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A COMPARISON OF THE AUDITORY COMPREHENSION OF ENGLISH
SYNTAX BY ENGLISH-SPEAKING MONOLINGUALS AND
SPANISH-ENGLISH BILINGUALS

By

Connie Ann Lingel

B.A., University of the Pacific, 1972

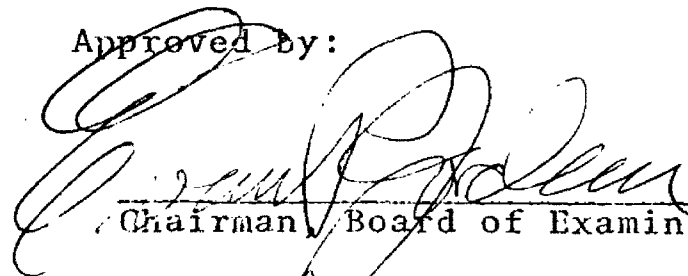
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Master of Arts

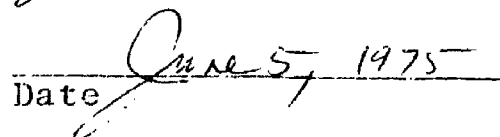
UNIVERSITY OF MONTANA

1975

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Lingel, Connie Ann., M.A., June, 1975

Communication Sciences
and Disorders

A Comparison of the Auditory Comprehension of English Syntax by
English-Speaking Monolinguals and Spanish-English Bilinguals (67 pp.)

Director: Dr. Evan P. Jordan

The purpose of this study was to determine the effects of bilingualism on children's comprehension of English syntactical patterns. Eighteen matched pairs of students from the third through fifth grades were selected to participate in the experiment. Each subject was classified as monolingual or bilingual depending on answers provided on a background questionnaire completed by his parents and a bilingualism survey conducted in his school. Each subject was administered two tests of syntax--one in English and one in Spanish--which consisted of twenty-seven sets of three utterances each. The child was required to select the one grammatically accurate utterance presented auditorily and corresponding to a given picture. The mean scores obtained by the two groups on the test of English syntax did not differ significantly and the hypothesis that the monolingual children would perform significantly better on the test of English syntax than the bilingual children was not supported. It was concluded that the population sampled in this study did not have sufficient early Spanish language experience to produce interference effects detectable by the test used.

ACKNOWLEDGMENTS

I wish to express my appreciation to the members of my committee, Dr. Richard M. Boehmler, Dr. James Flightner, and, particularly, Dr. Evan P. Jordan, for their guidance and encouragement. Thanks also go to Dr. Anthony Beltramo for his patience and help during the initial stages of this study and to all of the staff, students, and parents in Billings who made this study possible.

My special thanks go to Ken who said, "Yes, you will," every time I said, "I'll never get this done."

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CHAPTER I

INTRODUCTION

The effect of bilingualism on a person's mental, emotional, and educational growth has been the subject of various studies and research projects. The particular effects of the subject's first-learned language on his second language learning ability have been examined and researched at different levels--syntactical, lexical, morphemic, and phonemic--by such authors as Carrow (1957, 1971, 1972, 1973), Finocchiaro (1969), Haugen (1956), Weinreich (1953), and Stockwell, Bowen, and Martin (1965).

The problems created when a person learns more than one language or uses two or more languages alternately have often been termed interference. Weinreich (1953) stated:

The term interference implies the rearrangement of patterns that result from the introduction of foreign elements into the more highly structured domains of language, such as the bulk of the phonemic system, a large part of the morphology and syntax, and some areas of vocabulary . . .

He continued the discussion by stating:

The greater the difference between the systems [languages or dialects], i.e., the more numerous the mutually exclusive forms and patterns in each, the greater is the learning problem and the potential area of interference.

Haugen (1956) shared this theory of bilingualism with Weinreich and others. He alleged that the primary linguistic problem of a person who learns a second language simultaneously with his first language in infancy or who later "duplicates in many ways the functions of the forms and involves the alternative use of the same mental and physical organs" is that of keeping the two languages separate. When this does not occur, linguistic interference is the result. This theory is also supported by Finocchiaro (1969) who stated, "The ingrained habits of the native speaker may interfere or conflict with the learning of a second language." Politzer and Staubach (1965) further explained interference:

A new linguistic system must be created in the brain and neural system of a learner [of a second language] who is already conditioned to one set of language habits and who reacts to one set of patterns and analogies.

Lado (1957) and Politzer and Staubach (1965) also labeled interference as negative transfer and described it as taking place when there are partial similarities or overlaps between the two languages which the student extends by analogy into an area in which the overlap does not exist. According to Politzer and Staubach (1965), radical differences in the two languages will not cause negative transfer or interference. The authors mentioned thus far seem to agree, however, that interference may affect any part of a language at different

linguistic levels such as the phonemic, grammatical, and lexical levels. Lado (1957) stated that the learner not only transfers the form and meaning of the structures of one language to another, but that he transfers the distributions of these structures as well. Thus, the effects of interference are widespread within the structure of language.

The specific areas of linguistic interference may be determined by linguistic methods. Weinreich (1953) made the statement:

If the phonic or grammatical systems of two languages are compared and their differences delineated, one ordinarily has a list of the potential forms of interference in the given contact situation.

Lado (1961) asserted:

. . . where the native language of the student and the foreign language differ structurally there is a learning problem and the nature and description of this problem depends on the comparison of the two language structures.

Politzer and Staubach (1965) and Stockwell, Bowen, and Martin (1965) also approached the problem of interference through a systematic analysis of the similarities and differences between the two languages in question. This method, often labeled contrastive analysis, has been the subject of some controversy, but those authors who support the theory of language interference as a source of problems in language learning also support the use of contrastive analysis as

the means of delineating the specific areas of possible interference.

Weinreich (1953) declared that not all potential forms of interference will materialize with a contrastive analysis of the language structures. According to this author, there are several "non-structural" factors which have an effect on the speech of a bilingual. These include, among others, the speaker's ability to keep the two languages apart and his facility of verbal expression, his relative proficiency in each language, his manner of learning each language, and his attitude toward each language, his culture, and towards bilingualism. In order to obtain complete findings on the effect of bilingualism on a person's speech, then, Weinreich (1953) contended that "purely linguistic studies of language in contact must be co-ordinated with extra-linguistic studies on bilingualism and related phenomena."

Weinreich (1953) also gave rise to other points concerning interference which should be considered when research is conducted in that area. Although most authors consider interference to be created by the generalization of the patterns of the first-learned language to the second-learned language, Weinreich (1953) stated that factors other than the order in which the subject learned his languages may be responsible for interference. These include the subject's relative proficiency in the use of his languages, the age at which the

subject learned his languages, and the usefulness in communication of each language for that subject. According to Weinreich (1953) the dominant or prominent language, as established by the above factors, is that language which is the major source of interference on the other, or secondary, language. This author also emphasized that the interference may operate in both directions--from the dominant language to the secondary language or from the secondary language to the dominant one. On the basis of Weinreich's theories, then, it would appear necessary for a researcher to clearly define the variables included in his study. The researcher's criteria for determining the subject's dominant language as well as the specific areas of interference to be studied, both linguistic and non-linguistic, should be listed in order to insure that a reliable study is completed.

While the majority of the authors supporting the interference phenomenon state that both the receptive and expressive skills of the subject in his secondary language will be affected by the language patterns of his dominant language, most concentrate on the influence of the subject's dominant language on his expressive skills in his secondary language. For example, Haugen (1956) and Weinreich (1953), in their extensive discussions of their theories of bilingualism, concentrated heavily on the subject's expressive abilities in his secondary language. Because the major concern of

Finocchiaro (1969), and Politzer and Staubach (1965) was the teaching of oral language for communication purposes, they, too, concentrated on the speaker's expressive skills in his secondary language, although they both emphasized the need for appropriate comprehension skills to be present as a prerequisite for the effective learning of speaking skills.

Politzer and Ramirez (1973) studied the causes of error in the production of English by Mexican-American children in bilingual and monolingual schools. An oral language sample was taken from each subject in each group of students, those educated in monolingual schools and those from bilingual educational backgrounds. The subjects' responses were transcribed and analyzed. The errors were categorized as being morphological, syntactical, or lexical in nature, and the frequency of the types of errors was studied. The authors speculated that the possible causes of errors were of three types:

1. Interlingual errors: due to interference coming from Spanish,
2. Intralingual errors: due to confusion resulting from the misinterpretation of English grammatical rules or due to developmental errors which might be similar to those developmental errors of children learning English as a first language,
3. Errors due to the intrusion of nonstandard English dialect.

As the authors point out, errors in the bilingual's second-learned language are likely due to multiple causes and

". . . the intrusion of Spanish, though certainly not the only cause of error, plays a considerable role . . ." in certain structures. These authors supported the theory that one's dominant language will be a source of interference in the learning of a second language but, in accordance with Weinreich (1953), declared that it was not the only area responsible for errors in the expressive language of bilingual speakers in their secondary language.

On the other hand, some works seem to include a study of the influence of one's dominant language on his receptive skills in his secondary language. Carrow (1957) examined the relationship between bilingualism and the mastery of language. She classified third grade children as either monolingual or bilingual on the basis of an interview with their parents and their experience with one or more languages, then matched the children according to age, socioeconomic status, and intelligence, and measured their achievement of language skills as well as their expressive language skills through the use of reading tests, achievement tests, tests of articulation and an oral language sample. Although there was no significant difference between the language groups in several areas, there was a significant difference in favor of the monolingual in oral reading accuracy, oral reading comprehension, receptive vocabulary, arithmetic reasoning, and speaking vocabulary. Carrow's (1957) results also indi-

cated that the bilinguals had more and different types of articulation and grammatical errors. Carrow's (1957) study covered a wide range of language skills, both expressive and receptive. In addition, she controlled several "non-structural" factors which could have affected the study as suggested by Weinreich (1953). Her study, however, cannot be viewed as a direct examination of the possible negative transfer created by structural differences in the two languages because the examination items which were used were not based on a study of the structural differences. It did contribute to an understanding of the effect of bilingualism on a child's achievement of language skills in several different areas and his expressive abilities in his secondary language.

Carrow (1971) conducted another study of which one of the purposes was to compare the comprehension of English with that of Spanish by preschool Mexican-American children. As in her previous study, she controlled socioeconomic status, intelligence, and the degree of bilingualism of her subjects. A control group of English-speaking monolinguals was used and each child was administered Carrow's Auditory Test for Language Comprehension to determine the subject's comprehension of morphological and syntactical structures. Each bilingual subject was administered the Spanish version of the test as well as the English version. Carrow's (1971) findings

revealed that among preschool children of low socioeconomic status in Houston the "greater proportion understood English better than Spanish" and that the bilinguals were delayed in certain areas in both languages. Again, the phenomenon of interference was not used as a basis for determining which language patterns should be evaluated and it was not possible to assess to what degree negative transfer was involved in the test results.

Preschool children of low socioeconomic status from Houston were also the subjects for a subsequent study of the auditory comprehension of English by monolinguals and bilinguals by Carrow (1972). Again she emphasized that:

The postulated "language handicap" of Mexican-Americans has often been reported as responsible for social and educational problems of these children. However, descriptions of this language handicap are meager with regard to the specific language areas involved and the complex interactions of intelligence, social status, and the bilingual environment with both the academic and social achievement of the Mexican-American child.

Carrow (1972) contended that it was imperative that there be a differentiation between language problems stemming from bilingualism per se and those resulting from a bilingual environment which usually means that they are disadvantaged socio-economically. In this study, Carrow administered her Auditory Test for Language Comprehension (ATLC, 1968) which permitted assessment of oral language comprehension of both English and Spanish without requiring language expression as the children

responded by pointing to the picture which corresponded to the examiner's utterance. The bilinguals were tested in both English and Spanish. Results revealed that "apparent comprehension of English does not seem to indicate complete comprehension in all linguistic areas." The monolinguals obtained significantly higher mean scores than did the bilinguals on the ATLC and those linguistic areas in which scores of the monolinguals were higher than the scores of the bilinguals were nouns, pronouns, plurality of nouns, and noun phrases with two adjective modifiers. Carrow (1972) hypothesized that differences in syntactic structure between the two languages, such as in the placement of adjectives, could be the cause for some of the differences in the scores. However, the test items were not specifically chosen to reveal interference effects.

Present Study

Although it is apparent that experimental and empirical interest has focused on the learning of a second language as it is influenced by the native language habits of a particular individual, research which has concentrated solely on the interference created by the learning of two languages on the person's auditory comprehension of syntax in his secondary language seems to be rare. The present research was an attempt to determine the effects of bilingualism on a bilingual subject's comprehension of English syntax. The author

attempted to control such factors as age, degree of bilingualism, and socioeconomic status in this study. As the method for classifying the subjects as bilingual or monolingual, and for determining their degree of bilingualism, the author used results of a background questionnaire completed by the subjects' parents and a bilingualism survey conducted by the school system from which the subjects were obtained. Bilingual subjects were required to have some exposure to Spanish in their homes, while monolingual subjects were required to have no exposure to Spanish or any other language in the home. The researcher chose items for her test of English syntax on the basis of contrastive analyses completed by Stockwell, Bowen and Martin (1965) and Politzer and Staubach (1965). Of particular concern to this researcher was the effect of interference from the Spanish syntax patterns on the comprehension of English syntax by bilingual persons with comprehension or speaking abilities in English and Spanish. More specifically, the author was interested in determining the relationship between the comprehension of syntax representing English patterns by Spanish-English bilingual subjects compared to the comprehension of these same patterns by native monolingual English subjects. No comparison was made of the subject's ability to comprehend these patterns as opposed to his ability to produce them.

The need for such a study can be readily seen when one examines the size and characteristics of the Spanish-speaking

population in the United States. According to the 1970 Census Report, there are currently 9,072,602 persons of Spanish origin (persons who said they considered themselves to be of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish origin) living in the United States. Data collected by the United States Bureau of the Census in March, 1971 and 1972 on persons of Spanish origin in the United States indicated that six million of the over nine million Spanish-Americans, or 65 percent, reported that Spanish was the language currently spoken in the home. These studies also concluded that the population of school-age children, ages five to nineteen years, of Spanish origin included more than three million members and that 2.2 million of these lived in homes where Spanish was spoken. These studies reveal that a large Spanish-speaking population exists in the United States and that many of the members of this population are of school age and live in homes where Spanish is the language spoken.

When one studies the number of tests which measure the speech and language skills of the Spanish-speaking child or which have norms on them for this child, he finds a limited number of evaluation instruments. The Seventh Mental Measurements Yearbook lists only one speech and hearing test, Comprehension of Oral Language: Inter-American Series (1958), which provides a Spanish edition for testing the Spanish-speaking child. This author is aware of three other tests

which have norms for the Spanish-speaking child--Carrow's Test for Auditory Comprehension of Language (1973), Carrow's Screening Test for Auditory Comprehension of Languages (1973), and the Ammons and Ammons, Full-Range Picture Vocabulary Test (1948). The Seventh Mental Measurements Yearbook also lists other tests not strictly considered to be speech and language tests, but which test vocabulary, grammar, syntax, and listening comprehension in English in order to assess the English-speaking skills of adult foreign students. Most of these are not designed to measure speech and language skills or deficits of the subjects in their first language, but simply measure their ability to use their second language. Thus, there is a large Spanish-speaking, school-age population in the United States for which there are few diagnostic tests for accurately assessing their speech and language skills. More detailed studies of the ways in which language interference operates could help determine the need for developing diagnostic and therapeutic material for the bilingual school-age child or for revising the present material so that it would measure more accurately the skills of this child in either his dominant or secondary language.

Statement of the Problem

It is a questionable procedure to use norms reflecting the language behavior of middle class, native speakers of English when testing the language of bilingual children. It

would appear that language interference from the child's dominant language on his secondary language could influence the test results and the instrument in question would not be likely to evaluate the specific linguistic areas for which it was intended.

In an effort to understand one aspect of interference, the influence of one language on the ability to comprehend different syntactical patterns in the second language, the author hypothesized that the Spanish-English bilingual subjects would obtain lower scores on a test of auditory comprehension of English syntax than would monolingual English-speaking subjects on the same task. A rejection of the null hypothesis (the English monolinguals and Spanish-English bilinguals would receive the same scores on an English auditory comprehension task) would support this author's hypothesis.

Definition of Experimental Variables

The experimental variables involved in this research were:

Independent Variable--exposure to spoken Spanish in at least one situation in the home or school resulting in at least a comprehension of some spoken Spanish.

Dependent Variable--the scores achieved by the bilingual and monolingual subjects on the auditory comprehension task.

Operational Definitions

Whether a person was considered to be a Spanish-English bilingual or an English monolingual was partially determined by answers given by a subject's parents on a questionnaire (see Appendix A), and information provided by a bilingualism survey. For the purpose of this research, the following operational definitions were used:

Bilingual--a person was considered a bilingual if so indicated by the school survey. An answer of "yes" was required for the first part of question twelve on the questionnaire and an answer of "Spanish" or "Mexican" was required as the answer to part two of question twelve. No other language could be listed in part two of question twelve if a child was considered a bilingual.

Monolingual--a person was considered to be a monolingual English subject if an answer of "no" was provided to questions eleven, twelve and thirteen on the questionnaire.

CHAPTER II

PROCEDURES

Subjects

Eighteen monolingual and eighteen bilingual children from the third through fifth-grade populations of Taft and Garfield elementary schools in Billings, Montana were used as subjects for this research. Billings was selected as the location for obtaining the bilingual subjects because of the availability of a population of Mexican-Americans. It appears that many of these Mexican-Americans settled in Billings after having worked in outlying areas as immigrant farm workers. All subjects were classified as bilingual, monolingual, or rejected for the experiment partly on the basis of the answers to the questions on the questionnaires completed by their parents. In addition, a survey conducted by the school district to determine the extent of bilingualism among its students was used to classify the subjects. The following criteria were also established for accepting a child as a participant in this experiment:

1. Each monolingual child spoke general American English as judged by the examiner in order to prevent other dialects from affecting the results of the experiment.

2. Each child had acceptable speech and language as judged by the researcher and the speech clinician in the child's school. No bilingual child had deviant speech or language other than those problems related to second language learning.
3. Each monolingual child was exposed to no language other than English in his home as determined by the answers provided on the questionnaire. Each bilingual child was exposed to no language other than English or Spanish in the home.
4. Each child passed a hearing screening test as delineated in subsequent paragraphs.
5. The subjects were of similar socioeconomic status as described in the following sections.
6. Each subject in the control group was within one year of age of a subject in the same grade and of the same sex in the experimental group.
7. Each subject had a note, signed by his parents, allowing him to participate in this research.

Questionnaire and Survey

The compilation of questions for the questionnaire was based on work completed by Cohen (1970) and Hoffman (1934) concerning bilingualism and the determination of the degree of bilingualism of a particular individual. The majority of the answers given on the questionnaire were used to aid this researcher in the determination of the monolingual or bilingual status of each subject. Other answers were used to determine the socioeconomic status of the subjects' families and the remainder of the answers were used to help the researcher further analyze the data obtained from the testing.

The survey previously mentioned was conducted in the Billings schools in October, 1974, in order to help determine the need for establishing a bilingual Spanish-English program in the schools. Three native Spanish speakers for whom English was a second language conducted the survey. Each child with a Spanish surname or who had a mother who spoke Spanish was questioned individually by one of the three examiners in both English and Spanish. If the child did not answer the questions presented to him in Spanish, the examiner switched to English and asked the child if he understood Spanish, but did not speak it. If the child indicated that that was the case, he was instructed to answer in English even when questioned in Spanish. The examiner then asked the child the same questions in Spanish that he had previously asked. On the basis of the child's responses, he was classified as English dominant--having neither a speaking ability or understanding of Spanish; Spanish dominant--neither understanding or speaking English; Spanish secondary--having at least a comprehension of Spanish; or English secondary--having at least a comprehension of English.

Each member of the third through fifth-grade population of Taft and Garfield elementary schools was given the background questionnaire and permission slip to be taken home and completed by his parents in advance of the experiment. Of the 228 questionnaires distributed, 147, or 64.47 percent, were returned.

The principal of Taft school, one of the examiners in the survey just described, provided the researcher with a list of those students from the third, fourth, and fifth grades of Taft school who were categorized as Spanish secondary, indicating that they had at least a comprehension of some Spanish as determined by the survey. Any child on this list for whom a permission slip was signed was considered as a candidate for the bilingual, or experimental, group. In order for a child to be retained on this list, it was required that the parent had indicated on the questionnaire that at least one other member of the child's family spoke Spanish. No children for the monolingual group were obtained from Taft school because the principal reported to the researcher that all of the children in his school had been receiving a bilingual lesson once a week since the beginning of the school year. Each bilingual candidate, a total of twenty-five, was placed in his proper group--third, fourth, or fifth grade.

All monolingual subjects were obtained from Garfield school. All children who returned the questionnaires and whose parents had indicated that the child spoke no language other than English, and that no other member of the family spoke a language other than English, was considered for the monolingual group. Each of these children was then placed in his proper group--third, fourth, or fifth grade. All children judged by the speech clinician of this school to

have a speech or language problem were then eliminated from the study. Twenty-eight children remained after these procedures were accomplished.

If the number of subjects of a particular sex and grade in one group outnumbered the number of subjects of the same sex and age in the opposing group, the subjects were randomly chosen in the group for which there was an excess number in order to match the sex and grade of the subjects in the opposite group. For example, if there were four monolingual boys in the third grade, but only two bilingual boys in the third grade, two of the monolinguals were randomly chosen to be the matched subjects for the bilinguals. The extra children were used as alternate subjects in the event that the subjects originally chosen failed to pass all the necessary criteria. If it was necessary to use an alternate, one was randomly selected from the available alternates for a particular sex and grade.

Answers to questions four through seven on the questionnaire were used as data for determining socioeconomic status using the Index of Status Characteristics developed by Warner, Meeker, and Eells (1949). Three factors--occupation of breadwinner, source of income, and education of breadwinner--were used to make a rating of socioeconomic status. If both parents were employed, the researcher used the employment and education of the father to complete the calculations. The

socioeconomic status for each bilingual considered as candidates was calculated and a mean score was determined. In order to be accepted for the study, the socioeconomic rating of each child selected for the control group was within fifteen points either way of the mean score obtained by the bilingual group. Any monolingual child whose socioeconomic score did not fall within this range was eliminated from the experiment at this point.

There were two sets of bilinguals, fourth-grade boys and fifth-grade boys, for which there was an insufficient number of matching control group subjects; the extra bilingual subjects were accordingly eliminated. Two sets of monolinguals, third-grade girls and fifth-grade girls, provided an excess number of monolingual subjects; the extra subjects were eliminated from the experiment. Subjects to be eliminated were identified by a random procedure as described previously. Four subjects, two from the monolingual group and two from the bilingual group, were rejected from the experiment because of failure to pass the hearing screening. Four additional children in the control group were rejected, two because of a failure to meet the criteria for socioeconomic status and two because of a failure to meet the criteria for age difference between matched pairs. After all rejections, a total of eighteen matched pairs of subjects participated in the experiment.

Apparatus

A Uher audio-tape recorder, model 4000 L, and Valiant Deluxe Student Headsets, LFE 69, VHS-815, were used to present the auditory comprehension task to the subjects. The same tape recorder was used to record the task.

A Beltone audiometer, model 10 D, calibrated to 1964 ISO standards, was used to complete hearing screening on each subject.

Auditory Comprehension Task

Two separate tasks for testing the auditory comprehension of syntax were constructed. One task consisted of English utterances and was administered to both the monolingual and the bilingual subjects. The other task, also presented to both groups, consisted of Spanish utterances which were comparable to the utterances on the English version and was used as a countercheck of the results obtained on the task presented in English. There was a time lapse of at least one day between the administration of the two tests to any one subject to attenuate any effect of familiarity with the test and testing procedure. Failure of the bilinguals to perform better on the task in their native language would tend to indicate that factors other than the learning of a second language could be responsible for their poor comprehension of syntactical patterns or that interference was operating in both directions to a degree which caused poor

language comprehension abilities in one, or both, of their languages.

The two tasks (Appendix E) presented to the subjects each consisted of twenty-seven sets of three utterances each. One of the three utterances in each set was a grammatically correct utterance; the other two were syntactically incorrect. One of the incorrect utterances in each set was constructed to yield that interpretation by the bilingual due to structural differences in the two languages--the interfering product. The third utterance was syntactically incorrect but was not considered to sample likely interference effects. The twenty-seven sets of utterances in each task were organized in nine groups of three. Each group was structured to sample a particular likely source of interference. Each utterance described an action or event illustrated by a picture.

The utterances were tape recorded on high quality audio tape by a male, native speaker of standard American English who was monolingual and by a bilingual Spanish-English speaker for whom Spanish was his first-learned language for the English and Spanish utterances respectively. In order to avoid any bias in each speaker's production of the utterances, the speakers did not know the nature of the experiment. The English tape had a duration of ten minutes; the Spanish, nine minutes. There was a time lapse of seven seconds between

each item. All of the stimulus sentences were recorded in a sound-treated room. The researcher controlled the level of recording of the stimulus items by adjusting the proper control on the tape recorder as they were being recorded so that the fluctuation of the speaker's voice was no more than three dB according to the recording level meter for approximately 90 percent of the recording time. During the remaining 10 percent of the time occasional syllable peaks may have deviated from the mean value by no more than six dB.

Before the tests were used with either the control or experimental group, six monolingual children from the third through fifth grades in Missoula, Montana were presented with the task in English in order to determine whether it was a workable instrument. Two of these children were also presented the task in Spanish in order to determine its effect on a child who was a monolingual. No problems were revealed by this pilot study.

The items constituting the comprehension tasks were constructed after a review of studies describing the differences and similarities in the syntactical structures of English and Spanish. On the basis of observations made by such linguistic experts as Stockwell, Bowen, and Martin (1965) and Politzer and Staubach (1965), who systematically compared and contrasted the grammatical systems of the two languages, possible sources of confusion or interference were selected to be incorporated

into the tasks. Not all possible interference products were used as bases for test items as that would have led to unwieldy and impractical tasks. In addition, the nature of some of the interference products was such that the presentation would not have been feasible with this particular experiment because their representation with pictures would have been difficult or impossible.

Nine different contrasting syntactical structures were chosen to be used as the bases for the twenty-seven sets of test utterances. Each structure was incorporated into the test a total of three different times, each time with different lexical units. For example, Is the car red?, Is the boy reading? and Is the girl sleeping? were three grammatically accurate items which corresponded with the category of word order in yes/no interrogatives. The items were randomly ordered; the same ordering was used for the Spanish test as for the English test.

Following is a list of the nine syntactic structures used, with both the English and Spanish patterns specified, and their differences explained. Also included is an example of each structure, in both English and Spanish, and the hypothesized, most probable, interfering pattern. The descriptions of these categories were adapted from descriptions made by Stockwell, Bowen, and Martin (1965) and Politzer and Staubach (1965).

1. Specification of subject

In English, the subject in an utterance or sentence with a full verb phrase must be expressed unless the utterance is an imperative. In Spanish, however, the subject may not be specified if it is implicit in the context. The subject is not entirely omitted in Spanish as it is explicit in the inflected verb. It would seem likely that the native Spanish speaker would indicate as correct that English utterance which is a literal translation of the Spanish and does not express a subject.

Example:

<u>English</u>	<u>Spanish</u>	<u>Interference Product</u>
It is raining.	Está lloviendo	Is raining.

2. Position of object pronoun

The placement of an object in an utterance, whether it is a noun or a pronoun, is normally following the verb in English. In Spanish, however, the placement of the object pronoun is before finite verb forms except in affirmative commands. The native Spanish speaker would tend, on the basis of this observation, to comprehend as correct the object pronoun placement preceding the verb in English.

Example:

<u>English</u>	<u>Spanish</u>	<u>Interference Product</u>
I have it.	Lo tengo.	I it have.

3. Personal nouns as direct objects

In English, no preposition is used following a verb and preceding a direct object even when the direct object is a personal noun. In Spanish, when the direct object following a verb is a specific, personal noun, it is preceded by the preposition, a. The Spanish speaker, therefore, may interpret an English utterance with the preposition to preceding the direct object to be the correct utterance because that could appear to be the likely translation of the a to him.

Example:		
<u>English</u>	<u>Spanish</u>	<u>Interference Product</u>
I see my friend.	Veo a mi amigo.	I see to my friend.

4. Word order and formation of negative declaratives

In an English declarative sentence, not or n't follows the verb to be or the auxiliary of any word in order to negate. In the similar situation in Spanish, the negative is formed by the insertion of a negative element before the verb phrase and a change in the form of the subject or preverbal adverb whenever possible. English, unlike Spanish, does not allow the spread of the negative element into other parts of the phrase.

Examples:

<u>English</u>	<u>Spanish</u>	<u>Interference Product</u>
Mary is not here.	María no está aquí.	Mary no is here.
John doesn't ever want to go.	Juan no quiere ir nunca.	John no wants to go never.

5. Word order in the yes/no interrogatives

Although at times both English and Spanish transform declarative sentences into yes/no questions by simply inverting the intonation, this is only done in English to generate an echo question which is different in meaning from the declarative. For example, He's here might be transformed to He's here? with a resulting change in meaning. In those interrogatives in which an inversion of word order takes place as well as an inversion of intonation, Spanish inverts the subject and the entire verb phrase. English, on the other hand, inverts the subject and only the first part of the verb phrase--the tense, the tense+modal, the tense+have, or the tense+be. The difference in the amount of the sentence inverted could confuse the Spanish speaker learning English and be a source of interference.

Examples:

<u>English</u>	<u>Spanish</u>	<u>Interference Product</u>
Is the boy here?	¿Esta aquí el muchacho?	Is here the boy?

Can Mary go?	¿Se puede ir María?	Can go Mary?
Has the girl arrived?	¿Ha llegado la muchacha?	Has arrived the girl?

6. Subject-object pronoun positioning

In English, object pronouns follow the verb. In Spanish, however, the object pronoun precedes the verb unless there is a gerund, infinitive, or affirmative command to which it is attached. The subject of the sentence, then, may very well follow the verb in Spanish and a contrasting pattern to English syntax is created.

Example:

<u>English</u>	<u>Spanish</u>	<u>Interference Product</u>
The boy hit her.	La golpeó el muchacho.	Hit her the boy.

7. The use of definite and indefinite articles

The major contrast between English and Spanish articles is that the Spanish forms have number and gender, while only the English indefinite articles show a distinction for number. (English singular--a, an, English plural--some). In addition, the positioning and necessity for using the articles do not constitute equivalent situations in the two languages. For example, no indefinite article is present before a predicate noun in Spanish when there are no adjectives and the sentence is for identification. There would be an indefinite article present in this situation in English. Spanish also requires the use of a definite article preceding certain titles such as señor, señora, and señorita while English does not use an article before Mr., Mrs., or Miss. Stockwell, Bowen, and Martin (1965) explain a third example of contrast:

There are prepositional phrases indicating place in English which do not have an article before their objects when the nouns refer to specific places which are normally unique in the cultural context: to town, to church All these have Spanish equivalents with definite articles.

Examples:

<u>English</u>	<u>Spanish</u>	<u>Interference Product</u>
He is a doctor.	El es médico.	He is doctor.
Mrs. Smith is teaching the lessons.	La señora Santos enseña la lección.	The Mrs. Smith is teaching the lesson.
She is going to church.	Va a la iglesia.	She is going to the church.

8. Connection between verbs and adjectives and dependent infinitives

Although both English and Spanish have dependent infinitive constructions which do not require the use of function words or relators, in those situations in Spanish where function words are required there are several possibilities such as que, a, para, or de. A conflict is created between English and Spanish because English has basically only one function word in this case--to.

Example:

<u>English</u>	<u>Spanish</u>	<u>Interference Product</u>
She is trying to sleep.	Trata de dormir.	She tries of to sleep.

9. Reflexive constructions

The reflexive forms in English, -self and -selves, are added to the pronouns (myself, for example) and are usually restricted to literal meaning of the reflexive construction. This type of construction is also existent in Spanish, but the reflexive is also extended to other figurative uses in Spanish that are not possible in English and which would usually be expressed by a passive construction in English.

Example:

<u>English</u>	<u>Spanish</u>	<u>Interference Product</u>
The plate was broken.	Se quebró el plato.	The plate broke itself.

Experimental Procedure

Each subject was tested individually. He was first taken into a small room in his school and was given a pure-tone screening check at 1k, 2k, and 4k Hz. at a level of 20 dB to rule out hearing loss which might interfere with the outcome of the experiment. Failure of the subject to respond at 20 dB to any one of the frequencies tested resulted in a rejection of that subject for the remaining procedures.

Before administering the task in English, the examiner conversed with each monolingual child in order to determine whether he used general American English according to her judgment. No child was rejected from the experiment for failure to meet this requirement.

Each child who successfully passed the previous screenings was seated at a desk and was fitted with the headphones. In front of the child were a pencil, an answer sheet, and the upright book of pictures. The examiner was also fitted with headphones so that she could turn the pictures for the child at the appropriate time. After seeing that the child was comfortably seated and that the headphones were well placed, the examiner turned on the tape recorder and administered the English task. Instructions for the task were tape recorded. These instructions and all other instructions presented to the child during the administration of the task may be seen in Appendix C.

After at least one day and no more than three days, each child was brought into the same room and presented with the task in Spanish. Instructions for this task are also presented in Appendix C.

Statistical Design

The number of items correctly completed by each subject on each test was computed; the highest possible score on either test was twenty-seven.

Because the differences between the scores obtained from the comprehension task were not measureable in an interval scale, a nonparametric statistical test was used to determine statistical significance of the results. The Wilcoxon matched-pairs signed-ranks test was the test chosen to analyze the data obtained because the study involved two groups of matched pairs. Four separate analyses were undertaken; 1) to compare the scores of the monolinguals on the English test to those on the Spanish test; 2) to compare the scores of the bilinguals on the English test to those on the Spanish test; 3) to compare scores of monolinguals on the English test to those of the bilinguals; and 4) to compare the scores of the monolinguals to those of the bilinguals on the Spanish test. In two cases, comparing the scores of the two groups on the English task and comparing the scores of the two groups on the Spanish task, the difference in the test scores between the two matched subjects was determined and the differences were

ranked without regard to sign. Then a sign was placed on the rank corresponding to the sign of the differences. A T was determined to be the smaller of the sums of the like-signed ranks. A table was then used to determine whether T was or was not significant. The level of significance was set at .025 for a one-tailed test as the direction of the difference was predicted.

Previous to the administration of the tasks, the examiner had predicted which of the answers would be chosen by the bilingual subjects on the English task when they chose a wrong answer. An item analysis was conducted to determine to what extent the examiner's predictions were correct. In addition, the answers given on the questionnaire by the subjects' parents were compared with the test results in order to determine whether other factors may have affected the outcome of the experiment.

CHAPTER III

RESULTS

It was hypothesized that monolingual English speakers would obtain higher scores on a test of English syntax presented auditorily than would a matched group of Spanish-English bilinguals.

Data obtained from the performance of the experimental and control groups on the tests of English and Spanish syntax and the characteristics of these populations as defined by the questionnaire and survey conducted in the school system are described in the following paragraphs.

Characteristics of the Population

TABLE 1

The Distribution of the Subjects in the Control and the Experimental Groups by Grade and Sex

	Boys		Girls	
	Control	Exper.	Control	Exper.
Third Grade	3	3	3	3
Fourth Grade	3	3	2	2
Fifth Grade	3	3	4	4
TOTAL	9	9	9	9
N = 18 matched pairs				

The mean socioeconomic rating of the bilingual subjects who participated in the study was 62.11. The mean socioeconomic rating of the matched monolingual subjects was 59.06 points, a difference of 3.05 points from that mean obtained by the subjects in the experimental group. This difference is minimal when one considers the fact that the criteria for socioeconomic status stipulated that the ratings of the control group subjects were to fall within fifteen points in either direction of the mean socioeconomic rating obtained by the subjects in the experimental group.

The range of ages of the children in the control group was from eight years, six months to eleven years, two months; the range of ages of the children in the experimental group was eight years to twelve years, one month. As mentioned previously, no child was matched with another child of the same sex and grade who was more than one year older or younger than he was. The mean age of the children in the control group was ten years and the mean age of the subjects in the experimental group was ten years, one month.

For a more detailed listing of the ages, sex, grade, and socioeconomic rating of the matched pairs, see Appendix D.

A total of seven parents of those children in the experimental group answered "yes" to the first part of question eleven on the questionnaire, "Does your child speak more than

one language now?" These parents answered the second part of question eleven, "If yes, which languages does he speak?" with the answers "Mexican" or "Spanish." Some of the parents indicated that the child spoke "a little" or "some" Spanish. All of the parents of the children in the experimental group answered "yes" to question twelve, "Does any other member of this child's family speak any language other than English?" In addition, each of these parents reported that that language was "Spanish" or "Mexican." No other language was listed as an answer to this question for those qualifying as participants in the experimental group.

Of those answering "yes" to question eleven, four parents indicated that English was the language the child had learned first. (Question fourteen), one parent indicated that Spanish was the language the child had learned first, one parent did not answer the question, and one parent reported that the child had always been spoken to in both Spanish and English by his parents, but that he had not been required to answer in Spanish. The age at which these children had learned their second language, either English or Spanish, varied from two and one-half to eight years.

Of the seven parents who answered "yes" to question eleven, six completed the remainder of the questionnaire. The answers given by these parents to question twenty, "Which language would you say the child prefers to use?", question

twenty-one, "Which language would you say the child uses most?" and question twenty-two, "Which language is used most in the home?" are summarized below:

Question Twenty--Language child prefers to use

English	-	3
Spanish	-	1
Both	-	2

Question Twenty-one--Language child uses most

English	-	4
Spanish	-	0
Both	-	2

Question Twenty-two--Language used most in the home

English	-	4
Spanish	-	0
Both	-	2

In addition, four parents indicated that the situation in which their child used Spanish was with relatives other than the immediate family. In only one case did the parent indicate that he spoke and understood only "a little" English (Questions eighteen and nineteen). All other parents reported that they both spoke and understood English. Comparable data was not available for the remaining eleven subjects in the experimental group as the questionnaires were not completed beyond question thirteen because these parents had indicated that their children did not speak a second language. However, all children in the experimental group were considered to have at least a comprehension of Spanish as determined by the bilingual survey conducted by the school district.

These observations indicated that the experimental group of subjects exhibited a wide degree of variability in their ability to understand and speak Spanish. The degree of fluency in Spanish of each subject as well as the amount of exposure to Spanish of each subject were variables which were not well-controlled in this study.

All parents of the children in the monolingual group answered "no" to question eleven, "Does your child speak more than one language now?" An answer of "no" was also given by all of these parents to the question, "Does any member of this child's family speak any language other than English?" (Question twelve.)

Performance on the tasks

The mean score of the control group subjects on the English task was 25.94, while the mean score of the experimental group subjects on this same task was 25.84. The application of the Wilcoxon matched pairs, signed ranks test produced a T which was not significant at the .025 level of significance for a one-tailed test. An analysis of the scores of each matched pair revealed that the unsigned difference in the scores was not greater than two points for any one pair. Only two children, both in the third grade in the bilingual group, answered more than two questions incorrectly on this task. As the differences in the scores were minimal, no analysis was undertaken to determine in which categories the errors had

been made.

The mean score of the monolingual subjects on the task in Spanish was 9.61. The mean score on this same task of the experimental group subjects was 12.78. There were three cases in which a monolingual subject obtained a higher score than his matched subject in the bilingual group. The application of the Wilcoxon, matched pairs, signed ranks test produced a T of 23, the sum of the positive ranks, which was significant at the .025 level of significance for a one-tailed test. This would suggest that the subjects of the experimental group performed significantly better on this task than did the subjects in the control group.

Of the six children whose parents reported they spoke at least some Spanish on the questionnaire and the one child whose parents indicated was spoken to in Spanish, five obtained scores higher than the mean score for the entire group on the Spanish test. Three other children, whose parents indicated that they did not speak Spanish, also obtained scores higher than the mean score for the bilingual group. In fact, one subject reported by her parents to speak no Spanish, obtained the third highest score in the bilingual group on this task.

The one bilingual child who learned to speak Spanish before he learned to speak English received the second highest score on the test of Spanish syntax. On the English task, this same child missed only one even though he told the

examiner he thought he had a better comprehension of Spanish than English.

No statistical analysis was undertaken to compare the performance of each subject matched with himself on the two tasks because there was no case in which any subject, bilingual or monolingual, achieved a higher score on the Spanish task than on the English task. The performances of the subjects and the appropriate statistical analysis are summarized in tables two and three.

In summary, the null hypothesis, that both groups would perform equally well on the English task, could not be rejected based on the results of this study. However, the two populations could be considered to evolve from different environments based on the answers to the questionnaire and the comparative performance of the two groups on the Spanish task.

TABLE 2

Performance of the Subjects on the English Task

	Control Group	Score	Exper. Group	Score	d	Signed rank of d
Third Grade	1	26	1	27	1	-6
	2	26	2	26	0	none
	3	26	3	24	2	+14
	4	25	4	23	2	+14
	5	25	5	26	1	-6
	6	25	6	26	1	-6
Fourth Grade	7	25	7	27	2	-14
	8	26	8	27	1	-6
	9	27	9	26	1	+6
	10	26	10	25	1	+6
	11	27	11	26	1	+6
Fifth Grade	12	25	12	26	1	-6
	13	27	13	26	1	+6
	14	25	14	27	2	-14
	15	26	15	27	1	-6
	16	27	16	27	0	none
	17	26	17	25	1	+6
	18	27	18	25	2	+14
		<u>X=25.94</u>			<u>X=25.89</u>	

Sum of positive signed ranks = 72

Sum of negative signed ranks = 64

T = 64

N = 18-2=16

TABLE 3

Performance of the Subjects on the Spanish Task

	Control Group	Score	Exper. Group	Score	d	rank of d
Third Grade	1	5	1	20	15	-17
	2	10	2	16	6	-13
	3	12	3	14	2	-7
	4	10	4	11	1	-3
	5	7	5	10	3	-8.5
	6	15	6	11	4	+11.5
Fourth Grade	7	11	7	12	1	-3
	8	8	8	10	2	-7
	9	8	9	8	0	none
	10	11	10	18	7	-14.5
	11	9	11	10	1	-3
Fifth Grade	12	11	12	15	4	-11.5
	13	5	13	18	13	-16
	14	13	14	12	1	+3
	15	11	15	13	2	-7
	16	7	16	8	1	-3
	17	7	17	14	7	-14.5
	18	13	18	10	3	+8.5
	$\bar{X}=9.61$		$\bar{X}=12.78$			

Sum of negative signed ranks = 128

Sum of positive signed ranks = 23

T = 23

N = 18-1=17

CHAPTER IV

DISCUSSION

The purpose of this study was to determine the effect of bilingualism on a subject's comprehension of English syntactical patterns. Two groups of eighteen subjects each were presented with two tests of syntax, one in English and one in Spanish. Each subject was shown a series of twenty-seven pictures. The subject heard three different tape-recorded sentences for each illustration and was asked to select the one grammatically accurate sentence which corresponded to the picture. The hypothesis, that the English monolingual control group would score significantly higher on a task of auditory comprehension of English syntax than would the Spanish-English bilingual group, was not supported by the results of this study. The factors affecting the outcome of the study appeared to be many and varied and included limitations imposed by the available population, limitations of the test, and a possible weakness in the contrastive analysis used to determine the interference products. A discussion of these factors follows.

Failure of the monolingual group to achieve a significantly greater number of correct answers on the English task than the bilingual group may have been due to the lack of

sufficient Spanish language experience and the wide variability of degree of bilingualism among the subjects in the experimental group. The answers given on the questionnaire and summarized in Chapter three were such that no "pure" group of bilinguals could be defined. The examiner concluded that this was due, in part, to inadequacies of the questionnaire. For example, the design of some of the questions was such that a parent needed to make some of his own interpretations as to what the question meant in order to answer the question. A parent whose child spoke a limited amount of Spanish may have answered "no" when asked, "Does your child speak any language other than English now?" because in his judgment an answer of "yes" could only have been considered if the child spoke Spanish fluently. On the other hand, another parent whose child also spoke a limited amount of Spanish may have answered "yes" to this same question because in his opinion the child did "speak a language other than English." This is supported by the fact that some children, who spoke no Spanish according to their parents, obtained scores higher than the mean score for the bilingual group on the test in Spanish, while other children who reportedly spoke Spanish obtained scores lower than the mean on this test. In addition, no child in the experimental group scored higher on the test in Spanish than on the test in English.

Another factor which should be considered was the

apparent reluctance on the part of some of the parents to admit to the amount of Spanish spoken by their children. Some parents expressed a concern that their children only be exposed to and taught English, particularly at school. School administrators indicated to the researcher that this problem had been encountered previously. Although steps are being taken, such as the establishment of bilingual programs in schools with Chicano populations, to instill a pride in the Spanish language and in the Mexican culture, they are still in their initial stages. The attitude of most parents, at this point, seems to be that the learning and use of English, as opposed to Spanish, is the major accomplishment hoped for for their children. The researcher was not able to assess to what extent the reluctance of the parents to admit that their children spoke Spanish affected this study, but it must be considered to have had some effect. More questionnaires may have been returned and different information may have been provided by the parents if this attitude were non-existent. As mentioned previously in this paper, non-structural factors, such as one's attitude toward his language and his culture, affects the speech and comprehension of a bilingual (Weinreich, 1953).

One must also consider the possibility that some children who spoke Spanish and who achieved low scores on the task in Spanish may have comprehended the content of spoken Spanish

very well even though they did not have knowledge of accurate grammar. Such a conclusion is supported by the case of the bilingual child who indicated to the examiner that his Spanish was "better" than his English and yet who scored much higher on the test in English than on the one in Spanish. Here again, a cultural identification to Spanish may have been the reason for the child's appearing to feel more comfortable with Spanish despite a modest score on the Spanish grammatical test.

Limitations of the tasks used in the study must also be considered, particularly in relation to the population with which they were used. Although the examiner designed the English task so that a perfect performance was expected from the monolingual group, this was not expected from the experimental group. The fact that both groups, the control and the experimental, achieved nearly perfect scores on the English task might indicate that the task was too easy for these subjects. There appeared to be a tendency for language interference to occur at the third-grade level in the bilingual group. Two children in that age level obtained the two lowest scores on the English task of anyone in the experimental group. This tendency did not appear with the third graders in the control group. Judging from the responses of the bilingual subjects in this study, the English task used in this study could easily be given to younger bilingual children in order

to determine the functioning of interference in children less sophisticated in their competence with English grammar. Other alternatives would involve the use of a task made up of more complex transformations with the same age group, or the use of a more homogeneous population with more Spanish language experience and less competence in English to increase the likelihood of occurrences of interference.

Contrastive analysis may not be as useful a technique for predicting linguistic interference as it appears to be. It is possible that other linguistic methods may produce tasks much more sensitive to interference effects. Whitman and Jackson (1972) administered two sets of English syntax to 2500 Japanese students learning English as a second language. They used four different contrastive analyses to predict the relative difficulty the students would have with the various test items. When the results of the test were compared with these predictions, they found that the contrastive analyses did not serve as predictors of the level of difficulty a non-native speaker of English would have with English syntactic patterns. Whitman and Jackson (1972) concluded that there were two possible explanations for the results they encountered:

1. Contrastive analysis, as represented by the four analyses tested in this project, is inadequate, theoretically and practically, to predict the interference problems of a language learner.

2. Interference, or native-to-target language transfer, plays such a small role in language learning performance that no contrastive analysis, no matter how well conceived, could correlate highly with performance data, at least in the level of syntax.

More research is needed, they indicated, before these conclusions could be declared definitive. However, the application of these conclusions to this study should be considered as a possible explanation for the outcome of the study.

Although the hypothesis in this research was not supported by the results of the experiment, there are substantial reasons for continuing research in this area and even using the same bilingual population. Mr. Augie Lopez, a bilingual counselor for the Billings school district, conducted a study, as yet unpublished, in which the Illinois Test of Psycholinguistic Abilities and the Peabody Picture Vocabulary Test were presented to 132 students in Title I schools in Billings. According to Mr. Lopez, the results of the testing revealed that language deficiencies in English were prevalent among the Chicano children. Realizing that these tests were designed for the standard American English speaker and that they were not standardized for use with minority groups, one might still agree that they serve as predictors of areas of language difficulty in English for the Chicano child.

Mr. Lopez also indicated that, in his opinion, the lack of experience with standard English before a child enters school makes it difficult for the child to comprehend instruc-

tions given to him by his teacher. This factor, along with the child's sometimes negative attitude toward his language or his culture, contribute to his difficulties with English. The inability of a child to identify with any particular culture may be psychologically hampering in his attempts to use language properly. On the basis of these observations, it would seem imperative that further research be conducted to determine the sources of deficits in English competence by these children.

Several kinds of studies are suggested by the present study. It would be beneficial to conduct a similar study to this one with a population which was more truly bilingual, possibly with the use of more complex transformations in order to help determine whether interference does operate as suggested thus far in the majority of the available literature.

Studies of younger bilingual children should be completed as children of preschool age just developing basic grammatical rules should more readily exhibit interference effects.

Studies employing several alternative contrastive analyses, such as that conducted by Whitman and Jackson (1972), should be done in an effort to identify more fruitful methods of identifying language interference.

Studies in which the language of Chicano children is examined through the use of existing tests of English syntax

might be useful to help researchers locate the specific areas of difficulty experienced by a bilingual child in understanding and speaking English.

Finally, the researcher thinks that much more study should be conducted to assess the effects a negative attitude toward one's language and/or culture has on a bilingual's language ability in both of his languages. A better understanding of the relationship between non-structural factors in language learning and a bilingual's speech is imperative if effective help is to be provided for bilingual children.

CHAPTER V

SUMMARY AND CONCLUSIONS

The purpose of this study was to determine the effect of bilingualism on children's comprehension of English syntactical patterns. Eighteen matched pairs of students from the third through fifth grades were used as subjects for the experiment. Each subject was classified as being from a monolingual environment or from a bilingual environment on the basis of answers provided on background questionnaires completed by the subjects' parents. Results obtained by the schools on a bilingualism survey were also used to classify the subjects as monolingual or bilingual. Each subject was administered two tests of syntax--one in English and one in Spanish. A total of twenty-seven pictures were shown to each child in each test. After hearing three tape-recorded sentences which corresponded to a picture, the subject was required to circle the number of the sentence on his answer sheet which was grammatically accurate and which corresponded to the picture. There was only one correct answer for each picture.

The mean scores for each group on each test was calculated. On the English test, the mean score obtained by the

monolingual group was 25.94 and the mean score obtained by the bilingual group was 25.84. The application of the Wilcoxon matched pairs signed ranks test produced an insignificant T at the .025 level of significance. Mean scores obtained by the two groups on the Spanish test were 9.61 by the monolingual group and 12.78 by the bilingual group. The T was significant for these test results. On the basis of the results obtained, the null hypothesis, that the subjects in the experimental group would achieve the same scores on the test of English syntax as the subjects in the control group, was not rejected.

A summary was made of the characteristics of the populations involved in the study through the use of the answers provided on the questionnaires. Although the subjects in the bilingual group were not homogeneous, they possessed characteristics which differentiated them from the subjects in the control group.

A discussion followed which centered around possible explanations for the inability of the researcher to reject the null hypothesis. Even though a significant difference between the scores of the two groups was not obtained on this particular test of English syntax, there was evidence to suggest that language problems existed among the members of the bilingual group which could be attributed to their bilingualism. It was concluded that the test of English syntax used in this

particular study did not detect interference effects because the bilingual subjects had insufficient Spanish language experience.

Implications for future research were discussed.

A P P E N D I C E S

A P P E N D I X A

QUESTIONNAIRE

1. Name of child _____
(Nombre del niño)
2. Sex of child _____
(Sexo del niño)
3. Birthdate of child _____
(Fecha del nacimiento)
4. Occupation of mother _____
(Empleo de la madre)
5. Occupation of father _____
(Empleo del padre)
6. Education of mother _____
(Educación de la madre)
7. Education of father _____
(Educación del padre)
8. Place of birth of child _____
(Lugar del nacimiento del niño)
9. If the child was not born in the United States, at what age did he enter the United States? _____
(Si el niño no nació en los Estados Unidos, ¿a qué edad entro en los EEUU?)
10. Place of birth of mother _____ of father _____
(Lugar de nacimiento de la madre del padre)
11. Does your child speak more than one language now? _____
If yes, which languages does he speak? _____
(¿Habla su niño más de un idioma? Si contesta sí, ¿cuáles?)
12. Does any other member of this child's family speak any language other than English? _____ If yes, which languages? _____
(¿Hay algún otro miembro de la familia que habla un idioma además del inglés? ¿Cuáles?)
13. Has the child ever spoken a language other than English? _____
(¿Ha hablado el niño alguna vez otro idioma además del inglés?)

If the child speaks more than one language, please answer the following questions.

(Si es que el niño habla más de un idioma, favor de contestar las preguntas siguientes.)

14. Which language did your child learn how to speak first?

(¿Cuál es el primer idioma que aprendió su niño?)

15. At what age did he learn to speak his second language? _____
(¿A que edad aprendió su niño a hablar su segundo idioma?)

16. What formal language training has the child had in his second language? _____ When and where? _____
(¿Ha cursado su niño lecciones de inglés o cualquier otro idioma antes de entrar en la escuela? ¿Cuándo? ¿Dónde?)

17. How many years has the mother of this child lived in the United States? _____ the father? _____
(¿Cuántos años hace que la madre vive en los EEUU? el padre?)

18. Does the mother of this child understand English? _____ the father? _____
(¿Comprende inglés la madre de este niño? el padre?)

19. Does the mother of this child speak English? _____ the father? _____
(¿Habla inglés en cualquier forma la madre de este niño? el padre?)

20. Which language would you say the child prefers to use? _____
(En su opinión, ¿qué idioma prefiere el niño usar?)

21. Which language would you say the child uses most? _____
(¿Qué idioma habla el niño más?)

22. Which language is used most in the home? _____
(¿Qué idioma hablan ustedes más en casa?)

23. Which language is used the most for teaching in the child's school? _____
(En la escuela a que asiste su niño, ¿qué idioma se usa más para la enseñanza?)

24. Which language does the child use when speaking to:
(¿Qué idioma usa su niño cuando habla con:)
his mother (su madre) _____
his father (su padre) _____
his brothers and sisters (sus hermanos) _____
his friends (sus amigos) _____
other relatives (otros parientes) _____

A P P E N D I X B

LETTER AND PERMISSION SLIP

Dear Parent,

A study will be conducted in this school in order to determine the differences in the way native English speakers and native Spanish speakers hear different sentences. The test will take about ten minutes two different times for each child. The results of the test will help the school better understand some of the language difficulties your child may be having.

If you are willing to allow your son or daughter to participate, would you please sign the slip below. Helping your child complete the questionnaire attached to this letter and returning it to the school immediately will also be helpful to the study.

Thank you for your cooperation.

Estimados señores padres de familia,

Un estudio será efectuado en esta escuela para determinar como contestaría un niño, una pregunta, al oír la en un idioma diferente a su lengua nativa. La prueba tendrá una duración de diez minutos en dos días diferentes. Los resultados de la prueba ayudarán a la escuela, en una u otra forma, para determinar las dificultades en el aprendizaje de un idioma extraño.

Como usted puede ver, el fin de esta prueba es beneficioso y si usted está interesado en permitir que su hijo o su hija participe, por favor firme en el espacio correspondiente indicado abajo. Ayudando a su hijo a contestar el cuestionario y devolviéndolo a la escuela lo antes posible el cual será útil para efectuar este estudio.

Agradiciéndole de antemano por su colaboración.

Sinceramente,

(Signature of principal)

_____ has my permission to be
Name of Child (Nombre del niño tiene mi permiso para
a subject in the study described above.
participar en el estudio previamente explicado.)

_____ Date (Fecha) _____ Parent's signature (Firma del
padre o de la madre.)

Each child who returns this slip and the questionnaire
will receive a quarter.

(Cada estudiante que devuelve este papel y el cuestionario
recibirá 25 centavos.)

A P P E N D I X C

TAPE-RECORDED INSTRUCTIONS AND STATEMENTS MADE BY
THE EXAMINER TO THE SUBJECT

At the onset of the task, the subject was presented with the following tape-recorded instructions:

In front of you is a piece of paper with letters going down the side. After each letter, there are three numbers, one, two, and three. First, I will show you a picture and then you will hear three sentences. After you hear all of the sentences, pick the one you think fits the picture and is the "best" sentence. Then circle the number of this sentence on your paper. Let's try some and I will help you.

The subject was then given two practice items. If the child indicated that he did not understand the task, the tape recorder was turned off and the examiner provided the subject with further instruction until he judged the subject to understand the task.

If the child waited to hear all of the sentences in the sample items before circling his answer, he was given the following verbal reinforcement:

Good. You didn't circle your answer until you heard all of the sentences.

The remaining twenty-seven sentences were presented after the child heard:

Now you will hear the rest of the sentences.

If at any time during the test the child circled his answer before hearing all of the sentences, the examiner said:

Wait until you hear all of the sentences before you circle your answer.

If the child hesitated before answering, he was told to guess by the examiner. In addition, if the child lost his place, it was pointed out to him by the examiner.

Before the initiation of the task in Spanish, the examiner told each child:

This test is just like the other one except that it is in Spanish.

If the child said that he did not know Spanish or seemed to become frustrated at any time during the test he was told:

You are doing fine. Just guess.

At the beginning of the tape the child heard the following instructions in Spanish:

Por favor, conteste las siguientes preguntas en el mismo modo como lo hizo en inglés. (Please answer the following questions in the same way that you did in English.)

The same procedures as those used for the English task were then followed for the remainder of the Spanish test.

A P P E N D I X D

MATCHED PAIRS

<u>Monolingual Group</u>					<u>Bilingual Group</u>				
Sex	Grade	Age	SE	Rating	Sex	Grade	Age	SE	Rating
1.	F	Third	9-6	52	F	Third	9-4		64
2.	F	Third	8-6	60	F	Third	8-8		66
3.	F	Third	9-7	71	F	Third	9-4		64
4.	M	Third	8-11	52	M	Third	8-0		68
5.	M	Third	9-4	52	M	Third	8-9		58
6.	M	Third	8-9	68	M	Third	8-7		65
7.	M	Fourth	9-7	56	M	Fourth	9-10		58
8.	M	Fourth	10-5	74	M	Fourth	9-8		68
9.	M	Fourth	10-3	56	M	Fourth	9-10		54
10.	F	Fourth	10-5	60	F	Fourth	10-2		62
11.	F	Fourth	10-3	59	F	Fourth	10-0		63
12.	M	Fifth	10-7	51	M	Fifth	11-1		68
13.	M	Fifth	11-2	59	M	Fifth	12-1		62
14.	M	Fifth	10-8	56	M	Fifth	11-4		64
15.	F	Fifth	10-5	55	F	Fifth	10-9		54
16.	F	Fifth	10-10	68	F	Fifth	11-6		64
17.	F	Fifth	10-7	52	F	Fifth	10-11		64
18.	F	Fifth	11-2	62	F	Fifth	11-7		62
			$\bar{X} = 10$	$\bar{X} = 59.06$				$\bar{X} = 10-1$	$\bar{X} = 62.11$

A P P E N D I X E

STIMULUS SENTENCES

Samples

- a) 1. It dog is.
2. Dog is it.
3. It's a dog.
- b) 1. The boy eating is.
2. The boy is eating.
3. The eating boy is.

Category 1, Specification of Subject

- | | |
|--|---|
| 1) 1. It is raining.
2. Is raining.
3. Raining is it. | 1. Está lloviendo hoy.
2. Lloviendo hoy está.
3. Hoy él está lloviendo. |
| 2) 1. Hot is it.
2. It is hot.
3. Is hot. | 1. ¡Calor hace qué!
2. ¡Qué calor hace él!
3. ¡Qué calor hace! |
| 3) 1. It is a nice day.
2. It a nice day is.
3. Is a nice day. | 1. Es un hermoso día.
2. Es un día hermoso.
3. El es un día hermoso. |

Category 2, Position of Object Pronoun

- | | |
|---|--|
| 1) See the book?
1. The girl it is giving
to her mother.
2. The girl giving to her
mother it.
3. The girl is giving it to
her mother. | ¿Ve usted el libro?
1. La muchacha lo da a
su madre.
2. La muchacha a su madre
dalo.
3. La muchacha dalo a su
madre. |
| 2) Does she have the flowers?
1. Yes, she has them.
2. Yes, has them she.
3. Yes, she them has. | ¿Tiene ella las flores?
1. Sí, las tiene.
2. Tiene las, sí.
3. Sí, tiene las. |
| 3) See the apple?
1. The boy is holding it.
2. The holding boy is it.
3. The boy it is holding. | ¿Ve usted la manzana?
1. El la muchacho coge.
2. El muchacho la coge.
3. El muchacho coge la. |

Category 3, Personal Nouns as Direct Objects

- | | |
|---------------------------------------|--------------------------------|
| 1) 1. He sees his friend. | 1. Ve su amigo. |
| 2. He sees to his friend. | 2. Su ve amigo. |
| 3. Sees his friend he. | 3. Ve a su amigo. |
| 2) 1. Hugging is her she mother. | 1. Abraza su madre. |
| 2. She is hugging her mother. | 2. Madre abraza su. |
| 3. She is hugging to her mother. | 3. Abraza a su madre. |
| 3) 1. The mother is washing her baby. | 1. La niña la madre baña. |
| 2. Her is washing the mother baby. | 2. A la niña la baña la madre. |
| 3. The mother is washing to her baby. | 3. La madre baña la niña. |

Category 4, Word Order and Formation of Negative Declaratives

- | | |
|---------------------------------------|------------------------------------|
| 1) 1. John is not here. | 1. Juan está no aquí. |
| 2. John here not is. | 2. Juan no está aquí. |
| 3. John no is here. | 3. No Juan está aquí. |
| 2) 1. Tall the girl not is. | 1. La muchacha es no alta. |
| 2. The girl is not tall. | 2. La alta muchacha es no. |
| 3. The girl no is tall. | 3. La muchacha no es alta. |
| 3) 1. The boy does not have the doll. | 1. El muchacho no tiene la muñeca. |
| 2. The boy no has the doll. | 2. El muchacho tiene no la muñeca. |
| 3. The no boy the doll has. | 3. No el muchacho tiene la muñeca. |

Category 5, Word Order in Yes/No Interrogatives

- | | |
|----------------------------------|-------------------------------------|
| 1) 1. Red the is car? Yes. | 1. ¿El rojo es auto? Sí. |
| 2. Is red the car? Yes. | 2. ¿Es el auto rojo? Sí. |
| 3. Is the car red? Yes. | 3. ¿Es rojo el auto? Sí. |
| 2) 1. The is sleeping girl? Yes. | 1. ¿Está durmiendo la muchacha? Sí. |
| 2. Is sleeping the girl? Yes. | 2. ¿La durmiendo muchacha está? Sí. |
| 3. Is the girl sleeping? Yes. | 3. ¿Esta la muchacha durmiendo? Sí. |
| 3) 1. Is reading the boy? Yes. | 1. ¿Esta el muchacho leyendo? Sí. |

2. The boy reading is? Yes.

3. Is the boy reading? Yes.

2. ¿Leyendo esta' muchacho el?
Sí.

3. ¿Esta' leyendo el muchacho?
Sí.

Category 6, Subject-Object Pronoun Positioning

1) 1. Her is hitting the boy.
2. Is her hitting the boy.
3. The boy is hitting her.

1. El muchacho golpea la.
2. La golpea el muchacho.
3. Golpea el muchacho la.

2) See the dog?
1. It is petting the boy.
2. The is petting it boy.
3. The boy is petting it.

¿Ve usted el perro?
1. El muchacho mímallo.
2. El lo muchacho mima.
3. Lo mima el muchacho.

3) See the ball?
1. The boy is kicking it.
2. It is kicking the boy.
3. Is kicking the boy it.

¿Ve usted la pelota?
1. Patea el lo muchacho.
2. Lo patea el muchacho.
3. El muchacho patea lo.

Category 7, Use of Definite and Indefinite Articles

1) 1. The Mrs. Brown is teaching
the lesson.
2. Mrs. Brown is teaching the
lesson.
3. Mrs. Brown the lesson
teaching is.

1. La señora Santos enseña
la lección.
2. La señora la lección
Santos enseña.
3. Señora Santos enseña la
lección.

2) 1. Is doctor he.
2. He is doctor.
3. He is a doctor.

1. Es un médico.
2. Es médico un.
3. Es médico.

3) 1. She is going to the church.
2. She the church to is going.
3. She is going to church.

1. A la va iglesia.
2. Va a la iglesia.
3. Va a iglesia.

Category 8, Connection Between Verbs or Adjectives and Dependent Infinitives

1) 1. He is ready for to leave.
2. He to leave is ready.
3. He is ready to leave.

1. Está salir listo para.
2. Está listo salir.
3. Está listo para salir.

2) 1. She is trying of to ride a
bike.
2. She is trying to ride a bike.
3. She to ride is trying a bike.

1. En trata de andar
bicicleta.
2. Trata de andar en
bicicleta.
3. Trata andar en bicicleta.

- 3) 1. The girl quit eating.
 2. The eating quit girl.
 3. The girl quit of eating.

1. La muchacha dejó comer.
 2. La muchacha dejó de
 comer.
 3. De la muchacha comer dejó.

Category 9, Reflexive Constructions

- 1) 1. The plate was broken
 2. The broken plate was.
 3. The plate broke itself.
- 2) 1. The door opened itself.
 2. Opened door the.
 3. The door was opened.
- 3) 1. The milk was spilled.
 2. The milk spilled itself.
 3. The was milk spilled.

1. El se plato quebró.
 2. Se quebró el plato.
 3. Quebró el plato.
1. Abrió la puerta.
 2. La abrió puerta.
 3. Se abrió la puerta.
1. Derramó la leche se.
 2. Se derramó la leche.
 3. Derramó la leche.

A P P E N D I X F

ANSWER SHEET FOR ENGLISH TEST

Name _____

Do it like this: 1 (2) 3

Samples:

	1	2	3				
	1	2	3	n.	1	2	3
a.	1	2	3	o.	1	2	3
b.	1	2	3	p.	1	2	3
c.	1	2	3	q.	1	2	3
d.	1	2	3	r.	1	2	3
e.	1	2	3	s.	1	2	3
f.	1	2	3	t.	1	2	3
g.	1	2	3	u.	1	2	3
h.	1	2	3	v.	1	2	3
i.	1	2	3	w.	1	2	3
j.	1	2	3	x.	1	2	3
k.	1	2	3	y.	1	2	3
l.	1	2	3	z.	1	2	3
m.	1	2	3	aa.	1	2	3

A P P E N D I X G

ANSWER SHEET FOR SPANISH TEST

Name _____

Hágalo así:

Do it like this:

1

(2)

3

a. 1 2 3

ñ. 1 2 3

b. 1 2 3

o. 1 2 3

c. 1 2 3

p. 1 2 3

d. 1 2 3

q. 1 2 3

e. 1 2 3

r. 1 2 3

f. 1 2 3

rr. 1 2 3

g. 1 2 3

s. 1 2 3

h. 1 2 3

t. 1 2 3

i. 1 2 3

u. 1 2 3

j. 1 2 3

v. 1 2 3

k. 1 2 3

w. 1 2 3

l. 1 2 3

x. 1 2 3

m. 1 2 3

y. 1 2 3

n. 1 2 3

B I B L I O G R A P H Y

BIBLIOGRAPHY

- Ammons, Robert B. and Ammons, Helen S. Full-Range Picture Vocabulary Test, 1948.
- Buros, Oscar Krisen, ed. The Seventh Mental Measurements Yearbook. 2 vols. Highland Park, New Jersey: Gryphon Press, 1972.
- Carrow, Sister M. A. "Linguistic Function of Bilingual and Monolingual Children." Journal of Speech and Hearing Disorders 22 (September 1957): 371-380.
- Carrow, Elizabeth. "Comprehension of English and Spanish by Preschool Mexican-American Children." Modern Language Journal LV (May 1971): 299-305.
- _____. "Auditory Comprehension of English by Monolingual and Bilingual Preschool Children." Journal of Speech and Hearing Research 15 (June 1972): 407-412.
- _____. Test for Auditory Comprehension of Language: English/Spanish. Austin, Texas: Urban Research Group, Inc., 1973.
- _____. Screening Test for Auditory Comprehension of Language. Austin, Texas: Learning Concepts, 1973.
- Cohen, Andrew D. A Sociolinguistic Approach to Bilingual Education. Stanford, California: Stanford University, 1970.
- Finocchiaro, Mary. Teaching English as a Second Language: Revised and Enlarged. New York: Harper & Row, Publishers, 1958, 1969.
- Haugen, Einar. Bilingualism in the Americas: A Bibliography and Research Guide No. 26, Published by the American Dialect Society (November, 1956).
- Hoffman, Moses Naphthali. The Measurement of Bilingual Background. New York: Bureau of Publications, Teacher's College, Columbia University, 1934.
- Lado, Robert. Linguistics Across Culture: Applied Linguistics for Language Teachers. Ann Arbor: The University of Michigan Press, 1957.

- . Language Testing: The Construction and Use of Foreign Language Tests. New York: McGraw-Hill, 1951.
- Politzer, Robert L. and Ramirez, Arnulfo G. "An Error Analysis of the Spoken English of Mexican-American Pupils in a Bilingual School and a Monolingual School." Language Learning: A Journal of Applied Linguistics 23(1) (June 1973): 39-61.
- Politzer, Robert L. and Staubach, Charles N. Teaching Spanish: A Linguistic Orientation. Waltham, Massachusetts: Blaisdell Publishing Company, 1965.
- Siegel, Sidney. Nonparametric Statistics for the Behavioral Sciences. New York: McGraw-Hill, 1956.
- Stockwell, Robert P., Bowen, J. Donald, and Martin, John W. The Grammatical Structures of English and Spanish. Chicago: The University of Chicago Press, 1965.
- Ugarte, Francisco. Gramática Española de Repaso. New York: The Odyssey Press, 1958.
- U. S. Bureau of the Census. Current Population Reports P-20, No. 250. "Persons of Spanish Origin in the United States: March 1972 and 1971." U.S. Government Printing Office. Washington, D.C., 1973.
- Warner. W. L., Meeker, M. and Eells, K. Social Class in America. Chicago: Science Research Associates, 1949.
- Weinreich, Uriel. Languages in Contact: Findings and Problems. Originally published as No. 1 in the series "Publications of the Linguistic Circle of New York" (New York, 1953). Third Printing, The Hague, the Netherlands: Mouton & Company, 1964.
- Whitman, Randal and Jackson, Kenneth L. "The Unpredictability of Contrastive Analysis." Language Learning: A Journal of Applied Linguistics 22(1) (June, 1972): 29-41.

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