal

TABLE 8.--All Modal (Written Tests).

	<u>Fill-In</u>	<u>Multiple-Choice</u>
<u>Have</u>	46% (134)	54% (158)
<u>Be</u>	73% (212)	83% (241)
<u>MV</u>	65% (94)	72% (104)
All	61% (440)	69% (503)

The 69% accuracy on the multiple-choice test for the structures that test for modal is greater than the 61% on the fill-in test and the 41% on the oral test.

Modal+MV

For modal MV, the data show:

(GS 44)	<u>Fill-In</u>	<u>Multiple-Choice</u>
	65% (94)	72% (104)

A comparison of the multiple-choice (72%), the fill-in (65%), and the oral (71%) responses reveals little difference. Multiple-choice errors consist of:

- a. the past (e.g., hid) (4%, 7)
- b. s stimulus responses (e.g., noves) (22%, 32)
- c. ing stimulus responses (e.g., hiding) (.6%, 1).

Similar errors are found on the fill-in test:

- a. the past (e.g., raced) (1%, 2)
- b. s stimulus responses (e.g., races) (19%, 28)
- c. ing stimulus responses (e.g., fishing) (1%, 2).

Modal+Have

For tense modal have+en MV, the data show:

(GS 45)	<u>Fill-In</u>	<u>Multiple-Choice</u>
	33% (48)	42% (61)

The 42% accuracy here, the lowest accuracy response on the multiple-choice test, contrasts with the 33% on the fill-in test and the 15% on the oral test. If be responses are included, 81% (117) of the responses on the multiple-choice test consist of an uninflected verb after the modal; this figure compares with 56% (82) on the fill-in test and 39% (57) on the oral test. Had (14%, 21) and

been (4%, 6) are the two remaining multiple-choice errors (see GS 50). Fill-in errors include:

- a. other forms of have (18%, 27)
- b. not (4%, 6)⁸
- c. stimulus responses including not (10%, 15)⁸
- d. blank responses (6%, 9).

For tense modal have+en be+ing MV, the data show:

(GS 46)	<u>Fill-In</u>	<u>Multiple-Choice</u>
	56% (41)	54% (39)

The 54% accuracy for have on the multiple-choice test compares with 56% on the fill-in test and 19% on the oral test. Strangely, the accuracy on the multiple-choice test is slightly less than that on the fill-in test. Multiple-choice errors are has (41%, 30) and be (4%, 3). Two common fill-in wrong answers are other forms of have (27%, 20) and not (6%, 5) (see GS 51).

For tense modal have+en be+en MV, the data show,

(GS 47)	<u>Fill-In</u>	<u>Multiple-Choice</u>
	62% (45)	80% (58)

The 80% accuracy for have on the multiple-choice test compares with 62% on the fill-in test and 16% on the oral test. Having (4%, 3), forms of be (9%, 7), and 4 blank responses (5%) are the multiple-choice errors. Two fill-in errors occur often: other forms of have (16%, 12) and not, a stimulus response (15%, 11) (see GS 52).

⁸Not responses listed under b are for items 24 and 52 with may; no not occurs as a stimulus response. Not responses listed under c are stimulus responses for could items 18 and 40.

Modal+Be

For tense modal be+ing MV, the data show:

(GS 48)	<u>Fill-In</u>	<u>Multiple-Choice</u>
	57% (83)	77% (111)

The 77% accuracy for be on the multiple-choice test compares with the 57% on the fill-in test and the 40% on the oral test.

Multiple-choice wrong answers are other forms of be (10%, 15) and forms of have (12%, 18). Most fill-in errors consist of been (4%, 6) and forms of have (21%, 31) (see GS 60).

For tense modal be+en MV, the data show:

(GS 49)	<u>Fill-In</u>	<u>Multiple-Choice</u>
	89% (129)	90% (130)

The structure modal + passive receives the highest accuracy percentage for any structure involving modal on the multiple-choice (90%) and the fill-in (89%) tests; it ranks second on the oral test to modal + MV (60% to 71%). Multiple-choice errors include other forms of be (2%, 3) and forms of have (7%, 11). Two responses account for most fill-in errors: forms of be (3%, 5) and stimulus responses (e.g., fly) (3%, 5) (see GS 67).

Perfect (Have+en)

TABLE 9. All Perfect (Written Tests).

	<u>Fill-In</u>	<u>Multiple-Choice</u>
<u>Have</u>	54% (237)	66% (288)
<u>en</u>	71% (413)	82% (473)
All	64% (650)	75% (761)

The 75% accuracy for perfect on the multiple-choice test compares with the 64% on the fill-in test and the 36% on the oral test.

Have

For tense modal have+en MV, the data show:

(GS 50)	<u>Fill-In</u>	<u>Multiple-Choice</u>
	33% (48)	42% (61)

The 42% have accuracy on the multiple-choice test is higher than the 33% on the fill-in test and the 15% on the oral test. As regards perfect, if the only other form of have given as an answer on the multiple-choice test (had) (14%, 21) is included, the have total becomes 56% (82). This figure compares with 52% have total on the fill-in test which includes:

- a. had (6%, 9)
- b. has (6%, 10)
- c. have+en be (5%, 8): has been (3%, 5); have been (2%, 3).

The have total on the oral test equals 20% (30).

Be forms total 43% (62) on the multiple-choice test and consist of be (38%, 56) and been (4%, 6). Three errors on the fill-in test consist of be (31%, 45):

- a. be (23%, 34)
- b. been (2%, 3)
- c. have+en be (5%, 8).

The 24% be total on the oral test is the lowest of the three.

Stimulus responses which include not (10%, 15) and not responses which are not stimulus responses (4%, 6) also occur frequently on

the fill-in test.⁹ This is the least correctly answered item on all three tests.¹⁰

For tense modal have+en be+ing MV, the data show:

(GS 51)	<u>Fill-In</u>	<u>Multiple-Choice</u>
	56% (41)	54% (39)

The 54% accuracy for have on the multiple-choice test, plus 41% (30) for has, makes a 95% have total compared to the 84% (61) fill-in total made up of:

- a. have (56%, 41)
- b. has (19%, 14)
- c. had (8%, 6).

Have forms make up 31% (23) on the oral test. Multiple-choice be forms total 4% (3) compared to 1% (2) on the fill-in test and 19% on the oral test.

For tense modal have+en be+en MV, the data show:

(GS 52)	<u>Fill-In</u>	<u>Multiple-Choice</u>
	62% (45)	80% (58)

To the 80% correct have response on the multiple-choice test, the 4% (3) having response may be added to give an 84% (61) have total, compared to the 79% (57) fill-in total consisting of:

- a. have (62%, 45)
- b. has (5%, 4)
- c. had (11% 8).

The oral have total is 30% (22). On the fill-in test 15% (11) of the responses consist of not.

⁹See footnote 8.

¹⁰On the fill-in test the structure progressive + passive also has the 33% accuracy of response.

For tense have+en be+ing MV, the data show:

(GS 53)	<u>Fill-In</u>	<u>Multiple-Choice</u>
	77% (56)	91% (66)

The 91% correct has response, plus the 5% (4) have response, makes a 97% (70) have total, only slightly more than the 93% (67) fill-in total which includes:

- a. has (77%, 56)
- b. had (8%, 6)
- c. have (5%, 4)
- d. could have (1%, 1).

The two 90%'s on the written tests contrast markedly with the 50% on the oral test. Be answers total 2% on the multiple-choice test, 2% on the fill-in test and 16% on the oral test.

For tense have+en be+en MV, the data show:

(GS 54)	<u>Fill-In</u>	<u>Multiple-Choice</u>
	65% (47)	88% (64)

To the 88% correct has response, the 5% (4) have response may be added to give a 94% (68) have total, a figure only 7% higher than the 87% (63) fill-in total consisting of:

- a. has (65%, 47)
- b. have (1%, 1)
- c. had (20%, 15).

The oral have response totals 41%, a percentage markedly lower than the percentages on the written tests. Be forms (was) make up 4% (3) on the multiple-choice test and 9% (stimulus response is 4%, 3 and was 5%, 4) on the fill-in test but 26% on the oral test.

En

For tense have+en MV, the data show:

(GS 55)	<u>Fill-In</u>	<u>Multiple-Choice</u>
	64% (185)	77% (225)

Correct en scores (including the irregular jouten) total 77% on the multiple-choice test, 64% on the fill-in test, and 48% on the oral test. Multiple-choice errors include:

- a. uninflected stimulus responses (e.g., zub) (4%, 12)
- b. s forms (e.g., zubs) (3%, 9)
- c. ing forms (e.g., voting) (4%, 14).

Fill-in errors are made up of:

- a. uninflected stimulus responses (e.g., wuck) (11%, 33)
- b. s forms (e.g., shouts) (1%, 4)
- c. ing forms (e.g., troning) (2%, 6)
- d. other stimulus responses: to + MV (e.g., to trone) (1%, 5); know how to MV (1%, 5); done (3%, 10).

For the six regular verbs, 84% (183) of the 216 responses on the multiple-choice test are accurate; this compares with 69% on the fill-in test and 51% on the oral test. For irregular verbs 58% (42) of the 72 responses show correct en forms for spring and tring on the multiple-choice test; 47% show en for ring and ning on the fill-in test; and 41% show en for sing and ming on the oral test. The en form sprung is given in 22% (8 out of 36) of the responses on the multiple-choice test while the incorrect sprunged occurs in 69% (25). The regular tringed occurs in 52% (19) and the irregular trung in 41%, both forms being judged correct. On the fill-in test the correct rung occurs in 33% (12) while the incorrect rang occurs in 25% (9) and incorrect ringed in 13% (15). Fifty-five percent (20) show the regular (and

correct) ninged, 5% the irregular (and correct) nung, 5% the irregular (and incorrect) nan, and 2% the ambiguous nong.

For tense have+en be+ing MV, the data show:

(GS 56)	<u>Fill-In</u>	<u>Multiple-Choice</u>
	86% (62)	88% (64)

The 88% been response on the multiple-choice test is close to the 86% on the fill-in test but double the 44% on the oral test. Being (9%, 7) and had (1%, 1) are the only two multiple-choice errors given while fill-in errors include not (5%, 4) and stimulus responses (e.g., dish) (4%, 3) (see GS 62).

For tense have+en be+en MV, the data show:

(GS 57)	<u>Fill-In</u>	<u>Multiple-Choice</u>
	80% (58)	90% (65)

The 90% been total on the multiple-choice test is higher than the 80% fill-in total and the 54% oral total (see GS 68). Multiple-choice errors are being (4%, 3) and forms of have (5%, 4) while the chief fill-in errors are:

- a. be (2%, 2)
- b. had (2%, 2)
- c. not (5%, 4).

For tense modal have+en be+ing MV, the data show:

(GS 58)	<u>Fill-In</u>	<u>Multiple Choice</u>
	77% (56)	84% (61)

The answer been occurs in 84% of the multiple-choice responses, 77% of the fill-in responses, and 41% of the oral responses (see GS 63). Wrong answers on the multiple-choice test are be (11%, 8) and had (4%, 3) while wrong fill-in answers include:

- a. other forms of be (4%, 3)
- b. had (6%, 5)
- c. not (2%, 2)
- d. blank responses (6%, 3).

For tense modal have+en be+en MV, the data show:

(GS 59)	<u>Fill-In</u>	<u>Multiple Choice</u>
	72% (52)	80% (58)

Been answers total 80% of the responses on the multiple-choice test, 72% on the fill-in test, and 41% on the oral test. Be (9%, 7) and had (6%, 5), as well as two blank responses, are the only wrong forms that occur. Wrong fill-in forms include other be forms (9%, 7) and forms of eat (6% 5) (see GS 69).

Progressive (Be+ing)

TABLE 10.--All Progressive (Written Tests).

	<u>Fill-In</u>	<u>Multiple-Choice</u>
<u>Be</u>	64% (232)	76% (275)
<u>ing</u>	51% (74)	65% (94)
All	60% (306)	73% (369)

The 73% accuracy on the multiple-choice test is higher than the 60% on the fill-in test and more than double the 34% on the oral test. Be is answered more correctly than ing on all three tests.

Be

For tense modal be+ing MV, the data show:

(GS 60)	<u>Fill-In</u>	<u>Multiple-Choice</u>
	57% (83)	77% (111)

Be forms on the multiple-choice test total 87% (126) of the responses:

- a. be, the answer (77%, 111)
- b. being (6%, 9)
- c. been (4%, 6).

Be forms on the fill-in test total 75% (108):

- a. be (57%, 83)
- b. is, a stimulus response (2%, 4)
- c. been (4%, 6)
- d. have+en be (10%, 15): has been (3%, 5); have been (6%, 10).

This compares with the 55% on the oral test. Excluding have+en be, have forms (9%, 13) and has (3%, 5) total 12% (18) on the multiple-choice test; 11% (16) on the fill-in test (have 7%, 11 and has 3%, 5) and 5% on the oral test.

For tense be+ing be+en MV, the data show:

(GS 61)	<u>Fill-In</u>	<u>Multiple-Choice</u>
	43% (31)	54% (39)

Were occurs in 54% of the responses on the multiple-choice test, 43% on the fill-in test, and 19% on the oral test. No other form of be occurs on the multiple-choice test. Other be forms on the fill-in test include was, a stimulus response (9%, 7) and are (4%, 3), making a total of 56% be forms compared with the 52% on the oral test. Multiple-choice have forms consisting of have (16%, 12) and had (29%, 21) make a 45% (33) total compared with 36% (26) on the fill-in test:

- a. have (16%, 12)
- b. had (18%, 13)
- c. has (1%, 1)

and 9% (7) on the oral test.

For tense have+en be+ing MV, the data show:

(GS 62)	<u>Fill-In</u>	<u>Multiple-Choice</u>
	86% (62)	88% (64)

To the 88% correct been response on the multiple-choice test, the 9% (7) being response may be added to give a 98% (71) be total which compares with the 87% on the fill-in test (been 86% and being 1%) and the 47% on the oral test. One had response occurs on the multiple-choice test; no have forms occur on the fill-in test, while only 2% of the oral responses are forms of have. Most other fill-in errors are either not (5%, 4) or stimulus responses (4%, 3). On the three tests the response accuracy for the structure perfect progressive MV is the highest of all the structures testing for progressive.

For tense modal have+en be+ing MV, the data show:

(GS 63)	<u>Fill-In</u>	<u>Multiple-Choice</u>
	77% (56)	84% (61)

Been (84%, 61), plus incorrect be (11%, 8), gives a 95% be total on the multiple-choice test, a higher figure than the 81% be total on the fill-in test:

- a. been (77%, 56)
- b. being (2%, 2)
- c. was (1%, 1)

and the 55% on the oral test. Had (4%, 3) is the only other multiple-choice response. In contrast, other fill-in errors include:

- a. had (6%, 5)
- b. not (2%, 2)
- c. blank responses (6%, 5).

Ing

For tense be+ing MV, the data show:

(GS 64)	<u>Fill-In</u>	<u>Multiple-Choice</u>
	69% (50)	66% (48)

The correct ing form (e.g., serving) occurs in 66% of the responses on the multiple-choice test, 69% on the fill-in test, and 38% on the oral test. Uninflected forms (e.g., serve) (4%, 3) and en participles (e.g., served) (29%, 21) are the only errors on the multiple-choice test while most wrong answers on the fill-in test are uninflected forms (e.g., serve) (4%, 3) or en participles (e.g., cloufed) (18%, 13).

For tense be+ing be+en MV, the data show:

(GS 65)	<u>Fill-In</u>	<u>Multiple-Choice</u>
	33% (24)	63% (46)

The answer being occurs in 63% of the responses on the multiple-choice test, 33% on the fill-in test, and 16% on the oral test. Two errors occur on the multiple-choice test: been (25%, 18) and forms of have (9%, 7). Once an item was left unanswered. Been (29%, 21), stimulus responses (e.g., tizzed) (9%, 7), and blank responses (12%, 9) make up most other responses on the fill-in test. This progressive + passive ranks lowest in accuracy on the fill-in and oral tests when compared to the other structures testing for progressive; it ranks second lowest on the multiple-choice test (see GS 81).

Passive (Be+en)

TABLE 11. All Passive (Written Tests).

	Fill-In	Multiple-Choice
<u>Be</u>	70% (309)	80% (349)
<u>en</u>	80% (58)	83% (60)
All	72% (367)	81% (409)

The 81% average on the multiple-choice test compares with the 72% on the fill-in test and the 50% on the oral test. The difference between be (80%) and en (83%) on the multiple-choice test is smaller than that on the fill-in test (be 70%, en 80%) and that on the oral test (be 45%, en 62%).

Be

For tense be+en MV, the data show:

(GS 66)	<u>Fill-In</u>	<u>Multiple-Choice</u>
	63% (46)	69% (50)

To the 69% correct is response, the 4% (3) be response may be added, giving a 73% (53) be total on the multiple-choice test.

The 93% be total on the fill-in test consists of:

- a. is (63%, 46)
- b. are (5%, 4)
- c. was (15%, 11)
- d. were (4%, 3)
- e. is being (2%, 2)
- f. were been (1%, 1).

Be forms total 70% on the oral test. The errors had (12%, 9) and has (13%, 10) give a 26% (19) have total on the multiple-choice

test, compared with 6% on the fill-in test (has) and 2% on the oral test. Neither have nor have+en forms are very frequently substituted for the be of passive.

For tense modal be+en MV, the data show:

(GS 67)	<u>Fill-In</u>	<u>Multiple-Choice</u>
	89% (129)	90% (130)

To the be (90%, 130) response, being (1%, 2) and been (.6%, 1) may be added together to give a 92% be total on the multiple-choice test, about the same total as the 93% on the fill-in test consisting of:

- a. be (89%, 129)
- b. been (1%, 2)
- c. were (.6%, 1)
- d. has been (.6%, 1)
- e. be to (.6%, 1).

The 61% be total on the oral test is much lower. Multiple choice have forms total 7% (11): have (2%, 4) and had (4%, 7) while fill-in have forms total 2% (2): has and has been. No have forms occur on the oral test. Another 3% (5) of the fill-in answers are stimulus responses.

For tense have+en be+en MV, the data show:

(GS 68)	<u>Fill-In</u>	<u>Multiple-Choice</u>
	80% (58)	90% (65)

The answer been (90%, 65) and the wrong form being (4%, 3) make a 94% (68) be total on the multiple-choice test, a higher figure than the 83% (60) total on the fill-in test, which consists of been (80%, 58) and be (2%, 2). The be total on the oral test is 59%. On the multiple-choice test the errors have (1%) and had (4%)

make a 5% have total which is close to the 2% total (e.g., had) on the fill-in test and the 2% on the oral test.

For tense modal have+en be+en MV, the data show:

(GS 69)	<u>Fill-In</u>	<u>Multiple Choice</u>
	72% (52)	80% (58)

On the multiple-choice test been, the answer, is found in 80% (58) of the responses and be in 9% (7) to make a 90% (65) be total, a figure near the 81% (59) be total on the fill-in test which is made up of:

- a. been (72%, 52)
- b. be (6%, 5)
- c. being (2%, 2).

Be forms on the oral test total 59%. Six percent (5) of the multiple-choice test responses consist of had; this compares with 0% have forms on the fill-in test and 2% on the oral test. Forms of eat (6%, 5) make up most remaining fill-in answers.

For tense be+ing be+en MV, the data show:

(GS 70)	<u>Fill-In</u>	<u>Multiple-Choice</u>
	33% (24)	63% (46)

Being occurs in 63% of the responses on the multiple-choice test, 33% on the fill-in test, and 16% on the oral test, giving progressive + passive the lowest percentage on all three tests for the structures testing for passive. When been responses (25%, 18) are added, the multiple-choice be total equals 88%, as contrasted with the 68% fill-in total that includes these wrong forms:

- a. been (29%, 21)
- b. to be (2%, 2)
- c. was (2%, 2).

The oral total is 37%. Multiple-choice have forms (have 2%, 2 and has 6%, 5) total 9% (7), a higher percentage than the 1% had total on the fill-in test and the 1% total on the oral test. Most remaining fill-in answers are stimulus responses (9%, 7).

En

For tense be+en MV, the data show:

(GS 71)	<u>Fill-In</u>	<u>Multiple Choice</u>
	80% (58)	83% (60)

The en form (e.g., sailed) occurs in 83% of the responses on the multiple-choice test compared with 80% on the fill-in test and 62% on the oral test. Two multiple-choice errors occur: an uninflected form (grool) (1%, 1) and ing forms (e.g., sailing) (15%, 11). Uninflected forms (4%, 3) and ing forms (12%, 9), likewise, make up most of the fill-in errors.

The Infinitive (To MV)

TABLE 12.--All Infinitive (Written Tests).

	<u>Fill-In</u>	<u>Multiple-Choice</u>
<u>To</u>	70% (51)	95% (69)
<u>MV</u>	91% (66)	90% (65)
All	81% (117)	93% (134)

The 93% accuracy on the multiple-choice test compares with the 81% on the fill-in test and the 59% on the oral test.

For to MV, the data show:

(GS 72)	<u>Fill-In</u>	<u>Multiple-Choice</u>
	70% (51)	95% (69)

To occurs in 95% of the responses on the multiple-choice test, 70% on the fill-in test, and 45% on the oral test. Multiple-choice wrong answers include:

- a. has (1%, 1)
- b. have (1%, 1)
- c. blank response (1%, 1).

Among the fill-in wrong answers are:

- a. stimulus responses (e.g., boy) (5%, 4)
- b. can (5%, 4)
- c. blank response (6%, 5).

While to + MV is the most correctly answered structure on the multiple-choice test, it ranks lower on both the fill-in test (11th out of 23) and the oral test (9th).

For to MV, the data show:

(GS 73)	<u>Fill-In</u>	<u>Multiple-Choice</u>
	91% (66)	90% (65)

The 90% accuracy on the multiple-choice test compares with 91% on the fill-in test and 72% on the oral test. Multiple-choice errors include s forms (e.g., learns) (5%, 4) and ing stimulus responses (e.g., tooging) (2%, 2) as well as one unanswered response.

Fill-in errors consist of s forms (e.g., buys) (2%, 2) and be (1%, 1). This is the most correctly answered structure on both the fill-in and the oral tests while it is tied for 5th on the multiple-choice test.

The Gerund (Ing MV)

For ing MV, the data show:

(GS 74)	<u>Fill-In</u>	<u>Multiple-Choice</u>
	52% (38)	56% (41)

The 56% on the multiple-choice test compares with 52% on the fill-in test and 43% on the oral test. Two incorrect ing forms occur on the fill-in test once: winning and the double inflection vinsing. Multiple-choice errors include:

- s stimulus responses (e.g., beats) (13%, 10)
- uninflected forms (e.g., beat) (11%, 8)
- himped or beaten (18%, 13).

Most fill-in errors are similar:

- s stimulus responses (e.g., hits) (8%, 6)
- uninflected forms (e.g., hit) (11%, 8)
- past or en forms (e.g., vined) (13%, 10).

While the accuracy percentage for gerund is very low (19th) among the 23 structures on both the multiple-choice and the fill-in tests, it ranks much higher (12th) on the oral test.

Summary

Tense

On the multiple-choice test present s (88%) and past (84%) are close together; on the fill-in test the present s (73%) and past (74%) are even closer together; on the oral test the present s (45%) and past (58%) differ more markedly. The highest accuracy percentage is for present s + MV (93%) on the multiple-choice test and for past + MV on both the fill-in test (81%) and on the oral test (68%).

Modal

Of the uninflected forms that follow a modal in a grammatical verb phrase, be (83%) occurs more frequently on the multiple-choice test than either MV (72%) or have (54%). On the fill-in test be accurate responses (73%) are also more frequent than those for MV (65%) or have (33%). On the oral test MV (71%) occurs more frequently than either be (50%) or have (16%). The 42% accuracy response for modal perfect MV, the lowest percentage on the multiple-choice test, is still higher than either the 33% fill-in response or the 15% oral response. The 54% multiple-choice response for modal perfect progressive is also low, though still higher than the 19% oral response; it is a little lower, though, than the 56% fill-in response.

Perfect

The 75% accuracy average for perfect on the multiple-choice test is higher than the 64% fill-in average and more than double the 36% oral average. Responses with have forms are found in 85% of the responses to the perfect structures on the multiple-choice test, 78% on the fill-in test, and 33% on the oral test. Be substitutions for the have of perfect occur in 12% of the multiple-choice responses, 9% of the fill-in responses, and 25% of the oral responses.

Progressive

The be of progressive (76%) occurs more often than the ing (65%) on the multiple-choice test, the fill-in test (be 64%,

ing (51%) and the oral test (be 37%, ing 27%). Have substitutions for be occur more often on the multiple-choice test (12%) and the fill-in test (13%) than they do on the oral test (4%). Be forms are more prevalent on all three tests: the multiple-choice test (83%), the fill-in test (74%), and the oral test (52%).

Passive

The accuracy averages for be (80%) and en (83%) for passive are nearly the same on the multiple-choice test but more markedly different on the fill-in test (be 71%, en 80%) and the oral test (be 45%, en 62%). Most responses are be forms: the multiple-choice test 87%, the fill-in test 83%, the oral test 57%. Have substitutions for be do not occur frequently: the multiple-choice test 10%, the fill-in test 2%, the oral test 1%.

All Others

The 93% multiple-choice response for infinitive is greater than the 81% fill-in response and the 59% oral response. In contrast, relatively little difference occurs for gerund: the multiple-choice test, 56%, the fill-in test 52%, the oral test 43%.

In general multiple-choice responses show a higher accuracy percentage than oral responses. The difference often is 20% or 30%, occasionally even 50%; sometimes it is less, once as little as 1% (see GS 44 and 53). The difference between fill-in and multiple-choice responses is generally less, a variation of 1% to 30% (see GS 49, 65, and 73). The students did better on the written tests (the fill-in test and the multiple-choice test) than on the oral test.

The Control Group

The control group of four native speakers, all graduate students at Michigan State University, nearly always gave the expected response.

On the oral test only one real error occurred, the substitution of was for is in the structure be+en MV (was thoyed for is thoyed). One speaker, retaining the present s stimulus response thaps, gave thapsing as the gerund form; his answer showed both s and ing morphemes. Two unexpected pronunciations occurred:

- a. /f/ to /v/, probably based on the safe-saving or knife-knives pattern; from the stimulus jafe, three speakers formed the word javing for the expected jafing;
- b. /I/ to /ae/, possibly based on the sink-sank pattern:
 1. from the stimulus zicks, for the structure modal + MV, one speaker gave zack for the expected zick;
 2. from the stimulus zint, for the structure have+en MV, one speaker gave zanted for the expected zinted.

In these cases, however, the inflectional endings are correct.

No error occurred on the fill-in test.

On the multiple-choice test one speaker substituted the past for the present s morpheme (theeted for theets); two substituted en for ing (served for serving); one substituted the ungrammatical have for be in be+ing passive (had being glipped for were being glipped). These errors likely resulted from carelessness due to excessive speed in answering the tests.

The data for the irregular past and past participles are especially interesting. On the oral test for past all gave sang and minged; on the fill-in test all gave rang and ninged; on the

multiple-choice test, two gave the regular but incorrect sprunged and two gave sprang; two also gave tringed and two gave trang. For en on the oral test all gave sung and minged; on the fill-in test all gave rung and ninged; on the multiple-choice test all gave sprung while three gave trung and one gave tringed. The four native English speakers thus tended to regularize the nonsense ing forms.

Statistics

The statistical test used in our analysis of the results by levels of proficiency in the English language and by native language is the chi square test.¹¹ We tested the null hypothesis that all groups by level (beginning, intermediate, and advanced students) and by language (Arabic, Japanese, and Spanish speakers) would answer the items equally well for each structure on the three tests. Whenever the expected results and the actual results by level of proficiency or by language turn out to be the same, the value of chi square is zero. But when the value of chi square exceeds the value expected by chance, the null hypothesis can be rejected since the group results differ. If the chi square value is at the .05 level, the result is significant statistically; the possibility of such a result by chance is not greater than 5 times out of 100. If the chi square value is at the .01 level or the .001 level, the result is highly significant statistically.

¹¹For the sake of simplicity, however, most of the time the data will be discussed in the traditional terminology of percentages.

Analysis by Level of Proficiency in English

The data for beginning, intermediate, and advanced students are given in the following pages. No errors will be discussed here since they have been detailed in the earlier part of this chapter.

Tense

The 60% all correctness for tense by beginners compares with 70% by intermediates and 80% by advanced students. The 63%, 72%, and 80% all correctness for past by beginning, intermediate, and advanced students is slightly higher than the 57%, 68%, and 81% for present s. For the six structures testing for tense, the all correctness for present s + MV (62%, 73%, 84%) is the highest for present s structures while that for past + MV (74%, 79%, 87%) is much higher than that for past being passive (20%, 44%, 51%), the least correctly answered tense structure. On the oral test not one correct response was given by beginners for present s have+en passive.

The data indicate that the intermediate students answered the items more accurately than did the beginners with only these exceptions:

1. present s + MV (multiple choice: beginner 91%, intermediate 91%)
2. present s have+en progressive (fill-in: beginner 75%, intermediate 75%)
3. present s have+en passive (fill-in: beginner 62%, intermediate 54%; multiple-choice 87%, 87%).

Similarly the advanced students answered the items more accurately than did the intermediates except for the following instances:

TABLE 13.--Tense by Level.

Test	Percent and Number Correct			Test	Percent and Number Correct		
	Beginner	Intermediate	Advanced		Beginner	Intermediate	Advanced
<u>Tense (present s) MV</u>				<u>Tense (past) beten MV</u>			
Oral	37% (27)	47% (34)	63% (46)	Oral	12% (3)	12% (3)	33% (8)
Fill	58% (42)	81% (59)	93% (67)	Fill	12% (3)	54% (13)	62% (15)
Mult	91% (66)	91% (66)	97% (70)	Mult	37% (9)	66% (16)	58% (14)
All	62% (135)	73% (159)	84% (183)	All	20% (15)	44% (32)	51% (37)
<u>Tense (present s) have+en beten MV</u>				<u>All present s</u>			
Oral	25% (6)	29% (7)	70% (17)	Oral	29% (42)	41% (60)	64% (93)
Fill	75% (18)	75% (18)	83% (20)	Fill	61% (88)	73% (106)	85% (123)
Mult	87% (21)	95% (23)	91% (22)	Mult	83% (120)	88% (128)	93% (134)
All	62% (45)	66% (48)	81% (59)	All	57% (250)	68% (294)	81% (350)
<u>Tense (present s) have+en beten MV</u>				<u>All past</u>			
Oral	0% (0)	20% (5)	58% (14)	Oral	52% (63)	54% (65)	70% (84)
Fill	62% (15)	54% (13)	79% (19)	Fill	60% (73)	75% (91)	85% (103)
Mult	87% (21)	87% (21)	91% (22)	Mult	78% (94)	88% (106)	85% (103)
All	50% (36)	54% (39)	76% (55)	All	63% (230)	72% (262)	80% (290)
<u>Tense (present s) beten MV</u>				<u>All tense (present s and past)</u>			
Oral	37% (9)	58% (14)	66% (16)	Oral	39% (105)	47% (125)	67% (177)
Fill	54% (13)	66% (16)	70% (17)	Fill	60% (161)	74% (197)	85% (226)
Mult	50% (12)	75% (18)	83% (20)	Mult	81% (214)	88% (234)	89% (237)
All	47% (34)	66% (48)	73% (53)	All	60% (480)	70% (556)	80% (640)
<u>Tense (past) MV</u>							
Oral	62% (60)	64% (62)	79% (76)				
Fill	72% (70)	81% (78)	91% (88)				
Mult	88% (85)	93% (90)	92% (89)				
All	74% (215)	79% (230)	87% (253)				

1. present s have+en progressive (multiple-choice: intermediate 95%, advanced 91%)
2. past + MV (multiple-choice: intermediate 93%, advanced 92%)
3. past be+ing passive (multiple-choice: intermediate 66%, advanced 58%).
4. past (all) (multiple-choice: intermediate 88%, advanced 85%).

The beginners never answered any item more correctly than did the advanced students.

The percentages on the oral test are lower than those on the fill-in test except for the beginners' response for past be+ing passive (oral 12%, fill-in 12%). Similarly, the percentages on the fill-in test are lower than those on the multiple-choice test except for the following:

1. present s be+en (beginner: fill-in 54%, multiple-choice 50%)
2. past be+ing passive (advanced: fill-in 62%, multiple-choice 58%)
3. past (all) (advanced: fill-in 85%, multiple-choice 85%).

The percentages on the multiple-choice test are always higher, however, than those on the oral test.

For past + MV 66% (143) of the 216 responses show ed for the six regular verbs on the oral test (beginner 59%, 43; intermediate 63%, 46; advanced 75%, 54); 82% (178) show ed on the fill-in test (beginner 75%, 54; intermediate 81%, 59; advanced 90%, 65); and 98% (212) show ed on the multiple-choice test (beginner 95%, 69; intermediate 95%, 71; advanced 100%, 72). For irregular verbs 76% (55 out of 72) show ed for sing and ming on the oral test (beginner 70%, 17; intermediate 66%, 16; advanced 91%, 22); 80% (58) show ed for ring and ning on the fill-in test

(beginner 66%, 16; intermediate 79%, 19; advanced 95%, 23); and only 72% (52) show ed for spring and tring on the multiple-choice test (beginner 66%, 16; intermediate 79%, 19; advanced 70%, 17). In fact, the beginners' 70% correct oral response for irregular verbs is slightly better than their 66% fill-in and 66% multiple-choice response; the advanced students' 91% oral response is better than their 70% multiple-choice response. The multiple-choice response is low because the regular but incorrect sprunged was chosen in 52% (19 out of 36) of the spring responses.

The null hypothesis is rejected in only two structures involving tense. The difference in performance among the three levels of students is significant at the .05 level for past being passive and highly significant at the .01 level for present s have+en progressive.¹²

Modal

The 40% all correctness for uninflected verbs after modals by beginners compares with 56% by intermediates and 75% by advanced students. For the beginner the all percentages for be (53%) and for MV (55%) show very little difference, compared with the much lower percentage for have (20%); the same can be said of the percentages for the intermediates (72%, 68%, 33%) and for the advanced students (81%, 85%, 63%). No beginner correctly answered the structure modal have+en passive on the oral test.

¹²For chi square values by level of proficiency for the 23 structures on the tests, see Appendix B.

TABLE 14.--Modal by Level.

Test	Percent and Number Correct			Test	Percent and Number Correct		
	Beginner	Intermediate	Advanced		Beginner	Intermediate	Advanced
Tense modal <u>MV</u>				Tense modal <u>be + en MV</u>			
Oral	60% (29)	75% (36)	79% (38)	Oral	39% (19)	56% (27)	85% (41)
Fill	43% (21)	64% (31)	87% (42)	Fill	72% (35)	95% (46)	100% (48)
Mult	62% (30)	64% (31)	89% (43)	Mult	77% (37)	95% (46)	97% (47)
All	55% (80)	68% (98)	85% (123)	All	63% (91)	82% (119)	94% (136)
Tense modal <u>have+en MV</u>				All <u>have</u>			
Oral	2% (1)	12% (6)	31% (15)	Oral	3% (3)	11% (11)	35% (34)
Fill	4% (2)	29% (14)	66% (32)	Fill	21% (21)	41% (40)	76% (73)
Mult	20% (10)	35% (17)	70% (34)	Mult	36% (35)	47% (46)	80% (77)
All	9% (13)	25% (37)	56% (81)	All	20% (59)	33% (97)	63% (184)
Tense modal <u>have+en bet+ing MV</u>				All <u>be</u>			
Oral	8% (2)	8% (2)	41% (10)	Oral	31% (30)	48% (47)	70% (68)
Fill	33% (8)	54% (13)	83% (20)	Fill	59% (57)	82% (79)	79% (76)
Mult	29% (7)	50% (12)	83% (20)	Mult	69% (67)	87% (84)	93% (90)
All	23% (17)	37% (27)	69% (50)	All	53% (154)	72% (210)	81% (234)
Tense modal <u>have+en be+en MV</u>				All <u>MV</u>			
Oral	0% (0)	12% (3)	37% (9)	Oral	60% (29)	75% (36)	79% (38)
Fill	45% (11)	54% (13)	87% (21)	Fill	43% (21)	64% (31)	87% (42)
Mult	75% (18)	70% (17)	95% (23)	Mult	62% (30)	64% (31)	89% (43)
All	40% (29)	45% (33)	73% (53)	All	55% (80)	68% (98)	85% (123)
Tense modal <u>bet+ing MV</u>				All <u>modal</u>			
Oral	22% (11)	41% (20)	56% (27)	Oral	25% (62)	38% (94)	58% (140)
Fill	45% (22)	68% (33)	58% (28)	Fill	41% (99)	62% (150)	79% (191)
Mult	62% (30)	79% (38)	89% (43)	Mult	55% (132)	67% (161)	87% (210)
All	43% (63)	63% (91)	68% (98)	All	40% (293)	56% (405)	75% (541)

The advanced students answered more items correctly than did the intermediates, who, likewise, did better than the beginners. Three exceptions occur:

1. modal have+en progressive (oral: beginner 8%, intermediate 8%)
2. modal have+en passive (multiple-choice: beginner 75%, intermediate 70%).
3. modal be+ing (fill-in: intermediate 68%, advanced 58%).

The percentages for advanced students are always higher than those for the beginners with the least difference (13%) for modal be+ing (fill-in: 58%, 45%) and the greatest difference (62%) for modal have+en MV (fill-in: 66%, 4%).

Correctness percentages for modal on the multiple-choice test are higher than those on the fill-in test, which are higher than those on the oral test with these exceptions:

1. modal MV (beginner: oral 60%, fill-in 43%; intermediate: oral 75%, fill-in 64%, multiple-choice 64%)
2. modal have+en progressive (beginner: fill-in 33%, multiple-choice 29%; intermediate: 54%, 50%; advanced: 83%, 83%)
3. modal be+en (advanced: fill-in 100%; multiple-choice 97%).

For one-half of the structures involving modals, the null hypothesis is rejected. The difference in performance among the three groups of students is significant at the .05 level for modal have+en progressive and modal have+en passive; it is highly significant at the .001 level for modal have+en MV, the least correctly answered modal structure on the tests.

Perfect (Have+en)

The 42% correctness for perfect by beginners is less than the 55% by intermediates and the 78% by advanced students. En (beginner 49%, intermediate 66%, advanced 86%) is more correctly answered than have (beginner 32%, intermediate 42%, advanced 68%). Advanced students correctly answered every en item for have+en progressive (fill-in and multiple-choice tests) and modal have+en progressive (fill-in test).

The percentages for the advanced students are higher than those for the intermediates, which, in turn, are higher than those for the beginners with these exceptions:

1. modal have+en progressive (oral: beginner 8%, intermediate 8%)
2. modal have+en passive (multiple-choice: beginner 75%, intermediate 70%)
3. have+en progressive (fill-in: beginner 75%; intermediate 75%; multiple-choice: intermediate 95%, advanced 91%)
4. have+en passive (fill-in: beginner 62%, intermediate 54%; multiple-choice: beginner 87%, intermediate 87%)
5. have+en passive (fill-in: intermediate 95%, advanced 95%)
6. modal have+en progressive (multiple-choice: beginner 83%, intermediate 79%)
7. modal have+en passive (multiple-choice: beginner 79%, intermediate 75%).

The percentages on the oral test are always lower than the corresponding percentages on the fill-in test; the percentages on the fill-in test, similarly, are lower than those on the multiple-choice test with these exceptions:

1. modal have+en progressive (beginner: fill-in 33%, multiple-choice 29%; intermediate: 54%, 50%; advanced: 83%, 83%)

TABLE 15.--Perfect by Level.

Test	Percent and Number Correct			Test	Percent and Number Correct		
	Beginner	Intermediate	Advanced		Beginner	Intermediate	Advanced
Tense modal <u>have+en</u> MV							
Oral	2% (1)	12% (6)	31% (15)	Tense <u>have+en</u> <u>beten</u> MV	20% (5)	54% (13)	87% (21)
Fill	4% (2)	29% (14)	66% (32)	Fill	50% (12)	95% (23)	95% (23)
Mult	20% (10)	35% (17)	70% (34)	Mult	83% (20)	91% (22)	95% (23)
All	9% (13)	25% (37)	56% (81)	All	51% (37)	80% (58)	93% (67)
Tense modal <u>have+en</u> <u>bet+ing</u> MV							
Oral	8% (2)	8% (2)	41% (10)	Tense modal <u>have+en</u> <u>beten</u> MV	12% (3)	29% (7)	83% (20)
Fill	33% (8)	54% (13)	83% (20)	Fill	58% (14)	75% (18)	100% (24)
Mult	29% (7)	50% (12)	83% (20)	Mult	83% (20)	79% (19)	91% (22)
All	23% (17)	37% (27)	69% (50)	All	51% (37)	61% (44)	91% (66)
Tense modal <u>have+en</u> <u>beten</u> MV							
Oral	0% (0)	12% (3)	37% (9)	Tense modal <u>have+en</u> <u>beten</u> MV	20% (5)	37% (9)	66% (16)
Fill	45% (11)	54% (13)	87% (21)	Fill	62% (15)	75% (18)	79% (19)
Mult	75% (18)	70% (17)	95% (23)	Mult	79% (19)	75% (18)	87% (21)
All	40% (29)	45% (33)	73% (53)	All	54% (39)	62% (45)	77% (56)
Tense <u>have+en</u> <u>bet+ing</u> MV							
Oral	25% (6)	29% (7)	70% (17)	All <u>have</u>	6% (9)	15% (23)	45% (65)
Fill	75% (18)	75% (18)	83% (20)	Fill	37% (54)	49% (71)	77% (112)
Mult	87% (21)	95% (23)	91% (22)	Mult	53% (77)	62% (90)	84% (121)
All	62% (45)	66% (48)	81% (59)	All	32% (140)	42% (184)	68% (298)
Tense <u>have+en</u> <u>beten</u> MV							
Oral	0% (0)	20% (5)	58% (14)	All <u>en</u>	25% (49)	41% (80)	74% (143)
Fill	62% (15)	54% (13)	79% (19)	Oral	48% (93)	73% (141)	93% (179)
Mult	87% (21)	87% (21)	91% (22)	Fill	73% (142)	80% (155)	91% (176)
All	50% (36)	54% (39)	76% (55)	Mult	49% (284)	66% (376)	86% (498)
Tense <u>have+en</u> MV							
Oral	33% (32)	43% (42)	69% (67)	All <u>perfect</u>	17% (58)	30% (103)	61% (208)
Fill	37% (36)	62% (60)	92% (89)	Oral	43% (147)	63% (212)	86% (291)
Mult	68% (66)	76% (73)	89% (86)	Fill	65% (219)	72% (245)	88% (297)
All	46% (134)	60% (175)	84% (242)	Mult	42% (424)	55% (560)	78% (796)
Tense <u>have+en</u> <u>bet+ing</u> MV							
Oral	16% (4)	37% (9)	79% (19)	All			
Fill	66% (16)	91% (22)	100% (24)				
Mult	70% (17)	95% (23)	100% (24)				
All	51% (37)	75% (54)	93% (67)				

2. have+en MV (advanced: fill-in 92%, multiple-choice 89%)
3. have+en progressive (advanced: fill-in 100%, multiple-choice 100%)
4. have+en passive (intermediate: fill-in 95%, multiple-choice 91%; advanced: 95%, 95%)
5. modal have+en progressive (advanced: fill-in 100%, multiple-choice 91%)
6. modal have+en passive (intermediate: fill-in 75%, multiple-choice 75%)
7. en (all) (advanced: fill-in 93%, multiple-choice 91%).

For regular verbs, 51% (111) of the 216 en responses show en on the oral test (beginner 34%, 25; intermediate 48%, 35; advanced 70%, 51); 69% (151) show en on the fill-in test (beginner 40%, 29; intermediate 72%, 52; advanced 97%, 70); and 84% (183) do so on the multiple-choice test (beginner 76%, 55; intermediate 80%, 58; advanced 97%, 70). For irregular verbs 41% (30) show en for sing and ming on the oral test (beginner 25%, 6; intermediate 33%, 8; advanced 66%, 16); 47% (34) show en for ring and ning on the fill-in test (beginner 29%, 7; intermediate 33%, 8; advanced 79%, 19); and 58% (42) show en for spring and tring on the multiple-choice test (beginner 45%, 11; intermediate 62%, 15; advanced 66%, 15). Regular verbs are answered correctly more often than irregular ones.

The null hypothesis is rejected for eight of the ten structures involving perfect. For modal have+en progressive and for modal have+en passive the difference among the three groups of students is significant at the .05 level. It is highly significant at the .01 level for:

1. have+en progressive
2. have+en MV

3. have+en passive
4. modal have+en progressive.

It is highly significant at the .001 level for modal have+en MV, the least correctly answered perfect structure, and for have+en progressive.

Progressive (Be+ing)

For progressive the beginners' 38% correctness is lower than the intermediates' 57% and the advanced students' 71%. Be (beginner 42%, intermediate 61%, advanced 74%) is answered more correctly than ing (beginner 29%, intermediate 49%, advanced 65%). No intermediate student responded correctly with being for be+ing passive on the oral test; one beginner did.

The data for language levels show the beginners with the lowest figures, the intermediates next, and the advanced students with the highest figures with these exceptions:

1. modal be+ing (fill-in: intermediate 68%, advanced 58%)
2. be+ing passive (oral: beginner 12%, intermediate 12%; multiple-choice: intermediate 66%, advanced 58%)
3. modal perfect be+ing (multiple-choice: beginner 83%, intermediate 79%)
4. be+ing MV (fill-in: intermediate 75%, advanced 75%)
5. be+ing passive (oral: beginner 4%, intermediate 0%; multiple-choice: intermediate 79%, advanced 79%).

As elsewhere, the percentage accuracy is highest on the multiple-choice test, lower on the fill-in test, and lowest on the oral test. One instance occurs of an oral response equaling or surpassing a fill-in response (beginner: oral 12%, fill-in 12%

TABLE 16.--Progressive by Level.

Test	Percent and Number Correct			Test	Percent and Number Correct		
	Beginner	Intermediate	Advanced		Beginner	Intermediate	Advanced
Tense modal <u>bet</u> ing MV				Tense <u>bet</u> ing <u>beten</u> MV			
Oral	22% (11)	41% (20)	56% (27)	Oral	4% (1)	0% (0)	45% (11)
Fill	45% (22)	68% (33)	58% (28)	Fill	8% (2)	33% (8)	58% (14)
Mult	62% (30)	79% (38)	89% (43)	Mult	33% (8)	79% (19)	79% (19)
All	43% (63)	63% (91)	68% (98)	All	15% (11)	37% (27)	61% (44)
Tense <u>bet</u> ing <u>beten</u> MV				All <u>be</u>			
Oral	12% (3)	12% (3)	33% (8)	Oral	17% (21)	32% (39)	61% (74)
Fill	12% (3)	54% (13)	62% (15)	Fill	45% (55)	71% (86)	75% (91)
Mult	37% (9)	66% (16)	58% (14)	Mult	63% (76)	80% (96)	86% (103)
All	20% (15)	44% (32)	51% (37)	All	42% (152)	61% (221)	74% (268)
Tense have+en <u>bet</u> ing MV				All <u>ing</u>			
Oral	16% (4)	37% (9)	79% (19)	Oral	10% (5)	22% (11)	50% (24)
Fill	66% (16)	91% (22)	100% (24)	Fill	33% (16)	54% (26)	66% (32)
Mult	70% (17)	95% (23)	100% (24)	Mult	45% (22)	70% (34)	79% (38)
All	51% (37)	75% (54)	93% (67)	All	29% (43)	49% (71)	65% (94)
Tense modal have+en <u>bet</u> ing MV				All <u>progressive</u>			
Oral	12% (3)	29% (7)	83% (20)	Oral	15% (26)	29% (50)	58% (98)
Fill	58% (14)	75% (18)	100% (24)	Fill	42% (71)	66% (112)	73% (123)
Mult	83% (20)	79% (19)	91% (22)	Mult	58% (98)	77% (130)	83% (141)
All	51% (37)	61% (44)	91% (66)	All	38% (195)	57% (292)	71% (362)
Tense <u>bet</u> ing MV							
Oral	16% (4)	45% (11)	54% (13)				
Fill	58% (14)	75% (18)	75% (18)				
Mult	58% (14)	62% (15)	79% (19)				
All	44% (32)	61% (44)	69% (50)				

for be+ing passive); several occur of a fill-in response equaling or surpassing a multiple-choice response:

1. be+ing passive (advanced: fill-in 62%, multiple-choice 58%)
2. perfect be+ing (advanced: fill-in 100%, multiple-choice 100%)
3. modal perfect be+ing (advanced: fill-in 100%, multiple-choice 91%)
4. be+ing MV (beginner: fill-in 58%, multiple-choice 58%; intermediate: 75%, 62%).

Data for be+ing passive reveal significant differences at the .05 level among the three groups of students. Data for several other structures reveal highly significant differences: at the .01 level for modal perfect be+ing and for be+ing passive; at the .001 level for perfect be+ing.

Passive (Be+en)

For passive the 50% correctness by beginners compares with the 69% by intermediates and the 84% by advanced students. The en (beginner 55%, intermediate 76%, advanced 94%) is more correctly answered than be (beginner 49%, intermediate 68%, advanced 82%). The responses for progressive be+en (beginner 15%, intermediate 37%, advanced 61%) are markedly below the average be responses.

Intermediates answered the items more correctly than beginners; advanced students likewise answered them more correctly than intermediates. Three exceptions occur:

1. perfect be+en (fill-in: intermediate 95%, advanced 95%)
2. modal perfect be+en (multiple-choice: beginner 79%, intermediate 75%)
3. progressive be+en (oral: beginner 4%, intermediate 0%; multiple-choice: intermediate 79%, advanced 79%).

TABLE 17.--Passive by Level.

Test	Percent and Number Correct			Test	Percent and Number Correct		
	Beginner	Intermediate	Advanced		Beginner	Intermediate	Advanced
Tense <u>beten</u> MV							
Oral	37% (9)	58% (14)	66% (16)	Oral	41% (10)	58% (14)	87% (21)
Fill	54% (13)	66% (16)	70% (17)	Fill	58% (14)	87% (21)	95% (23)
Mult	50% (12)	75% (18)	83% (20)	Mult	66% (16)	83% (20)	100% (24)
All	47% (34)	66% (48)	73% (53)	All	55% (40)	76% (55)	94% (68)
Tense modal <u>beten</u> MV							
Oral	39% (19)	56% (27)	85% (41)	Oral	27% (39)	43% (63)	72% (105)
Fill	72% (35)	95% (46)	100% (48)	Fill	53% (77)	77% (111)	84% (121)
Mult	77% (37)	95% (46)	97% (47)	Mult	66% (96)	85% (123)	90% (130)
All	63% (91)	82% (119)	94% (136)	All	49% (212)	68% (297)	82% (356)
Tense have+ten <u>beten</u> MV							
Oral	20% (5)	54% (13)	87% (21)	Oral	41% (10)	58% (14)	87% (21)
Fill	50% (12)	95% (23)	95% (23)	Fill	58% (14)	87% (21)	95% (23)
Mult	83% (20)	91% (22)	95% (23)	Mult	66% (16)	83% (20)	100% (24)
All	51% (37)	80% (58)	93% (67)	All	55% (40)	76% (55)	94% (68)
Tense modal have+ten <u>beten</u> MV							
Oral	20% (5)	37% (9)	66% (16)	Oral	29% (49)	45% (77)	75% (126)
Fill	62% (15)	75% (18)	79% (19)	Fill	54% (91)	78% (132)	85% (144)
Mult	79% (19)	75% (18)	87% (21)	Mult	66% (112)	85% (143)	91% (154)
All	54% (39)	62% (45)	77% (56)	All	50% (252)	69% (352)	84% (424)
Tense <u>bet+ing</u> <u>beten</u> MV							
Oral	4% (1)	0% (0)	45% (11)	Oral			
Fill	8% (2)	33% (8)	58% (14)	Fill			
Mult	33% (8)	79% (19)	79% (19)	Mult			
All	15% (11)	37% (27)	61% (44)	All			

While percentages for the fill-in test are always higher than those for the oral test, the following percentages for the fill-in test equal or surpass those for the multiple-choice test:

1. be+en MV (beginner: fill-in 54%, multiple-choice 50%)
2. modal be+en (intermediate: fill-in 95%, multiple-choice 95%; advanced: 100%, 97%)
3. perfect be+en (intermediate: fill-in 95%, multiple-choice 91%, advanced 95%, 95%)
4. modal perfect be+en (intermediate: fill-in 75%, multiple-choice 75%)
5. be+en MV (intermediate: fill-in 87%, multiple-choice 83%).

For all structures only two show a highly significant difference at the .01 level among the groups of students: perfect be+en and progressive be+en.

The Infinitive (To MV)

For infinitive the 66% beginner response compares with the 79% intermediate response and the 87% advanced response. MV responses (beginner 75%, intermediate 88%, advanced 90%) show higher percentages than to responses (beginner 58%, intermediate 69%, advanced 84%). On the multiple-choice test for to + MV all intermediates supplied to correctly. Surprisingly, the beginners' 95% for MV on the fill-in test was better than the intermediates' 87% and the advanced students' 91%.

A few unexpected results occur:

1. to MV (fill-in: beginner 62%, intermediate 62%; multiple-choice: intermediate 100%, advanced 95%)
2. to MV (oral: intermediate 87%, advanced 87%; fill-in: beginner 95%, intermediate 87%, advanced 91%; multiple-choice: intermediate 91%, advanced 91%)
3. all (fill-in: beginner 79%, intermediate 75%; multiple-choice: intermediate 95%, advanced 93%).

TABLE 18.--Infinitive by Level.

Test	Percent and Number Correct		
	Beginner	Intermediate	Advanced
<u>To MV</u>			
Oral	20% (5)	45% (11)	70% (17)
Fill	62% (15)	62% (15)	87% (21)
Mult	91% (22)	100% (24)	95% (23)
All	58% (42)	69% (50)	84% (61)
<u>To MV</u>			
Oral	41% (10)	87% (21)	87% (21)
Fill	95% (23)	87% (21)	91% (22)
Mult	87% (21)	91% (22)	91% (22)
All	75% (54)	88% (64)	90% (65)
<u>All infinitive</u>			
Oral	31% (15)	66% (32)	79% (38)
Fill	79% (38)	75% (36)	89% (43)
Mult	89% (43)	95% (46)	93% (45)
All	66% (96)	79% (114)	87% (126)

For the three tests the percentages are the highest on the multiple-choice test and the lowest on the oral test; those on the fill-in test fall in between. The following do not follow this pattern: to MV (beginner: fill-in 95%, multiple-choice 87%; intermediate: oral 87%, fill-in 87%; advanced: fill-in 91%, multiple-choice 91%). Both to MV and to MV structures reveal a significant difference at the .05 level in performance among the groups of students.

The Gerund (Ing MV)

The 22% correctness by beginners is less than the 59% by intermediates and the 70% by advanced students; these averages are

TABLE 19.--Gerund by Level.

Test	Percent and Number Correct		
	Beginner	Intermediate	Advanced
Oral	12% (3)	62% (15)	54% (13)
Fill	16% (4)	66% (16)	75% (18)
Mult	37% (9)	50% (12)	83% (20)
All	22% (16)	59% (43)	70% (51)

all lower than those for the infinitive (see immediately above).

Two unexpected results occur: oral: intermediate 62%, advanced 54%; intermediate: oral 62%, fill-in 66%, multiple-choice 50%. A significant difference at the .05 level occurs in the performance of the three groups.

The Allomorphs

On the oral test the data for present s and past-tense allomorphs show that advanced students more often supplied the appropriate allomorphs than did the beginners or the intermediates. For present s the /s/ is correctly given in 39 of the 72 responses (54%) (beginner 29%, 7; intermediate 54%, 13; advanced 79%, 19), the /z/ in 41 of the 72 responses (56%) (beginner 50%, 12; intermediate 50%, 12; advanced 70%, 17) and the /Iz/ in only 28 of the 72 responses (38%) (beginner 37%, 9; intermediate 37%, 9; advanced 41%, 10). Almost no difference exists between beginning and advanced students in /Iz/ usage but considerable difference exists

for /s/. In short, whenever the students supplied the present s morpheme as the answer, they always supplied the correct present s allomorph.

For past-tense allomorphs the difference between beginning and advanced students is greatest for /t/; the difference is about the same for both /d/ and /Id/. The /t/ is supplied correctly in 120 of the 216 responses (55%) (beginner 27%, 20; intermediate 54%, 39; advanced 84%, 61), the /d/ in 111 of the 216 responses (51%) (beginner 37%, 27; intermediate 45%, 33; advanced 70%, 51), and the /Id/ in 56 of the 144 responses (38%) (beginner 25%, 12; intermediate 41%, 20; advanced 50%, 24). Of the errors made in allomorph usage, most are found in the beginners' responses; comparatively few occur in the advanced students' responses. The following errors occur:

1. /d/ for /t/ (e.g., /wɔkd/) (beginner 5, intermediate 1)
2. /Id/ for /t/ (e.g., /wɔkId/) (beginner 6, intermediate 6, advanced 2)
3. /t/ for /d/ after nasals or liquids (e.g., /smɔllt/) (beginner 6, intermediate 3, advanced 4)
4. /Id/ for /d/ after nasals (e.g., /plɪnId/) (beginner 3, intermediate 2, advanced 4)
5. change of final stem (e.g., froo for frool) (beginner 8, intermediate 3, advanced 1).

Of these 54 errors, beginners made 28, intermediates 15, and advanced students 11. In addition, 7 substitutions of /d/ for final /t/ also occur (e.g., zɪnd for the uninflected stimulus zɪnt) (beginner 4, intermediate 1, advanced 2).

Summary

Two patterns emerge from the data. For each of the structures, the percentages are normally the lowest on the oral test and the highest on the multiple-choice test with those on the fill-in test in the middle. Occasionally the percentages on the oral test equal or slightly surpass those on the fill-in test. Twice they equal or surpass those on the multiple-choice test: modal MV (intermediate: oral 75%, multiple-choice 64%) and irregular past ing forms (beginner: oral 70%, multiple-choice 66%; advanced: 91%, 70%). The latter results probably occur because of the test words used: sing on the oral test is more common than spring on the multiple-choice test.

Similarly, the level of a student's proficiency in English is a good indicator of how well a student answered the items. Correct responses by beginners surpass those by advanced students once by a single response: to MV (fill-in: beginner 95%, 23; advanced 91%, 22). In contrast, responses by advanced students often surpass those by beginners by large margins, once, in fact, by 62%: modal have+en MV (fill-in: beginner 4%, 2; advanced 66%, 32).

Statistically significant differences in the results by the three groups of students can be found in 13 of the 23 structures. At the .05 level they occur in:

1. tense be+ing passive MV
2. tense modal have+en progressive MV
3. tense modal have+en passive MV
4. to MV
5. to MV
6. ing MV.

They occur at the .01 level in:

1. tense have+en progressive MV
2. tense have+en
3. tense have+en be+en MV
4. tense modal have+en be+ing MV
5. tense be+ing be+en MV.

At the .001 level these differences occur in tense modal have+en MV and tense have+en be+ing MV. Overall the differences are especially numerous for perfect. In conclusion, the statistical data show that the student's level of proficiency in English did, indeed, affect his performance on items involving 13 structures.

Analysis by Native Language

Tense

The 58% all correctness for tense by Spanish speakers compares with 70% by Arab speakers and 82% by Japanese speakers. Similar results can be found in the data for present s (Spanish 56%, Arab 68%, Japanese 82%) and past (Spanish 60%, Arab 73%, Japanese 82%). Whereas little difference in the results exists among Spanish speakers between the best learned structure (59%) and the least learned structure (55%) for present s, a greater difference occurs for the Arabs (77%, 44%) and the Japanese (87%, 63%). The difference is more marked for the two past structures: past + MV (Spanish 67%, Arab 82%, Japanese 91%), the most correctly answered tense structure, and past progressive passive MV (31%, 37%, 47%), the least correctly answered tense structure. On the multiple-choice test the Japanese answered every item correctly for present s + MV.

TABLE 20.--Tense by Language.

Test	Percent and Number Correct			Test	Percent and Number Correct		
	Spanish	Arab	Japanese		Spanish	Arab	Japanese
<u>Tense (present s) MV</u>				<u>Tense (past) beting beten MV</u>			
Oral	11% (13)	51% (37)	79% (57)	Oral	12% (3)	20% (5)	25% (6)
Fill	56% (41)	91% (66)	84% (61)	Fill	41% (10)	33% (8)	54% (13)
Mult	90% (65)	90% (65)	100% (72)	Mult	41% (10)	58% (14)	62% (15)
All	55% (119)	77% (168)	87% (190)	All	31% (23)	37% (27)	47% (34)
<u>Tense (present s) have+ten beting MV</u>				<u>All tense (present s)</u>			
Oral	16% (4)	54% (13)	54% (13)	Oral	22% (33)	47% (68)	65% (94)
Fill	75% (18)	66% (16)	91% (22)	Fill	61% (88)	74% (107)	84% (122)
Mult	87% (21)	91% (22)	95% (23)	Mult	84% (121)	83% (120)	97% (141)
All	59% (43)	70% (51)	80% (58)	All	56% (242)	68% (295)	82% (357)
<u>Tense (present s) have+ten beten MV</u>				<u>All tense (past)</u>			
Oral	20% (5)	33% (8)	25% (6)	Oral	37% (45)	63% (76)	75% (91)
Fill	62% (15)	62% (15)	70% (17)	Fill	64% (77)	72% (87)	85% (103)
Mult	83% (20)	87% (21)	95% (23)	Mult	80% (96)	85% (103)	86% (104)
All	55% (40)	61% (44)	63% (46)	All	60% (218)	73% (266)	82% (298)
<u>Tense (present s) beten MV</u>				<u>All tense</u>			
Oral	45% (11)	41% (10)	75% (18)	Oral	29% (78)	54% (144)	70% (185)
Fill	58% (14)	41% (10)	91% (22)	Fill	62% (165)	73% (194)	85% (225)
Mult	62% (15)	50% (12)	95% (23)	Mult	82% (217)	88% (223)	92% (245)
All	55% (40)	44% (32)	87% (63)	All	58% (460)	70% (561)	82% (655)
<u>Tense (past) MV</u>							
Oral	43% (42)	73% (71)	88% (85)				
Fill	69% (67)	82% (79)	93% (90)				
Mult	89% (86)	92% (89)	92% (89)				
All	67% (195)	82% (239)	91% (264)				

In nearly every instance, the percentages on the oral test are lower than those on the fill-in test, which in turn are lower than those on the multiple-choice test. Four exceptions occur:

1. present s MV (Arab: fill-in 91%, multiple-choice 90%)
2. present s passive (Arab: oral 41%, fill-in 41%)
3. past MV (Japanese: fill-in 93%, multiple-choice 92%)
4. past progressive passive (Spanish: fill-in 41%, multiple-choice 41%).

In general the results show the Spanish with the lowest percentages, the Japanese with the highest percentages, and the Arabs in between. The results for present s passive do not follow this pattern since the Spanish percentages on all three tests are higher than the Arab ones, giving a 55% all accuracy for the Spanish to 44% for the Arabs. This exception occurs because the Arabs chose the wrong tense of be, was, for the correct present tense is, more frequently on the oral and the fill-in tests (11 times) than did the Spanish (3 times). Other exceptions include:

1. present s MV (fill-in: Arab 91%, Japanese 84%, multiple-choice: Spanish 90%, Arab 90%)
2. present s perfect progressive (oral: Arab 54%, Japanese 54%; fill-in: Spanish 75%, Arab 66%)
3. present s perfect passive (oral: Arab 33%, Japanese 25%; fill-in: Spanish 62%, Arab 62%)
4. past MV (multiple-choice: Arab 92%, Japanese 92%)
5. past progressive passive (fill-in: Spanish 41%, Arab 33%)
6. present s (all) (multiple-choice: Spanish 84%, Arab 83%).

Of the 216 responses for past MV 66% (143) show ed for the six regular verbs on the oral test (Spanish 40%, 29; Arab 73%, 53; Japanese 84%, 61); 82% (178) show ed on the fill-in test (Spanish 70%, 51; Arab 80%, 58; Japanese 95%, 69); and 98% (212) show ed on the multiple-choice test (Spanish 97%, 70; Arab 97%, 70; Japanese

100%, 72). For irregular verbs 76% (55 out of 72) show ed for sing and ming on the oral test (Spanish 54%, 13; Arab 75%, 18; Japanese 100%, 24); 80% (58) show ed for ring and ning on the fill-in test (Spanish 66%, 16; Arab 87%, 21; Japanese 87%, 21) and only 72% (52) show ed for spring and tring on the multiple-choice test (Spanish 66%, 16; Arab 79%, 19; Japanese 70%, 17). Surprisingly, the 72% for irregular verbs on the multiple-choice test is lower than the 76% on the oral test and the 80% on the fill-in test. The responses for ming, ning, and tring include 79 regular ed forms (Spanish 26; Arab 21; Japanese 32). Fifteen irregular forms (e.g., mang, nang, and trang) occur (Spanish 1, Arab 10, Japanese 4). One Arab also gave nong. More Arabs than Japanese or Spanish, thus, gave strong verb forms. Use of such forms probably reflects a generalization based on well-learned paradigms like sing, sang, sung rather than grammatical transfer from the native language.¹³

Statistically significant differences among the three language groups show up in two tense structures: present s MV (.05) and present s passive (.05).¹⁴

¹³Although vowel changes occur in some verbs in all three languages, in none of the languages is the vowel change systematically used to indicate changes in tense in the way that English does. Examples of vowel change are: Arabic /yaqūmu/ "he gets up"; /qāma/ "he bought"; /qumtu/ "I bought"; Spanish /dwermo/ "I sleep"; /dormimos/ "we sleep"; /dormi/ "I slept"; /dormimos/ "we slept"; Japanese /su/ "I do"; /seri/ "I did."

¹⁴See Appendix C for chi square values by native language.

Modal

The data show a 43% correctness for all modal structures for the Spanish, 53% for the Arabs, and 75% for the Japanese. All percentages for be (Spanish 54%, Arab 64%, and Japanese 88%) and for MV (Spanish 50%, Arab 73%, and Japanese 84%) remain close and much higher than those for have (Spanish 27%, Arab 33%, Japanese 56%). The least correctly answered modal structure for all three languages is modal perfect MV (Spanish 18%, Arab 26%, Japanese 44%). On the multiple-choice test for modal perfect passive all Japanese speakers gave the correct have response.

Once again the percentages are the highest on the multiple-choice test and the lowest on the oral test with those on the fill-in test in the middle with these exceptions:

1. modal MV (Spanish: oral 54%, fill-in 43%, multiple-choice 54%; Arab 77%, 70%, 72%)
2. modal have+en MV (Spanish: fill-in 25%, multiple-choice 25%)
3. modal have+en progressive MV (Spanish: fill-in 37%, multiple-choice 33%; Arab: 50%, 45%; Japanese: 83%, 83%)
4. modal be+ing MV (Japanese: fill-in 95%, multiple-choice 93%)
5. modal be+en MV (Arab: fill-in 97%, multiple-choice 93%)
6. be (all) (Japanese: fill-in 95%, multiple-choice 95%).

The results for modal, like those for tense, show the Spanish with the lowest percentages, the Japanese with the highest percentages and the Arab percentages in the middle. Of the all averages, only the Spanish 46% for modal be+ing MV does not follow this pattern since the Arab average is less at 42%. Several other exceptions occur, too, especially on the oral test:

TABLE 21.--Modal by Language.

Test	Percent and Number Correct				Test	Percent and Number Correct			
	Spanish	Arab	Japanese			Spanish	Arab	Japanese	
Tense modal <u>MV</u>					Tense modal <u>beten MV</u>				
Oral	54% (26)	77% (37)	83% (40)		Oral	35% (17)	66% (32)	79% (38)	
Fill	43% (21)	70% (34)	81% (39)		Fill	75% (36)	97% (47)	95% (46)	
Mult	54% (26)	72% (35)	89% (43)		Mult	79% (38)	93% (45)	97% (47)	
All	50% (73)	73% (106)	84% (122)		All	63% (91)	86% (124)	90% (131)	
Tense modal <u>have+en MV</u>					All modal + <u>have</u>				
Oral	6% (3)	22% (11)	16% (8)		Oral	10% (10)	16% (16)	22% (22)	
Fill	25% (12)	25% (12)	50% (24)		Fill	34% (33)	38% (37)	66% (64)	
Mult	25% (12)	31% (15)	70% (34)		Mult	37% (36)	45% (44)	81% (78)	
All	18% (27)	26% (38)	44% (66)		All	27% (79)	33% (97)	56% (164)	
Tense modal <u>have+en bet+ing MV</u>					All modal + <u>be</u>				
Oral	16% (4)	12% (3)	29% (7)		Oral	32% (31)	44% (43)	73% (71)	
Fill	37% (9)	50% (12)	83% (20)		Fill	56% (54)	68% (66)	95% (92)	
Mult	33% (8)	45% (11)	83% (20)		Mult	76% (73)	79% (76)	95% (92)	
All	29% (21)	36% (26)	65% (47)		All	54% (158)	64% (185)	88% (255)	
Tense modal <u>have+en bet+en MV</u>					All modal + <u>MV</u>				
Oral	12% (3)	8% (2)	29% (7)		Oral	54% (26)	77% (37)	83% (40)	
Fill	50% (12)	54% (13)	83% (20)		Fill	43% (21)	70% (34)	81% (39)	
Mult	66% (16)	75% (18)	100% (24)		Mult	54% (26)	72% (35)	89% (43)	
All	43% (31)	45% (33)	70% (51)		All	50% (73)	73% (106)	84% (122)	
Tense modal <u>bet+ing MV</u>					All modal				
Oral	29% (14)	22% (11)	68% (33)		Oral	27% (67)	40% (96)	55% (133)	
Fill	37% (18)	39% (19)	95% (46)		Fill	45% (108)	57% (137)	81% (195)	
Mult	72% (35)	64% (31)	93% (45)		Mult	56% (135)	64% (155)	88% (213)	
All	46% (67)	42% (61)	86% (124)		All	43% (310)	53% (388)	75% (541)	

1. modal have+en MV (oral: Arab 22%, Japanese 16%; fill-in: Spanish 25%, Arab 25%)
2. modal have+en progressive MV (oral: Spanish 16%, Arab 12%)
3. modal have+en passive MV (oral: Spanish 12%, Arab 8%)
4. modal be+en MV (fill-in: Arab 97%, Japanese 95%).

For modal MV and for modal be+en MV, the results show a statistically significant difference (.05) in the performance of the three different language groups; for modal be+ing MV the difference is highly significant (.01).

Perfect (Have+en)

The 46% all correctness for perfect by the Spanish is less than the 56% by the Arabs and the 73% by the Japanese. The en of perfect (Spanish 53%, Arab 65%, Japanese 82%) is more correctly answered than the have (Spanish 37%, Arab 44%, Japanese 62%). The Japanese answered every item correctly on the multiple-choice test for:

1. modal have+en passive MV
2. have+en progressive MV
3. modal have+en progressive MV (and on the fill-in test, too).

Every percentage on the oral test is lower than the corresponding percentage on the fill-in test. Many fill-in percentages, though, are higher than or equal to the multiple-choice percentages:

1. modal have+en MV (Spanish: fill-in 25%, multiple-choice 25%)
2. modal have+en progressive MV (Spanish: fill-in 37%, multiple-choice 33%; Arab: 50%, 45%; Japanese 83%, 83%)
3. have+en progressive MV (Spanish and Arab: fill-in 83%, multiple-choice 83%)
4. have+en passive MV (Japanese: fill-in 95%, multiple-choice 91%)

TABLE 22.--Perfect by Language.

Test	Percent and Number Correct			Test	Percent and Number Correct		
	Spanish	Arab	Japanese		Spanish	Arab	Japanese
Tense modal have+en MV				Tense have+en beten MV			
Oral	6% (3)	22% (11)	16% (8)	Oral	33% (8)	58% (14)	70% (17)
Fill	25% (12)	25% (12)	50% (24)	Fill	75% (18)	70% (17)	95% (23)
Mult	25% (12)	31% (15)	70% (34)	Mult	91% (22)	87% (21)	91% (22)
All	18% (27)	26% (38)	46% (66)	All	66% (48)	72% (52)	86% (62)
Tense modal have+en bet+ing MV				Tense modal have+en bet+ing MV			
Oral	16% (4)	12% (3)	29% (7)	Oral	29% (7)	41% (10)	54% (13)
Fill	37% (9)	50% (12)	83% (20)	Fill	75% (18)	58% (14)	100% (24)
Mult	33% (8)	45% (11)	83% (20)	Mult	70% (17)	83% (20)	100% (24)
All	29% (21)	36% (26)	65% (47)	All	58% (42)	61% (44)	84% (61)
Tense modal have+en bet+en MV				Tense modal have+en bet+en MV			
Oral	12% (3)	8% (2)	29% (7)	Oral	20% (5)	45% (11)	58% (14)
Fill	50% (12)	54% (13)	83% (20)	Fill	45% (11)	75% (18)	95% (23)
Mult	66% (16)	75% (18)	100% (24)	Mult	70% (17)	75% (18)	95% (23)
All	43% (31)	45% (33)	70% (51)	All	45% (33)	65% (47)	83% (60)
Tense have+en bet+ing MV				All have			
Oral	16% (4)	54% (13)	54% (13)	Oral	13% (19)	25% (37)	28% (41)
Fill	75% (18)	66% (16)	91% (22)	Fill	45% (66)	47% (68)	71% (103)
Mult	87% (21)	91% (22)	95% (23)	Mult	53% (77)	60% (87)	86% (124)
All	59% (43)	70% (51)	80% (58)	All	37% (162)	44% (192)	62% (268)
Tense have+en bet+en MV				All en			
Oral	20% (5)	33% (8)	25% (6)	Oral	28% (55)	47% (92)	65% (125)
Fill	62% (15)	62% (15)	70% (17)	Fill	57% (110)	68% (132)	89% (171)
Mult	83% (20)	87% (21)	95% (23)	Mult	73% (141)	78% (151)	94% (181)
All	55% (40)	61% (44)	63% (46)	All	53% (306)	65% (375)	82% (477)
Tense have+en MV				All perfect			
Oral	27% (26)	48% (47)	70% (68)	Oral	22% (74)	38% (129)	49% (166)
Fill	44% (43)	65% (63)	82% (79)	Fill	52% (176)	59% (200)	81% (274)
Mult	67% (65)	75% (72)	91% (88)	Mult	64% (218)	70% (238)	90% (305)
All	46% (134)	63% (182)	81% (235)	All	46% (468)	56% (567)	73% (745)
Tense have+en bet+ing MV							
Oral	37% (9)	41% (10)	54% (13)				
Fill	83% (20)	83% (20)	91% (22)				
Mult	83% (20)	83% (20)	100% (24)				
All	68% (49)	69% (50)	81% (59)				

5. modal have+en progressive MV (Spanish: fill-in 75%, multiple-choice 70%; Japanese 100%, 100%)
6. modal have+en passive MV (Arab: fill-in 75%, multiple-choice 75%; Japanese: 95%, 95%).

The all percentages for each structure usually show the Spanish with the lowest percentages, the Japanese with the highest, and the Arab percentages in the middle, but these exceptions occur:

1. modal have+en MV (oral: Arab 22%, Japanese 16%; fill-in: Spanish 25%, Arab 25%)
2. modal have+en progressive MV (oral: Spanish 16%, Arab 12%)
3. modal have+en passive MV (oral: Spanish 12%, Arab 8%)
4. have+en progressive MV (oral: Arab 54%, Japanese 54%; fill-in: Spanish 75%, Arab 66%)
5. have+en passive MV (oral: Arab 33%, Japanese 25%, fill-in: Spanish 62%, Arab 62%)
6. have+en progressive MV (fill-in and multiple-choice: Spanish 83%, Arab 83%)
7. have+en passive MV (fill-in: Spanish 75%, Arab 70%; multiple-choice: 91%, 87%)
8. modal have+en progressive MV (fill-in: Spanish 75%, Arab 58%).

The Spanish percentages never surpass or equal the Japanese percentages but the Arab percentages occasionally do. The Spanish, though, sometimes do better than the Arabs.

Of the en responses 51% (111) of the 216 responses show en on the oral test (Spanish 29%, 21; Arab 52%, 38; Japanese 72%, 52); 69% (151) show en on the fill-in test (Spanish 51%, 37; Arab 72%, 52; Japanese 86%, 62) and 84% (183) do on the multiple-choice test (Spanish 70%, 51; Arab 83%, 60; Japanese 100%, 72). Percentages for the irregular verbs are lower. On the oral test 41% (30) of the 72 responses show en for sing and ming (Spanish 25%, 6; Arab 33%, 8; Japanese 66%, 16); 47% (34) show en for ring and ning on the fill-in test (Spanish 25%, 6; Arab 45%, 11; Japanese 70%, 17);

and 58% (42) do for spring and tring on the multiple-choice test (Spanish 58%, 14; Arab 50%, 12; Japanese 66%, 16). For ming, ning, and tring, both ed (e.g., minged) and ung (e.g., mung) were counted as correct. Of the 56 ed forms, the Spanish had 15, the Arabs 13, and the Japanese 28. Of the 17 correct irregular forms, the Spanish gave 4, the Arabs 9, and the Japanese 4. In addition, 6 incorrect irregular forms (e.g., mang, nang, nong) occurred (Arab 5, Japanese 1). The Arabs, thus, gave irregular forms more often (14) than either the Spanish (4) or the Japanese (5).

Of the ten structures for perfect, statistically significant differences among the three language groups can be found for only three: a significant difference (.05) for have+en passive MV and modal have+en passive MV, both structures requiring been, and a highly significant difference (.01) for have+en MV.

Progressive (Be+ing)

The 44% all correctness for progressive by the Spanish compares with the 52% by the Arabs and the 71% by the Japanese. While be is learned equally well by the Spanish (50%) and the Arabs (50%) but much better by the Japanese (77%), the ing is learned less well by the Spanish (31%) than by either the Arabs (56%) or the Japanese (56%). The Japanese answered every item correctly for two similar structures: perfect be+ing MV on the multiple-choice test and modal perfect be+ing MV on the fill-in and multiple-choice tests. The results for be+ing passive MV (Spanish 31%, Arab 37%, Japanese 47%) and for perfect be+ing MV (Spanish 68%, Arab 69%,

TABLE 23.--Progressive by Language.

Test	Percent and Number Correct			Test	Percent and Number Correct		
	Spanish	Arab	Japanese		Spanish	Arab	Japanese
Tense modal <u>be+ing</u> MV							
Oral	29% (14)	22% (11)	68% (33)	Tense <u>be+ing</u> beten MV	8% (2)	16% (4)	25% (6)
Fill	37% (18)	39% (19)	95% (46)	Oral	12% (3)	37% (9)	50% (12)
Mult	72% (35)	64% (31)	93% (45)	Fill	50% (12)	79% (19)	62% (15)
All	46% (67)	42% (61)	86% (124)	All	23% (17)	44% (32)	45% (33)
Tense <u>be+ing</u> beten MV							
Oral	12% (3)	20% (5)	25% (6)	All <u>be</u>			
Fill	41% (10)	33% (8)	54% (13)	Oral	27% (33)	30% (36)	54% (65)
Mult	41% (10)	58% (14)	62% (15)	Fill	55% (66)	50% (61)	87% (105)
All	31% (23)	37% (27)	47% (34)	Mult	68% (82)	70% (85)	90% (108)
Tense have+en <u>be+ing</u> MV							77% (278)
Oral	37% (9)	41% (10)	54% (13)	All <u>ing</u>	50% (181)	50% (182)	
Fill	83% (20)	83% (20)	91% (22)	Oral	14% (7)	29% (14)	39% (19)
Mult	83% (20)	83% (20)	100% (24)	Fill	29% (14)	58% (28)	66% (32)
All	68% (49)	69% (50)	81% (59)	Mult	50% (24)	81% (39)	64% (31)
Tense modal have+en <u>be+ing</u> MV							56% (82)
Oral	29% (7)	41% (10)	54% (13)	All <u>progressive</u>	31% (45)	56% (81)	
Fill	75% (18)	58% (14)	100% (24)	Oral	23% (40)	29% (50)	50% (84)
Mult	70% (17)	83% (20)	100% (24)	Fill	47% (80)	52% (89)	81% (137)
All	58% (42)	61% (44)	84% (61)	Mult	63% (106)	75% (124)	82% (139)
Tense <u>be+ing</u> MV							71% (360)
Oral	20% (5)	41% (10)	54% (13)	All	44% (226)	52% (263)	
Fill	45% (11)	79% (19)	83% (20)				
Mult	50% (12)	83% (20)	66% (16)				
All	38% (28)	68% (49)	68% (49)				

Japanese 81%) show the least differences among the three language groups.

The fill-in percentages are always greater than the corresponding oral percentages. Not every multiple-choice percentage, though, is greater than its corresponding fill-in percentage as these results show:

1. modal be+ing MV (Japanese: fill-in 95%, multiple-choice 93%)
2. be+ing passive MV (Spanish: fill-in 41%, multiple-choice 41%)
3. perfect be+ing MV (Spanish and Arab: fill-in 83%, multiple-choice 83%)
4. modal perfect be+ing MV (Spanish: fill-in 75%, multiple-choice 70%; Japanese 100%, 100%)
5. be+ing MV (Japanese: fill-in 83%, multiple-choice 66%)
6. ing (all) (Japanese: fill-in 66%, multiple-choice 64%).

The pattern of low Spanish, intermediate Arab, and high Japanese percentages occurs less consistently here as the results for be (all) and ing (all) mentioned before indicate. Further exceptions include:

1. be+ing passive MV (fill-in: Spanish 41%, Arab 33%)
2. perfect be+ing MV (fill-in and multiple-choice: Spanish 83%, Arab 83%)
3. modal perfect be+ing MV (fill-in: Spanish 75%, Arab 58%)
4. be+ing MV (multiple-choice: Arab 83%, Japanese 66%; all: Arab 68%, Japanese 68%)
5. be+ing passive MV (multiple-choice: Arab 79%, Japanese 62%).

In addition, the 46% all correctness by the Spanish for modal be+ing MV is greater than the 42% by the Arabs. The Spanish percentages never equal or surpass the Japanese percentages. The gap between Spanish and Japanese is smallest on the multiple-choice test (19%) and widest on the fill-in test (34%).

The only progressive structure which showed a statistically significant difference among the three language groups is modal be+ing MV (.01).

Passive (Be+en)

For passive the 54% correctness for the Spanish is less than the 67% for the Arabs and the 82% for the Japanese. En percentages (Spanish 63%, Arab 70%, Japanese 91%) are higher than be percentages (Spanish 53%, Arab 66%, Japanese 80%). Of the five structures testing for be, the results for progressive be+en MV are particularly low (Spanish 23%, Arab 44%, Japanese 45%). No language group ever got a 100% accuracy percentage for be though the Arabs on the fill-in test and the Japanese on the multiple-choice test for modal be+en MV both came close at 97%. For the only en structure on the test, be+en MV, the Japanese achieved 100% on the multiple-choice test.

With the exception of the 41% by the Arabs on the oral and fill-in tests for be+en MV, all other fill-in percentages surpass the oral percentages. The multiple-choice percentages surpass the fill-in percentages except in these cases:

1. modal be+en MV (Arab: fill-in 97%, multiple-choice 93%)
2. perfect be+en MV (Japanese: fill-in 95%, multiple-choice 91%)
3. modal perfect be+en MV (Arab: fill-in 75%, multiple-choice 75%; Japanese: 95%, 95%)
4. be+en MV (and all en) (Spanish: fill-in 75%, multiple-choice 75%).

The pattern of low Spanish, intermediate Arab, and high Japanese percentages occurs regularly for the passive. Tense

TABLE 24.--Passive by Language.

Test	Percent and Number Correct			Test	Percent and Number Correct		
	Spanish	Arab	Japanese		Spanish	Arab	Japanese
Tense <u>beten</u> MV							
Oral	45% (11)	41% (10)	75% (18)	Oral	41% (10)	66% (16)	79% (19)
Fill	58% (14)	41% (10)	91% (22)	Fill	75% (18)	70% (17)	95% (23)
Mult	62% (15)	50% (12)	95% (23)	Mult	75% (18)	75% (18)	100% (24)
All	55% (40)	44% (32)	87% (63)	All	63% (46)	70% (51)	91% (66)
Tense modal <u>beten</u> MV							
Oral	35% (17)	66% (32)	79% (38)	Oral	29% (43)	49% (71)	64% (93)
Fill	75% (36)	97% (47)	95% (46)	Fill	56% (82)	70% (101)	87% (126)
Mult	79% (38)	93% (45)	97% (47)	Mult	72% (104)	79% (115)	90% (130)
All	63% (91)	86% (124)	90% (131)	All	53% (229)	66% (287)	80% (349)
Tense <u>haveten</u> <u>beten</u> MV							
Oral	33% (8)	58% (14)	70% (17)	Oral	41% (10)	66% (16)	79% (19)
Fill	75% (18)	70% (17)	95% (23)	Fill	75% (18)	70% (17)	95% (23)
Mult	91% (22)	87% (21)	91% (22)	Mult	75% (18)	75% (18)	100% (24)
All	66% (48)	72% (52)	86% (62)	All	63% (46)	70% (51)	91% (66)
Tense modal <u>haveten</u> <u>beten</u> MV							
Oral	20% (5)	45% (11)	58% (14)	Oral	32% (53)	51% (87)	66% (112)
Fill	45% (11)	75% (18)	95% (23)	Fill	59% (100)	70% (118)	88% (149)
Mult	70% (17)	75% (18)	95% (23)	Mult	72% (122)	79% (133)	91% (154)
All	45% (33)	65% (47)	83% (60)	All	54% (275)	67% (338)	82% (415)
Tense <u>beten</u> <u>beten</u> MV							
Oral	8% (2)	16% (4)	25% (6)	Oral	32% (53)	51% (87)	66% (112)
Fill	12% (3)	37% (9)	50% (12)	Fill	59% (100)	70% (118)	88% (149)
Mult	50% (12)	79% (19)	62% (15)	Mult	72% (122)	79% (133)	91% (154)
All	23% (17)	44% (32)	45% (33)	All	54% (275)	67% (338)	82% (415)

be+en MV does not follow this pattern as the Spanish 55% all percentage is higher than the Arab 44%. Other exceptions include:

1. modal be+en MV (fill-in: Arab 97%, Japanese 95%)
2. perfect be+en MV (fill-in: Spanish 75%, Arab 70%; multiple-choice: Spanish 91%, Arab 87%, Japanese 91%)
3. progressive be+en MV (multiple-choice: Arab 79%, Japanese 62%)
4. be+en MV (and all en) (fill-in: Spanish 75%, Arab 70%; multiple-choice: Spanish 75%, Arab 75%).

The multiple choice results for perfect be+en MV are especially interesting since both Spanish and Japanese have 91%. Only in this instance does the Spanish percentage equal the Japanese percentage. The Spanish percentage never surpasses the Japanese percentage on any test for any structure. Statistically significant differences among the language groups at the .05 level occur for be in: be+en MV, modal be+en MV, perfect be+en MV, and modal perfect be+en MV.

The Infinitive (To MV)

The 65% Spanish all response for infinitive is lower than the 81% Arab response or the 85% Japanese response. All language groups supplied MV (Spanish 79%, Arab 84%, Japanese 90%) more correctly than they did to (Spanish 52%, Arab 79%, Japanese 80%).

All fill-in percentages exceed the oral percentages, but no multiple-choice percentages surpass the corresponding fill-in percentages (Spanish: fill-in 87%, multiple-choice 83%, Arab: 87%, 87%; Japanese: 100%, 100%).

The general pattern for the language groups prevailed here, too, though the Arabs did particularly well. Exceptions to the pattern included:

TABLE 25.--Infinitive by Language.

Test	Percent and Number Correct		
	Spanish	Arab	Japanese
<u>To MV</u>			
Oral	20% (5)	54% (13)	62% (15)
Fill	45% (11)	87% (21)	79% (19)
Mult	91% (22)	95% (23)	100% (24)
All	52% (38)	79% (57)	80% (58)
<u>To MV</u>			
Oral	66% (16)	79% (19)	70% (17)
Fill	87% (21)	87% (21)	100% (24)
Mult	83% (20)	87% (21)	100% (24)
All	79% (57)	84% (61)	90% (65)
<u>All infinitive</u>			
Oral	43% (21)	66% (32)	66% (32)
Fill	66% (32)	87% (42)	89% (43)
Mult	87% (42)	90% (44)	100% (48)
All	65% (95)	81% (118)	85% (123)

1. to MV (fill-in: Arab 89%, Japanese 79%)
2. to MV (oral: Arab 79%, Japanese 70%; fill-in: Spanish 87%, Arab 87%)
3. all (oral: Arab 66%, Japanese 66%).

Neither structure shows statistically significant results.

The Gerund (Ing MV)

The 27% correctness by the Spanish for gerund compares with the 66% for the Arabs and the 52% for the Japanese. The responses by language groups fail to follow the general pattern, as the Arab all percentage is better than that of the Japanese, the only time such a result occurs. Responses on the three tests,

TABLE 26.--Gerund by Language.

Test	Percent and Number Correct					
	Spanish		Arab		Japanese	
Oral	20%	(5)	54%	(13)	54%	(13)
Fill	37%	(9)	66%	(16)	54%	(13)
Mult	25%	(6)	79%	(19)	66%	(16)
All	27%	(20)	66%	(48)	52%	(42)

though, show the expected pattern otherwise but with two exceptions:

1. Japanese: oral 54%, fill-in 54%
2. Spanish: fill-in 37%, multiple-choice 25%.

The Spanish all percentage here is markedly lower than usual. The only lower Spanish all percentages on the test are the 18% for modal have+en MV and the 23% for be+ing be+en MV.

The Allomorphs

The oral test data for the allomorphs of the present s and past morphemes show a consistent pattern: the Spanish supplied the fewest correct responses; the Japanese supplied the most; the Arabs nearly always fell in the middle.

For present s the /s/ is correctly given in 39 of the 72 responses (54%) (Spanish 20%, 5; Arab 62%, 15; Japanese 79%, 19), the /z/ in 41 (56%) (Spanish 29%, 7; Arab 58%, 14; Japanese 83%, 20); and the /Iz/ in 28 (38%) (Spanish 8%, 2; Arab 33%, 8;

Japanese 75%, 18). The differences in the percentages between Arab and Spanish responses for /s/, /z/, and /Iz/ are 42, 29, and 25, respectively, while the differences between Japanese and Spanish responses are 59, 54, and 67, respectively. These differences are clearly large. The Spanish, in particular, did very poorly.

For the past tense /t/ is correctly given in 120 of the 216 responses (55%) (Spanish 30%, 22; Arab 52%, 38; Japanese 83%, 60); /d/ in 111 of the 216 responses (Spanish 19%, 14; Arab 55%, 40; Japanese 79%, 57); and /Id/ in 56 (38%) of the 144 responses (Spanish 20%, 10; Arab 45%, 22; Japanese 50%, 24). Both the Japanese and the Spanish correctly supplied /t/ more often than /d/; the Arabs supplied /d/ more often than /t/. While the Arabs and the Japanese supplied /Id/ the least often, the Spanish supplied /Id/ a little more often than they did /d/.

Excluding zero allomorphs, errors in past allomorph usage occurred in 54 (15%) of the 341 responses. Most were made by the Spanish (22) and the Arabs (23); the Japanese made only 9 errors. Incorrect past allomorph responses included:

1. /d/ for /t/ (e.g., /jæmpd/) (Arab 4, Japanese 2)
2. /Id/ for /t/ (e.g., /jæmpId/) (Spanish 9, Arab 4, Japanese 1)
3. /t/ for /d/ after nasals or liquids (e.g., /plint/) (Spanish 11, Arab 2)¹⁵
4. /Id/ for /d/ after nasals (e.g., /klinId/) Spanish 2, Arab 5, Japanese 2)

¹⁵In English /t/ sometimes occurs as the past allomorph after nasals and liquids as in /fEl't/, /bærnt/, and /drEm't/. Consequently this use of /t/ does not need to be regarded as an error; however, it fails to follow the regular past pattern whereby /d/ follows any voiced phoneme except /d/.

5. change of final stem (e.g., froo for frool) (Arab 8, Japanese 4).

Besides these errors, 7 instances occurred of substitution of /d/ for /t/ in the stem with zero allomorph added (e.g., zind for the uninflected zint) (Arab 4, Japanese 3).

Summary

An analysis of the data by language groups reveals two trends: (1) the highest percentages occur on the multiple-choice test; the lowest, on the oral test; and (2) the Spanish consistently gave the fewest correct responses; the Japanese, the most.

It is surprising that speakers of Japanese, a non-Indo-European language, should consistently do better than speakers of Spanish, an Indo-European language which has more similarities to English in grammar and vocabulary. English proficiency scores used in classifying students into beginning, intermediate, and advanced levels may help explain these results. Little difference occurs in the composite scores by language groups: out of 100 points the Spanish average 62; the Arabs, 65; and the Japanese, 65. Of the three areas on the proficiency test, the scores for composition (Spanish 66, Arab 67, and Japanese 66) and aural comprehension (Spanish 63, Arab 67, Japanese 62) are not far apart. Grammar scores are not as close: Spanish 58, Arab 63, Japanese 67. The spread in grammar scores is most noticeable at the beginning language level (beginning Spanish 31, beginning Arab 45, beginning Japanese 50). The grammar score is the crucial one, since our

study mainly tested the student's knowledge of English grammar rather than his ability in aural comprehension or composition.

Not one of the Spanish all percentages for the 23 structures ever equaled its Japanese counterpart. Only on the multiple-choice test for have+en be+en MV did the Spanish (91%) do as well as the Japanese (91%). The Spanish all percentages for tense (present s) be+en MV (55%) and for modal be+ing MV (46%) did surpass the Arab percentages (44% and 42%, respectively). Moreover, the 50% all correctness by the Spanish for be of the progressive equaled the 50% by the Arabs as did the Spanish 56% for ing of the progressive.

In contrast the 66% by the Arabs for gerund surpassed the 52% by the Japanese, and the Arab 68% for tense be+ing MV equaled the Japanese 68%. On the following tests, the Arab percentages (given first) surpassed those of the Japanese:

1. tense modal have+en MV (oral: 22%, 16%)
2. tense modal be+en MV (fill-in: 97%, 95%)
3. tense be+ing be+en MV (multiple-choice: 79%, 62%)
4. to MV (fill-in: 87%, 79%).
5. to MV (oral: 79%, 70%).

The 54% by the Arabs on the oral test for tense (present s) have+en be+ing MV equaled the 54% by the Japanese; the Arab 92% for tense (past) on the multiple-choice test also equaled the Japanese 92%. The Arabs, thus, did especially well in supplying ing of the progressive and the gerund.

Statistically significant differences in the results by language groups can be found in 8 of the 23 structures. At the .05 level they occur in:

1. tense (present s) MV
2. tense modal MV
3. tense modal be+en MV
4. tense have+en be+en MV
5. tense modal have+en be+en MV
6. tense be+en MV.

Two occur at the .01 level: (1) tense modal be+ing MV and (2) tense have+en MV. Most of these differences involve the en of perfect or the be of passive.

CHAPTER IV

SUMMARY AND CONCLUSION

Statistically significant differences in the results by level of proficiency occur in 13 of the 23 verb structures while significant differences by language occur in 8. Two structures show statistically significant differences for both level and language: (1) tense have+en MV (.01, .01, respectively) and (2) tense have+en be+en MV (.01, .05). Three structures show nonsignificant differences for both level and language:

(1) tense (past) MV; (2) tense (present s) have+en be+en MV; (3) tense be+en MV. In the remaining 18 structures, the results by level and language differ: a statistically significant difference in the result for one occurs for each of these structures while a nonsignificant difference occurs in the other. For instance, the to MV results show a significant difference (.05) by level of proficiency but a nonsignificant difference by language. In brief, little overlap occurs in the statistical results by level and by language.

The data from our study suggest that nonnative speakers learn the elements of the English auxiliary and the infinitive and gerund transformations in this order:

- ✓1. infinitive
- 2. tense
- 3. passive
- 4. perfect
- 5. modal
- 6. progressive
- / 7. gerund.

The order for perfect, modal, and progressive, in particular, is not clear. The data show an interesting pattern concerning the acquisition of the two transformations: the infinitive (to MV) is acquired before all elements of the auxiliary; the gerund (ing MV), in contrast, is acquired last.¹ Tense (past) is acquired before tense (present s); the en of passive, before the be; the en of perfect before the have; and the be of progressive before the ing.² Of the structures that can follow a modal, MV and be are acquired much earlier than have.

Few comparisons of our study with other Berko-type studies can be made since they mainly investigated noun morphology. If they did investigate verb morphology, they nearly always restricted themselves to the acquisition of the present s and the past allomorphs. For present s our study shows that nonnative speakers acquire /s/ and /z/ before /Iz/. This finding agrees with most previous Berko-type studies (e.g., Bellamy and Bellamy 1970; Ramer and Rees 1973). For past and the en of perfect our study shows that nonnative speakers acquire /t/ and /d/ before /Id/.³

¹Both Arab and intermediate students acquired the gerund before they acquired perfect, modal, or progressive.

²The Japanese acquired present s and past at the same time; the Arabs acquired the ing of progressive before the be.

³The Spanish supplied /Id/ more frequently than /d/.

Similar findings have been found in earlier studies (e.g., Dever and Gardner 1970; Lovell and Bradbury 1971). A few studies of native English-speaking children showed that past was acquired before present s, as our findings for nonnative speakers suggest (McNeill 1970: 83 and Cooper 1967: 83). Although this study indicates that nonnative speakers acquire the be of progressive before ing (with the exception of the Arabs), several studies on native English speakers indicate the reverse (Dale 1972: 54; Vogel 1970: 60-1; and Martinez-Bernal 1972: 120).⁴

All 23 verb structures may be classified by the number of elements composing them. There are 2 element structures (e.g., to MV); 3 element structures (e.g., tense be+ing MV); 4 element structures (e.g., tense be+ing be+en MV) and 5 element structures (e.g., tense modal have+en be+en MV). As might be expected, the fewer the number of elements, the greater the number of correct responses. Thus total correct responses for 2 element structures generally surpass those for 3 element structures, which, in turn, surpass those for 4 element structures. The data show, though, that the total correct responses for 5 element structures may slightly exceed those for 4 element structures. Exceptions do occur. The most noticeable exception is ing MV, a 2-element structure ranking in the lowest quarter of the 23 structures. Two 4-element structures (tense modal be+en MV and tense have+en

⁴In the Vogel and Martinez-Bernal studies other factors such as nonstandard dialects and demonstrated test question flaws must also be taken into account.

be+en MV) are learned much more thoroughly than this general pattern would indicate.

Several trends emerge from our study. In accordance with the idea that receptive tasks are accomplished more easily than productive tasks, the correct responses on the receptive task (the multiple-choice test) nearly always outnumber those on each productive task (the oral and the fill-in tests). Similarly, in accordance with the idea that written tasks are accomplished more easily than oral tasks, the correct responses on each written task (the fill-in and multiple-choice tests) usually outnumber those on the oral task (the oral test). (See Anisfeld and Tucker 1967; Koziol 1971: 111-2). The greatest number of correct responses occurs on the multiple-choice test; the fewest, on the oral test; the number of correct responses on the fill-in test usually falls in the middle. Similarly, the level of a student's proficiency in English usually gives a good indication of his performance. The advanced students gave more correct responses than beginners in every case except one: to MV (fill-in: beginner 95%, 23; advanced 91%, 22). Correct responses by intermediate students fell in between those by beginning and by advanced students. Exceptions occur now and then (e.g., tense modal have+en be+en multiple choice: beginner 79%, 19; intermediate 75%, 18; and to MV multiple choice: intermediate 100%, 24; advanced 95%, 23).

The data by native language group also indicate a trend. The Spanish gave the fewest correct responses while the Japanese gave the most; the Arab responses fell in the middle. (In four

instances the Arab response did not fall in the middle. For tense (present s) be+en MV the Spanish 55% surpassed the Arab 44%; for tense modal be+ing MV the Spanish 46% surpassed the Arab 42%; for gerund (ing MV) the Arab 66% surpassed the Japanese 52%; and for tense be+ing MV the Arab 68% equaled the Japanese 68%). Since the grammar scores on the proficiency test in English show this ascending Spanish-Arab-Japanese order, the result is not unexpected (see Summary, Chapter III). Our data reinforce the results of the proficiency test. Because of this, our results do not necessarily mean that this pattern would have occurred if the grammar proficiency scores by language had been identical. The real differences in English learning by Arabic, Japanese, and Spanish speakers may be less than our study indicates.

Analysis of variance reveals highly significant differences (.001) for performance by level of proficiency and by native language on the oral test, the fill-in test, and the multiple-choice test. Highly significant differences (.001) occur for test performance on nonsense items by both level and language; the same is true of test performance on real word items. Analysis of variance indicates little difference in test performance on nonsense and on real words.

In a study of noun morphology Martinez-Bernal (1972: 98, 100) found:

a high degree of relationship between performance on the real language items and performance on the imaginary items. Those who did well on one did well on the other

The difference in performance on imaginary items when presented alone compared to imaginary items preceded by real language examples was found not to be significant at the 80% level of confidence.

But a British study by Herriot (1968: 273) showed:

a significant difference between conditions consisting of nonsense and those consisting of sense

for comprehension tasks undertaken by young children. Herriot found no significant differences for the tasks undertaken by older children. The Newfield and Schlanger (1968: 705) study on the acquisition of English morphology by normal and retarded children revealed that:

statistically significant differences existed between correct responses on lexicon and nonsense word items in both groups of children tested.

These conflicting findings do little to clarify the effect that nonsense words have on test performance. It may be, as Herriot suggests, that age has a crucial bearing on performance on questions using nonsense words.

The incorrect responses in this study closely paralleled those in previous studies (e.g., Koziol 1971 and Vogel 1970). One common error in this study, as in the others, was a stimulus repetition of the verb as it occurred in the test question; sometimes this was the uninflected form and sometimes the inflected form. One incorrect response not found in earlier studies was the substitution of a form of be for a form of have; for example, the use of be in "He must ____ been watching TV too long." The reverse was true, too: the substitution of a form of have for a form of be; for example, the use of had in "Yesterday afternoon the flowers ____ being watered." Incorrect substitutions of have for be occurred less frequently than substitutions of be for have. Such

Such errors indicate confusion in the use of have and be. A thorough study of the data needs to be made to determine the role of phonological and syntactic interference of the primary language in the learning of the target language. Our data seem to indicate that phonological interference was greater than syntactic interference.

This preliminary investigation on the acquisition of English verb morphology by nonnative speakers indicates an orderly progression of learning. Whether this order is valid for only the subjects in this study or whether it is a wider or universal pattern is not known. Our data indicate greater differences in learning by level of proficiency than by native language. Further studies on a larger sample of nonnative speakers need to be done. The role of formalized class instruction and the order of presentation of the various elements of English verb morphology also need to be explored. In addition, a comparison of native and nonnative patterns of acquisition could prove useful; little is known at present about how native speakers learn the English verb system. After gaining a better understanding of the acquisition of the English verb system by both native and nonnative speakers, we can then hopefully make improvements in second-language teaching strategies.

APPENDICES

APPENDIX A

THE VERB MORPHOLOGY TEST

APPENDIX A

THE VERB MORPHOLOGY TEST

I. The Oral Test

1. This woman knows how to cook. She is cooking now.
She does it every day. Every day she _____.
2. The boys jafe their horses every day.
In fact, they were _____ their horses yesterday.
3. The men smoke their pipes every day.
In fact, they were _____ their pipes yesterday.
4. This girl knows how to kleach. She is kleaching now.
She does it every day. Every day she _____.
5. This woman knows how to lunt. She is lunting now.
She did the same thing yesterday. Yesterday she _____.
6. This boy knows how to smile. He is smiling now.
He did the same thing yesterday. Yesterday he _____.
7. This boy knows how to walk. He has done it recently.
What has he done recently? Recently he has _____.
8. The people are enjoying the music. Most people enjoy music.
Music _____ enjoyed by most people.
9. The boy malks very well. He is malking now.
What can he do well? He can _____ well.
10. This man knows how to pleen. He has done it recently.
What has he done recently? Recently he has _____.
11. The boy didn't write a letter to his girl friend until yesterday.
He could _____ written the letter earlier.
12. This man knows how to tump. He is tumping now.
He did the same thing yesterday. Yesterday he _____.
13. This woman works very hard. She has to do it every week.
What must she do next week? Next week she must _____ very hard.
14. The woman picks flowers every day. She did this yesterday.
Yesterday the flowers were _____ by the woman.
15. The girl is heezing a dress now.
She has _____ heezing it since 9 o'clock.
16. This girl knows how to ming. She is minging now.
She did the same thing yesterday. Yesterday she _____.
17. This woman knows how to plant. She has done it recently.
What has she done recently? Recently she has _____.
18. The man is cutting the tree. He will cut another tree soon.
Soon another tree will _____ cut by the man.
19. The man is liching the car now. What is happening to the car?
The car is _____ lighed by the man.
20. The girl is pawking her garden now.
She _____ been pawking her garden since noon.

21. This boy knows how to zook. He is zooking now.
He does it every day. Every day he _____.
22. The girl plays with her dog every afternoon. It is now 2 p.m.
She should _____ playing with her dog now.
23. The boy can klant the house.
In other words the house can _____ klanted by the boy.
24. The men vump the trees every morning. What was happening to
the trees yesterday morning? Yesterday morning the trees
_____ being vumped.
25. The man is building a boat now.
He _____ been building the boat since last week.
26. The girl bings a ball. It is fun.
What is fun? It is fun _____ bing a ball.
27. The man was watching TV for many hours. He became very bored.
He must _____ been watching TV too long.
28. This girl knows how to dalk. She has done it recently.
What has she done recently? Recently she has _____.
29. The woman is opening the letters.
One has _____ opened before.
30. The girl is piffing a car. The boy also wants to _____ a car.
31. This man talks very well. He is talking now.
What can he do well? He can _____ well.
32. This woman knows how to sing. She is singing now.
She did the same thing yesterday. Yesterday she _____.
33. The woman usually looches a picture at noon. It is now noon.
She could _____ looching a picture now.
34. The people are thoying the food. Most people thoy food.
Food _____ thoyed by most people.
35. The boy could not dulb the dog. The dog was too far away;
otherwise, the dog would _____ been dulbed by the boy.
36. This girl knows how to clean. She has done it recently.
What has she done recently? Recently she has _____.
37. This woman knows how to swim. She is swimming now.
She does it every day. Every day she _____.
38. The girl can start the fire.
In other words, the fire can _____ started by the girl.
39. The man was fixing his car.
He should have _____ fixing his house instead.
40. This man knows how to ming. He has done it recently.
What has he done recently? Recently he has _____.
41. The girls water the flowers every afternoon. What was hap-
pening yesterday afternoon? Yesterday afternoon the flowers
_____ being watered.
42. The girl is ridng a horse. The boy also wants to _____ a
horse.
43. The boy spacks the ball every day. He did this yesterday.
Yesterday the ball was _____ by the boy.
44. The boy studied his lesson for 3 hours. He lost all interest
in the lesson. He may _____ studied too long.
45. This boy knows how to hunt. He is hunting now. He did the
same thing yesterday. Yesterday he _____.

46. The girl was clinning for many hours. She became very tired.
She must _____ been clinning too long.
47. This man knows how to bim. He is bimming now.
He does it every day. Every day he _____.
48. The man found the tisked cup on the table.
The cup might have _____ tisked by his daughter.
49. This woman knows how to sing. She has done it recently.
What has she done recently? Recently she has _____.
50. This man zicks very hard. He has to do it every week.
What must he do next week? Next week he must _____ very hard.
51. The boy snurns the field every afternoon. It is now 2 p.m.
He should _____ snurning the field now.
52. The boy is grishing the house. It has _____ grished before.
53. The woman didn't joor her clothes until yesterday.
She could _____ joored her clothes earlier.
54. The boy usually sails his boat at noon. It is now noon.
He could _____ sailing his boat now.
55. The man could not win the race. He was sick and didn't run
well; otherwise, the race would _____ been won by him.
56. The boy eats the bad food. He gets sick after _____ the food.
57. The woman is jatting the material.
It _____ been jatted before.
58. This man knows how to jump. He is jumping now.
He did the same thing yesterday. Yesterday he _____.
59. The girl was nuching her hair.
She should have _____ nuching her clothes instead.
60. The man is throwing the ball now. What is happening to the
ball? The ball is _____ thrown by the man.
61. The boy wugged his car for 2 hours. He became tired.
He may _____ wugged his car too long.
62. This girl knows how to teach. She is teaching now.
She does it every day. Every day she _____.
63. The girl saw a dead animal on the road.
The animal might have _____ hit by a car.
64. This boy knows how to zint. He has done it recently.
What has he done recently? Recently he has _____.
65. The man is rowing a boat now.
He has _____ rowing it since noon.
66. The woman is choofing the plant. She will choof another plant
soon. Soon another plant will _____ choofed by the woman.
67. The girl is playing a record.
It _____ been played before.
68. The woman thaps the big house.
She feels good after _____ the house.
69. This girl knows how to frool. She is frooling now.
She did the same thing yesterday. Yesterday she _____.
70. The woman drives a car. It is fun.
What is fun? It is fun _____ drive a car.

II. The Fill-In Test

1. The women drive their cars every day.
In fact, they were _____ their cars yesterday.
2. The men clouf their hair every week.
In fact, they were _____ their hair last week.
3. The girl knows how to wash. She is washing now.
She does it every week. Every week she _____.
4. The man knows how to croll. He is crolling now. He did the same thing yesterday noon. Yesterday noon he _____.
5. The boy knows how to stoom. He is stooming now.
He does it every Saturday. Every Saturday he _____.
6. The woman knows how to add. She is adding now.
She did the same thing yesterday. Yesterday she _____.
7. The boy knows how to jout. He has done it recently.
What has he done recently? Recently he has _____.
8. The man is buying a car.
The boy also wants to _____ a car.
9. The man zeps the tree every day. He did this yesterday.
Yesterday the tree was _____ by the man.
10. The girl is telling a story.
It _____ been told before.
11. The boy knows how to paf. He is paffing now.
He did the same thing last night. Last night he _____.
12. The people are watching TV. Most people watch TV.
TV _____ watched by most people.
13. The woman deeses very hard. She has to do it every week.
What must she do next week? Next week she must _____ very hard.
14. The man is drawing a picture now. What is happening to the picture? The picture is _____ drawn by the man.
15. The girl is feeding the animals now.
She has _____ feeding them since breakfast.
16. The woman knows how to trone. She has done it yesterday.
What has she done yesterday? Yesterday she has _____.
17. The man ate the badly burned cake.
The cake might have _____ burned by his daughter.
18. The woman didn't plant her garden until yesterday.
She could _____ planted her garden earlier.
19. The woman waters her plants every morning. It is now 10 a.m.
She should _____ watering her plants now.
20. The man knows now to ning. He is ninging now.
He did the same thing yesterday. Yesterday he _____.
21. The girl is platching the horse. She will platch another one next week. Next week another horse will _____ platched by the girl.
22. The woman knows how to sleep. She is sleeping now.
She does it every noon. Every noon she _____.
23. The man lazzes very well. He is lazzing now.
What can he do well? He can _____ well.
24. The boy is walking to town today. He soon becomes tired.
He may _____ walked too far already.

25. The girl is snaffing a hill.
It _____ been snaffed before.
26. The man in the car could not see the child. The night was too dark; otherwise, the child would _____ been seen by the man.
27. The girl knows how to wuck. She has done it last week.
What has she done last week? Last week she has _____.
28. The boy gloaks his ball every day at 3 o'clock. It is now 3.
He could _____ gloaking his ball now.
29. The man knows how to love. He has done it recently.
What has he done recently? Recently he has _____.
30. The man was nushing his house.
He should have _____ nushing his office instead.
31. The boy races very hard. He has to do it every week. What must he do next week? Next week he must _____ very hard.
32. The boy is spoving the bag.
It has _____ spoved before.
33. The man can train the dog.
In other words, the dog can _____ trained by the man.
34. The women make the beds every morning. What was happening to the beds yesterday morning? Yesterday morning the beds _____ being made.
35. The girl tigs a plant. It is fun.
What is fun? It is fun _____ tig a plant.
36. The man knows how to naz. He is nazzing now.
He does it every night. Every night he _____.
37. The girl was singing for a long time. She started to sing badly. She must _____ been singing too long.
38. The girl is tizzing a shoe now. What is happening to the shoe? The shoe is _____ tizzed by the girl.
39. The angry man hits the girl.
He feels bad after _____ the girl.
40. The man didn't stim his store until yesterday.
He could _____ stimmed his store earlier.
41. The cook tastes the food every day. He did this yesterday.
Yesterday the food was _____ by the cook.
42. The girl knows how to ring the bell. She is ringing it now. She did the same thing yesterday. Yesterday she _____ the bell.
43. The man was twunching the machine for a long time. He really became tired. He must _____ been twunching too long.
44. The woman is snooling the dish now.
She has _____ snooling it since supper.
45. The woman is kleving a house.
The girl also wants to _____ a house.
46. The man knows how to laugh. He is laughing now.
He did the same thing last night. Last night he _____.
47. The boy is flidding the store now.
He _____ been flidding the store since yesterday.
48. The woman is cleaning the room.
It has _____ cleaned before.
49. The people are yibbing the game. Most people yib the game.
The game _____ yibbed by most people.

50. The boys zeave the boxes every night. What was happening to the boxes last night? Last night the boxes _____ being zeaved.
51. The man knows how to run. He is running now.
He does it every day. Every day he _____.
52. The man is mooking his land today. He soon becomes tired.
He may _____ mooked too long already.
53. The woman knows how to ring the bell. She has done it recently.
What has she done recently? Recently she has _____ the bell.
54. The boy milks a cow. It is fun.
What is fun? It is fun _____ milk a cow.
55. The girl zilts her lessons every afternoon. It is now 3.
She should _____ zilting her lessons now.
56. The boy knows how to foop. He is fooping now.
He does it every morning. Every morning he _____.
57. The girl knows how to dance. She has done it last night.
What has she done last night? Last night she has _____.
58. The man smokes his pipe every day at 5 o'clock. It is now 5.
He could _____ smoking his pipe now.
59. The girl was baking a pie.
She should have _____ baking bread instead.
60. The boy knows how to breet. He is breeting now.
He did the same thing Sunday. Sunday he _____.
61. The man is flying the plane. He will fly another one next week.
Next week another plane will _____ flown by the man.
62. The boy looked at the croasted picture.
The picture might have _____ croasted by his father.
63. The man knows how to ning. He has done it recently.
What has he done recently? Recently he has _____.
64. The man fishes very well. He is fishing now.
What can he do well? He can _____ well.
65. The girl knows how to plan. She is planning now.
She did the same thing yesterday. Yesterday she _____.
66. The girl can tadge the flowers.
In other words the flowers can _____ tadged by the girl.
67. The girl is writing a letter now.
She _____ been writing it since yesterday.
68. The man knows how to shout. He has done it every night.
What has he done every night? Ever night he has _____.
69. The good woman vins the bag.
She feels good after _____ the bag.
70. The man could not plich the tree. The tree was too big; otherwise, the tree would _____ been pliched by the man.

III. The Multiple-Choice Test

1. The women serve milk every day.
In fact they were _____ milk yesterday.
a. serve b. serves c. served d. serving
2. The boy knows how to gurr. He is gurring now.
He does it every afternoon. Every afternoon he _____.
a. gurr b. gurrs c. gurred d. gurring
3. The man knows how to dress. He is dressing now.
He does it every day. Every day he _____.
a. dress b. dresses c. dressed d. dressing
4. The woman knows how to frad. She is fradding now.
She did the same thing last month. Last month she _____.
a. frad b. frads c. fradded d. fradding
5. The girls zish hills every Sunday.
In fact they were _____ hills last Sunday.
a. zish b. zishes c. zished d. zishing
6. The man knows how to count. He is counting now.
He did the same thing yesterday. Yesterday he _____.
a. count b. counts c. counted d. counting
7. The girl knows how to zub. She has done it recently.
What has she done recently? Recently she has _____.
a. zub b. zubs c. zurbed d. zubbing
8. The boy is dawling his car now.
He has _____ dawling it since 5 o'clock.
a. been b. being c. had d. having
9. Two cars are passing a very slow car now. Most cars pass the
slow one. The slow car _____ passed by most cars.
a. be b. had c. has d. is
10. The boy knows how to moash. He has done it every week.
What has he done every week? Every week he has _____.
a. moash b. moashes c. moashed d. moashing
11. The man grools his family every Saturday. He did this last
Saturday. Last Saturday the family was _____ by the man.
a. grool b. grools c. grooled d. grooling
12. The girl doops very well. She is dooping now.
What can she do well? She can _____ well.
a. doop b. doops c. dooped d. dooping
13. The man knows how to tring. He is tringing now.
He did the same thing last night. Last night he _____.
a. tring b. trings c. tringed d. trang
14. The man is guarding his house now. What is happening to the
house? The house is _____ guarded by the man.
a. been b. being c. has d. have
15. The woman is brushing her hair.
It _____ been brushed before.
a. be b. has c. have d. was
16. The boy knows how to theet. He is theeting now.
He does it every noon. Every noon he _____.
a. theet b. theets c. theeted d. theeting

17. The woman usually bakes bread in the morning. It is now morning. She could _____ baking bread now.
a. be b. being c. had d. have
18. The boy hilches a river. It is fun. What is fun?
It is fun _____ hilch a river.
a. be b. has c. have d. to
19. The man fights very hard. He has to do it every week.
What must he do next week? Next week he must _____ very hard.
a. fight b. fights c. fought d. fighting
20. The men fly the planes every night. What was happening to the planes last night? Last night the planes _____ being flown.
a. been b. had c. have d. were
21. The woman knows how to jud. She has done it last Sunday.
What has she done last Sunday? Last Sunday she has _____.
a. jud b. juds c. judded d. judding
22. The girl knows how to paint. She is painting now.
She does it every day. Every day she _____.
a. paint b. paints c. painted d. painting
23. The man sails his boat every day. He did this yesterday.
Yesterday the boat was _____ by the man.
a. sail b. sails c. sailed d. sailing
24. The man didn't meeve his horse until yesterday.
He could _____ meeved his horse earlier.
a. be b. been c. had d. have
25. The man knows how to jeal. He is jealing now.
He did the same thing last week. Last week he _____.
a. jeal b. jeals c. jealed d. jealing
26. The girl picked flowers for 2 hours. She became tired.
She may _____ picked flowers too long.
a. be b. been c. has d. have
27. The girl is plimming the sea now. What is happening to the sea? The sea is _____ plimmed by the girl.
a. been b. being c. has d. have
28. The boy is cutting the grass.
It has _____ cut before.
a. been b. being c. had d. have
29. The man can sign the letter.
In other words, the letter can _____ signed by the man.
a. be b. being c. had d. have
30. The boys are blooting the game now. Most boys bloot the game.
The game _____ blooted by most boys.
a. be b. had c. has d. is
31. The woman knows how to call. She is calling now.
She does it every day. Every day she _____.
a. call b. calls c. called d. calling
32. The boy knows how to relf. He is relfing now.
He did the same thing last night. Last night he _____.
a. relf b. relfs c. relfed d. relfing
33. The boy is joaming the box now.
He _____ been joaming the box since noon.
a. be b. has c. have d. was

34. The woman is learning French.
The girl also wants to _____ French.
a. learn b. learns c. learned d. learning
35. The man knows how to vote. He has done it last week.
What has he done last week? Last week he has _____.
a. vote b. votes c. voted d. voting
36. The boy knows how to spring up in the air. He is springing up now. He did the same thing yesterday morning.
Yesterday morning he _____ up in the air.
a. spring b. springs c. springed d. sprang
37. The woman is gliving the child today. She will glive another one tomorrow. Tomorrow another child will _____ glived by the woman.
a. be b. been c. had d. have
38. The girl didn't invite her friend until yesteday.
She could _____ invited her friend earlier.
a. be b. been c. had d. have
39. The girl discovered the dassed box.
The box might have _____ dassed by her mother.
a. be b. been c. had d. having
40. The man knows how to help. He is helping now.
He did the same thing last Sunday. Last Sunday he _____.
a. help b. helps c. helped d. helping
41. The boy usually fokes a ball in the evening. It is now evening. He could _____ flocking a ball now.
a. be b. being c. had d. have
42. The women glip the pictures every afternoon. What was hap-
pening to the pictures yesterday afternoon? Yesterday
afternoon the pictures _____ being glipped.
a. been b. had c. have d. were
43. The man knows how to stuch. He is stuching now.
He does it every afternoon. Every afternoon he _____.
a. stuch b. stuches c. stuched d. stuching
44. The man was painting his boat.
He should have _____ painting his house instead.
a. be b. been c. had d. having
45. The girl knows how to spring up in the air. She has done it last night. What has she done last night? Last night she has _____ up in the air.
a. spring b. springs c. springed d. sprung
46. The boy was breeving the ball for many hours. He became tired.
He must _____ been breeving too long.
a. be b. has c. have d. was
47. The man hides very well. He is hiding now.
What can he do well? He can _____ well.
a. hide b. hides c. hid d. hiding
48. The man is lanning his watch.
It _____ been lanned before
a. be b. has c. have d. was
49. The girl drinks milk at breakfast each day. It is now 8 a.m.
She should _____ drinking milk now.
a. be b. been c. has d. have

50. The man knows how to kill. He has done it last week.
What has he done last week? Last week he has _____.
a. kill b. kills c. killed d. killing
51. The woman could not thamp her office this morning. The door was locked; otherwise, the office would _____ been thamped by now.
a. be b. have c. having d. was
52. The woman beats her big dog.
She becomes tired after _____ her dog.
a. beat b. beats c. beaten d. beating
53. The woman whotted her kitchen for 2 hours. She became tired.
She may _____ whotted the kitchen too long.
a. be b. been c. has d. have
54. The man is buying a record today. He will buy another one next month. Next month another record will _____ bought by the man.
a. be b. been c. had d. have
55. The woman is tooging the bridge.
The girl also wants to _____ the bridge.
a. tooge b. tooges c. tooged d. tooging
56. The girl knows how to type. She has done it recently.
What has she done recently? Recently she has _____.
a. type b. types c. typed d. typing
57. The man is truffing the machine.
It has _____ truffed before.
a. been b. being c. had d. have
58. The boy found the murdered man.
The man might have _____ murdered a week earlier.
a. be b. been c. had d. having
59. The woman is washing the clothes now.
She has _____ washing them since noon.
a. been b. being c. had d. having
60. The man noves very hard. He has to do it every week. What must he do next week? Next week he must _____ very hard.
a. nove b. noves c. noved d. noving
61. The man was slooming his friend's dog.
He should have _____ slooming his own dog instead.
a. be. b. been c. had d. having
62. The boy can lawp the dog.
In other words the dog can _____ lawped by the boy.
a. be b. being c. had d. have
63. The woman shakes a box. It is fun.
What is fun? It is fun _____ shake a box.
a. be b. has c. have d. to
64. The man knows how to farm. He is farming now.
he did the same thing yesterday. Yesterday he _____.
a. farm b. farms c. farmed d. farming
65. The boy could not read his lesson. Someone had taken his book; otherwise, the lesson would _____ been read.
a. be b. have c. having d. was

66. The boy himps the machine.
He gets tired after _____ the machine.
a. himp b. himps c. himped d. himping
67. The woman is making a dress now.
She _____ been making the dress since last week.
a. be b. has c. have d. was
68. The woman klests her store every afternoon. It is now 3 p.m.
She should _____ klesting her store now.
a. be b. been c. has d. have
69. The man knows how to tring. He has done it yesterday noon.
What has he done yesterday noon? Yesterday noon he has _____.
a. tring b. trings c. tringed d. trung
70. The woman was reading the book for many hours. She became bored. She must _____ been reading too long.
a. be b. has c. have d. was

APPENDIX B

STATISTICAL RESULTS BY

LEVEL OF PROFICIENCY

APPENDIX B

STATISTICAL RESULTS BY LEVEL OF PROFICIENCY

Structure	Chi-Square	Significance ¹
1 <u>tense</u> (<u>present s</u>) <u>MV</u>	3.000	n.s.
2 <u>tense</u> (<u>past</u>) <u>MV</u>	6.857	n.s.
3 <u>tense</u> <u>modal</u> <u>MV</u>	9.414	n.s.
4 <u>tense</u> <u>modal</u> <u>have+en</u> <u>MV</u>	19.643	.001
✓ 5 <u>tense</u> <u>modal</u> <u>have+en</u> <u>be+ing</u> <u>MV</u>	10.500	.05
6 <u>tense</u> <u>modal</u> <u>have+en</u> <u>be+en</u> <u>MV</u>	12.252	.05
7 <u>tense</u> <u>modal</u> <u>be+ing</u> <u>MV</u>	4.500	n.s.
8 <u>tense</u> <u>modal</u> <u>be+en</u> <u>MV</u>	9.270	n.s.
9 <u>tense</u> (<u>present s</u>) <u>have+en</u> <u>be+ing</u> <u>MV</u>	17.871	.01
10 <u>tense</u> (<u>present s</u>) <u>have+en</u> <u>be+en</u> <u>MV</u>	9.075	n.s.
11 <u>tense</u> <u>have+en</u> <u>MV</u>	14.169	.01
12 <u>tense</u> <u>have+en</u> <u>be+ing</u> <u>MV</u>	21.027	.001
13 <u>tense</u> <u>have+en</u> <u>be+en</u> <u>MV</u>	16.455	.01
✓ 14 <u>tense</u> <u>modal</u> <u>have+en</u> <u>be+ing</u> <u>MV</u>	16.643	.01
15 <u>tense</u> <u>modal</u> <u>have+en</u> <u>be+en</u> <u>MV</u>	4.257	n.s.
16 <u>tense</u> (<u>past</u>) <u>be+ing</u> <u>be+en</u> <u>MV</u>	10.900	.05
17 <u>tense</u> <u>be+ing</u> <u>MV</u>	8.687	n.s.
18 <u>tense</u> <u>be+ing</u> <u>be+en</u> <u>MV</u>	17.171	.01
19 <u>tense</u> (<u>present s</u>) <u>be+en</u> <u>MV</u>	5.061	n.s.
20 <u>tense</u> <u>be+en</u> <u>MV</u>	9.464	n.s.
21 <u>to</u> <u>MV</u>	10.717	.05
22 <u>to</u> <u>MV</u>	9.786	.05
23 <u>ing</u> <u>MV</u>	11.733	.05

¹ n.s. indicates no significance statistically.

APPENDIX C

STATISTICAL RESULTS BY
NATIVE LANGUAGE

APPENDIX C

STATISTICAL RESULTS BY NATIVE LANGUAGE

Structure	Chi-Square	Significance ¹
1 <u>tense</u> (<u>present s</u>) <u>MV</u>	13.000	.05
2 <u>tense</u> (<u>past</u>) <u>MV</u>	9.429	n.s.
3 <u>tense</u> <u>modal</u> <u>MV</u>	10.038	.05
4 <u>tense</u> <u>modal</u> <u>have+en</u> <u>MV</u>	6.000	n.s.
5 <u>tense</u> <u>modal</u> <u>have+en</u> <u>be+ing</u> <u>MV</u>	6.500	n.s.
6 <u>tense</u> <u>modal</u> <u>have+en</u> <u>be+en</u> <u>MV</u>	5.971	n.s.
7 <u>tense</u> <u>modal</u> <u>be+ing</u> <u>MV</u>	16.000	.01
8 <u>tense</u> <u>modal</u> <u>be+en</u> <u>MV</u>	9.990	.05
9 <u>tense</u> (<u>present s</u>) <u>have+en</u> <u>be+ing</u> <u>MV</u>	5.014	n.s.
10 <u>tense</u> (<u>present s</u>) <u>have+en</u> <u>be+en</u> <u>MV</u>	2.100	n.s.
11 <u>tense</u> <u>have+en</u> <u>MV</u>	13.554	.01
12 <u>tense</u> <u>have+en</u> <u>be+ing</u> <u>MV</u>	3.682	n.s.
13 <u>tense</u> <u>have+en</u> <u>be+en</u> <u>MV</u>	10.012	.05
14 <u>tense</u> <u>modal</u> <u>have+en</u> <u>be+ing</u> <u>MV</u>	4.982	n.s.
15 <u>tense</u> <u>modal</u> <u>have+en</u> <u>be+en</u> <u>MV</u>	9.829	.05
16 <u>tense</u> (<u>past</u>) <u>be+ing</u> <u>be+en</u> <u>MV</u>	3.100	n.s.
17 <u>tense</u> <u>be+ing</u> <u>MV</u>	4.372	n.s.
18 <u>tense</u> <u>be+ing</u> <u>be+en</u> <u>MV</u>	5.343	n.s.
19 <u>tense</u> (<u>present s</u>) <u>be+en</u> <u>MV</u>	12.727	.05
20 <u>tense</u> <u>be+en</u> <u>MV</u>	8.918	n.s.
21 <u>to</u> <u>MV</u>	8.346	n.s.
22 <u>to</u> <u>MV</u>	4.286	n.s.
23 <u>ing</u> <u>MV</u>	8.000	n.s.

¹n.s. indicates no significance statistically.

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