THE EFFECT OF EXAMINER ETHNICITY AND LANGUAGE ON THE PERFORMANCE OF BILINGUAL MEXICAN-AMERICAN FIRST GRADERS

by

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ABSTRACT

It was hypothesized that a Mexican-American examiner would obtain higher rates of bar pressing from bilingual Mexican-American first graders than an Anglo examiner, and that praise in Spanish would elicit higher rates than praise in English. Forty subjects were randomly selected from among the bilingual Mexican-American first graders in a deprived area school.

Each examiner worked with two groups of five boys and five girls, praising them in Spanish and English during two experimental phases. For one group, Phase 1 praise was Spanish, Phase 2 praise English. For the second group, that language order was reversed.

The Ethnicity main effect and Order x Language interaction reached statistical significance. Subjects praised by the Mexican-American examiner attained higher levels of bar pressing than those praised by the Anglo examiner. Those praised in Spanish then English achieved higher rates than those praised in English then Spanish. While the effectiveness of Spanish praise was not affected by order, that of English increased when dispensed after Spanish praise.

Discussion of the results includes their relation to past studies, generalizations and delimiting factors.

CHAPTER 1

INTRODUCTION

Mexican-Americans comprise one of the largest minority groups in the United States, and the vast majority of them leave school before completing their formal education (McDonagh and Richards, 1953). In 1960 the median schooling for Mexican-American males throughout the Southwest was 8.1 years, for non-whites 8.3, and for Anglos 11.8 (Fogel, 1967).

A survey of Mexican-American families with children in poverty area schools of Tucson, Arizona, revealed that the mean schooling for the fathers in the sample was 7.9 years, for the mothers 7.5. Only 11 per cent of all the Mexican-American parents in this sample had completed high school (Yoshino, Ayala, Garcia, Gonzales, Spence, and Winheld, 1969).

In another investigation of Mexican-American children in Tucson, Henderson (1966, p. 3) reported that by junior high school, the cumulative records of these students "indicate that the performance gap between low-achievement and school ability tests grows larger as the children progress through school." Clearly, the inability of schools to successfully develop the academic skills of many Mexican-American

students, or even to motivate them to stay in school long enough for teachers to try to teach them, demands attention.

Since the cumulative deficit mentioned by Henderson has also been found to be characteristic of children of other economically deprived groups (Deutsch, 1965), social scientists have studied low socioeconomic status (SES) characteristics which might account for this phenomenon. Some researchers have compared middle and lower SES mother-child interaction patterns (Bee, Van Egeren, Streissguth, Nyman, and Leckie, 1969; Hess and Shipman, 1965; Walters, Connor, and Zunich, 1964): others have focused on differences within the lower class itself to determine what attributes lead to the successes of some of its members and not of others (Henderson and Merritt, 1968; Henderson, 1966).

These studies, however, have investigated what happens to children outside of the classroom and are not immediately useful to a teacher who wonders how best to help her students.

Skinner (1965) and Homme (1967) have advised teachers that successful teaching lies in the arrangement of reinforcement contingencies in the classroom. Homme (1967) stated that one can teach any behavior desired; the first job is to find a reinforcer. One can then establish a shaping program by reinforcing approximations. In less technical language, the children will learn if they are motivated.

Proponents of bilingual education have asserted that teaching the non-English speaking child in English is a rejection of his mother tongue which diminishes his motivation and hinders his learning (Inter-Agency Committee on Mexican American Affairs, 1967). Accordingly, it has been suggested that the teacher of this child should conduct class in his mother tongue, with a thorough awareness of his linguistic and cultural background, preferably because she is a member of his cultural group (NEA-Tucson Survey, 1966).

In 1968 the United States Congress approved Title VII, the Bilingual Education Act, authorizing annually increasing funds culminating in forty million dollars for the school year ending June 30, 1970. These funds were to be used to establish and run pilot bilingual education programs for "children of limited English-speaking ability." The 1969 Arizona Legislature amended a law which forbade the use of any language other than English for school instruction (thus making the state eligible for federal funds) and authorized the appropriation of $100,000 for bilingual education in the state.

The Tucson survey mentioned previously revealed that 45 per cent of the Mexican-American mothers in the sample spoke to their children solely in Spanish; only 12 per cent spoke to their children exclusively in English (Yoshino, et al., p. 34). Thus, as many as 88 per cent of these entering first grade students may respond to English as a second

language. As would be expected, a pilot bilingual education program has been started in two of the southwest schools in Tucson School District No. 1.

These authorizations of millions of dollars stem from the belief that instruction in English was partly responsible for the poor academic performance of many non-English speaking students. However, as Macnamara has written "the linguistic effects of teaching in a second language are unknown (Macnamara, 1967b, p. 133)." More important for the purpose of this study he stated that practically nothing is known about the effects of instruction in a second language on "emotional aspects" of the child's development.

Mexican-Americans, of course, are not the only group of students who have difficulties in school. Nor are they the only apathetic ones. In discussing the lack of motivation that seems to afflict many low SES students, Meacham and Wiesen (1970) have specified that these children tend not to respond to social reinforcement such as teacher approval or praise. However, ample research cautions that this motivational variable is complex and in need of further and much more careful study (Sattler, 1970; Brooks, Brandt, and Wiener, 1969; Marshall, 1969; Stevenson, 1965).

Practically all of these studies on social reinforcement have been conducted with Anglo or Negro American subjects; little is known about

the effect of this variable on Mexican-American children. Furthermore, research on the largest minority group in the Southwest (Inter-Agency Committee on Mexican-American Affairs, 1967) is also lacking in the area of racial experimenter effects (Sattler, 1970).

Purpose of the Study

The purpose of this study, therefore, was to investigate how the behavior of bilingual Mexican-American first graders would be affected by adult praise, by the ethnicity of the praise agent, and by the language in which the praise was given.

The questions asked by this study were:

1. Will the children demonstrate higher levels of bar pressing behavior when praised by a Mexican-American or an Anglo adult?

2. Will praise given in English or Spanish elicit higher levels of bar pressing in Mexican-American children?

3. Will the language of the praise interact with the praise agent's ethnicity in determining bar pressing behavior of the Mexican-American child?

4. Does the sex of the child interact with the language of praise or ethnicity of praise agent?

Definition of Terms

The terms used in discussing this problem are defined as follows.

Bilingual Children. Students who came from homes where Spanish was at least one of the languages spoken and who had spoken some Spanish in class according to the teacher. Since the experiment was conducted near the end of their first year of school, it was assumed that all the children could also converse to some degree in English. Conversations between the examiner (E) and her subjects (Ss) enroute to the experimental room confirmed this assumption.

Mexican-American. For the purposes of this study, an individual with a Spanish surname who speaks Spanish and was born in the United States or immigrated from Mexico.

Anglo or Anglo American. An American-born caucasian who is not of Mexican or Latin heritage.

Ethnicity. Identification with "any group which is defined or set off by race, religion, or national origin, or some combination of these categories (Gordon, 1964, p. 27)."

Language. In this study, language refers to either Spanish or English, not to any linguistic component of either code system.

CHAPTER 2

EMPIRICAL AND THEORETICAL BASES OF THE STUDY

The literature relevant to this study includes investigations on the determinants of verbal reinforcement effectiveness for children, on the effects of examiner ethnicity on children's task performance, and on the role of a language code as a reinforcer.

Determinants of Verbal Reinforcement Effectiveness

Extensive research in the field of verbal reinforcement of children's behavior has uncovered numerous variables which affect the child's response. Among the most important are such subject characteristics as the child's race, sex, chronological and mental age, birth order, and such personality characteristics as dependency, anxiety, help-seeking and attention-getting tendencies, aggressiveness, and suggestibility. Important environmental factors include SES background, child-rearing practices, institutionalization, and social deprivation. Characteristics of the reinforcing agent which may influence S response include race, sex, age, anxiety, need for approval, birth order, intelligence, relative status, warmth, and familiarity and relationship with S (Sattler, 1970; Rosenthal, 1966; Stevenson, 1965; Salzinger, 1959; Atkinson, 1958; Krasner, 1958).

Terrell, Durkin, and Wiesley (1959) compared the efficacy of candy and knowledge of results (KOR), in the form of a light flash, as reinforcers of the performance of 485 middle- and lower-class children on a simple discrimination task. They found that middle class Ss performed better when reinforced by KOR, whereas lower class Ss did better under the candy incentive. The authors interpreted their results as indications that middle class parents place greater emphasis on learning for its own sake and thus have developed KOR as a secondary reinforcer for their children. From the lower class data, they posited that lower class children were too preoccupied with obtaining material, day-to-day needs to develop such secondary reinforcers; that being more deprived of candy than middle class youngsters, they would develop a more intense desire for candy.

In a study which has stimulated much research, Zigler and Kanzer (1962) found that while both types of verbal reinforcers under investigation were more effective with middle class second-graders, performance reinforcers such as "right" and "correct" were more effective than person reinforcers such as "good" or "fine." The reverse was true with lower class Ss.

Zigler and Kanzer theorized that for the middle class child being right was more often associated with primary and secondary reinforcement, that reinforcers such as attention and praise become less effective

with maturity and are replaced by knowledge that one is correct, which appears to serve as a cue for dispensing self-reinforcement. Lacking a history of such pairings of primary and secondary reinforcement with "correctness" remarks, the authors suggested, lower SES children are developmentally slower and are thus less affected by abstract reinforcers than middle SES Ss.

Rosenhan and Greenwald (1965) repeated the Zigler and Kanzer (1962) experiment, controlling the factor of race which had been confounded in that study. Comparing 20 Negro and 20 Anglo lower class children with 20 middle class Anglo Ss on a marble-dropping task they obtained no signfiicant main effects for SES, sex, or type of reinforcement. No significant interaction between SES and type of reinforcement was obtained, thus failing to support the Zigler-Kanzer findings. Contrary to the findings of that study, Rosenhan and Greenwald found that middle class girls and lower class boys demonstrated greater responsiveness to both kinds of verbal reinforcers than middle class boys, thus producing a significant interaction between sex of S and SES. A comparison of the two low SES groups revealed that only the main effect for sex reached significance with boys being more responsive than girls to both reinforcement types.

A second experiment reported by Rosenhan and Greenwald (1965) examined the hypothesis that older children respond more to performance reinforcers than younger children, another Zigler-Kanzer prediction.

A significant sex of S by reinforcer class interaction occurred; boys were more influenced by performance reinforcers than were younger children. While none of the expected differences were found between lower and middle class Ss, these studies did demonstrate that even seven-year-old children are sensitive to the semantic nuances between person and performance reinforcers.

Responding to the Zigler-Kanzer investigation, McGrade (1966) compared the performance of kindergarten, second- and fourth-grade children from four SES levels on a two choice marble-dropping game. She employed three types of verbal reinforcers: right/correct, good/fine, and great/swell; plus two directions for the reinforcers: "You're..." and "That's..." The data revealed no significant differences as a function of SES, and the predicted interactions between reinforcers and age or SES failed to materialize.

On one response measure, however, an unexpected significant interaction between age and SES occurred as a result of the similar performance of the highest and lowest SES groups at the kindergarten and second-grade levels and the two middle SES Ss at the second- and fourth-grade levels. The author suggests that children discriminate between adults who are similar or different from their families and that their response to these similarities or differences is affected by their age. To explain the significant interaction, she proposed that middle

SES Ss perceived the E as similar whereas the highest and lowest SES Ss perceived her as different.

McGrade concluded that her findings cast doubt on the Zigler-Kanzer interpretations of these reinforcers as abstract information and "concrete" reward. She further advanced that the different results obtained by Zigler and Kanzer (1962) and Rosenhan and Greenwald (1965) might have been due to experimenter bias and other effects. Where her E was unaware of her hypotheses, those of the other researchers apparently were not. The Es employed in all of the other studies were also middle class, which could very likely have influenced the results as well (Rosenthal, 1966).

In a recent study, Marshall (1969) investigated the effects of two levels of task interest, two levels of SES utilizing only educationally relevant criteria from the composite index, and five types of reinforcements: KOR, immediate verbal, delayed-verbal, delayed-material, and a combination of immediate- and delayed-verbal, on the marble-dropping performance of 160 Caucasian kindergarten children.

Analyses revealed that informative verbal reinforcers were equally effective with both SES groups when presented immediately; delay lowered the performance of low SES Ss. Material reinforcement hindered the performance of both groups. Low SES Ss learned the high interest task as quickly as high SES Ss and quicker than they learned the low interest

task. On the other hand, the high SES groups performed better on the low interest task than on the high interest one and performed higher than the low SES Ss.

In interpreting her results, Marshall advanced one explanation which is congruent with the Zigler-Kanzer interpretation of their findings. She suggested that the high SES Ss performed better than the low SES Ss under the delayed verbal reinforcement condition because high SES kindergarten children may be able to utilize information provided at a delay whereas low SES children have yet to learn that ability. Low SES kindergarten children may need immediate verbal information to focus their attention on the task, an explanation which Marshall proposed was supported by the superior performance of the low SES Ss on the high interest task.

Marshall concluded that contrary to previous research, symbolic, or what Zigler and Kanzer (1962) called abstract, reinforcers may be effective with low SES Ss as well as with high SES Ss under certain conditions, namely, when the reinforcers are immediate, informative, and focus the S's attention on the relevant aspects of the task.

While the sociological question of how a S's SES determines a child's response to verbal reinforcement has intrigued numerous researchers, even greater fascination has arisen from the more fundamental question, stimulated by the Gewirtz and Baer (1958a, 1958b) studies of

what manipulable variables in the immediate situation enhance the reinforcement capacity of social stimuli and why they do so (Gewirtz, 1969; McArthur and Zigler, 1969; Stevenson, 1965; Walters and Parke, 1964a, 1964b).

Gewirtz and Baer (1958a, 1958b) hypothesized that social reinforcement operates as a drive subject to deprivation and satiation manipulations as are primary appetitive drives. Hence, a child who has been deprived of social reinforcers will demonstrate an enhanced responsivity to such reinforcement, while one who has been satiated will demonstrate lessened receptivity. These hypotheses were tested in a series of studies.

In the first (1958a), each of 16 boys and 16 girls participated in a simple two-choice discrimination task during which the E reinforced correct responses with verbal approval. Half the sample played the game, experienced a 20-minute period of social isolation, then played the game again, waited a day and played the game a third time. The other half played the game; the following day they experienced the isolation period followed by the game. The analyses revealed that a preceding period of 20-minutes of social isolation enhanced the reinforcement effectiveness of adult approval. This effect was especially marked with the E of the opposite sex, particularly with boys, tested by the female E.

In the second investigation (1958b), three experimental conditions included (1) a 20-minute isolation period, (2) no deprivation and (3) a "satiation" period consisting of 20 minutes during which the S engaged in free-play in the presence of an approving adult. Again learning was most rapid following isolation. Ss under the nondeprivation condition, who were tested immediately after leaving their classroom, learned faster than those in the satiation condition.

While subsequent research has supported the Gewirtz and Baer results and their social drive explanation of social reinforcer effectiveness (Gewirtz, 1969, 1967; Berkowitz, 1964; Erikson, 1962), five other explanations have been advanced: (1) the stimulus-deprivation hypothesis (Hill and Stevenson, 1964; Stevenson and Odom, 1962); (2) the information hypothesis (Cairns, 1963a); (3) the frustration hypothesis (Cairns, 1963b; Hartup and Himeno, 1959; Hartup, 1958); (4) the general arousal or anxiety hypothesis (Walters and Parke, 1964a, 1964b; Walters, Callagan, and Newman, 1963; Walters and Foote, 1962; Walters and Henning, 1962; Walters and Karal, 1960; Walters and Ray, 1960); and (5) the valence position (McArthur and Zigler, 1969; Berkowitz, Butterfield, and Zigler, 1965; Berkowitz and Zigler, 1965; McCoy and Zigler, 1965; Shallenberger and Zigler, 1961). The last position is particularly interesting with respect to this study.

From the valence position, Zigler and his associates (McArthur and Zigler, 1969; Berkowitz, Butterfield, and Zigler, 1965; Berkowitz and Zigler, 1965; McCoy and Zigler, 1965; Shallenberger and Zigler, 1961) proposed that the nature of the child's interactions with particular adults determines their effectiveness as reinforcing agents. An adult develops a positive valence for a child following a positive interaction. In subsequent interactions between the child and adult, this positive valence results in the enhancement of the adult as a reinforcing agent. A negative interaction, on the other hand, results in a negative valence which diminishes the adult's social reinforcer effectiveness.

On the possibility that both the valence and social drive hypotheses might be valid, McArthur and Zigler (1969) investigated the effect of both (1) level of satiation with social stimuli and (2) attitude of the child toward the reinforcing agent (valence). The experiment consisted of two parts. During Session 1, E 1 manipulated valence by showing Ss a film depicting her as behaving in a nice or nasty fashion. Three days later, Session 2 took place with E 2 satiating half the Ss with verbal approval. Subsequently, E 1 administered the criterion task, a marble-dropping game. The dependent variables consisted of persistence, base rate, and change of rate scores. Both the persistence measure and the base rates supported the valence position and offered little support to the social drive theory.

McArthur and Zigler posited that the failure of their study to replicate the relative satiation effects reported in previous investigations could be attributed to (1) their E administering the criterion task being unaware of the satiation condition of S; (2) the Ss being satiated or deprived of social reinforcers by a different adult; and (3) the different measures of social reinforcer effectiveness which strengthened the study by considering the thorny issue of what constitutes a satisfactory measure of reinforcer effectiveness (Parton and Ross, 1965, 1967; Stevenson and Hill, 1966).

The valence position brings to mind the comments made by McGrade (1966) on the effect of E's SES characteristics on the effectiveness of her verbal reinforcers. Conceivably, an E from the same SES as S might not only evince those behaviors which were similar to the child's parents, but would also possess the behaviors which would most readily put the child at ease and more quickly develop a positive valence for the child. If this held true for SES background, it might be even more marked for racial or ethnic affiliation.

Effect of Examiner Ethnicity

Reviews of the literature in the area of physical and personal characteristics of E indicate that ethnicity is of primary importance, particularly for the performance of young children on simple tasks (Sattler, 1970; Rosenthal, 1966).

Kennedy and Vega (1965) employed three Negro and two Anglo male Es to dispense three types of incentives (praise, criticism or silence) for performance on a simple discrimination task by southern Negro children from three age groups: second, sixth, and tenth grade; and three IQ levels: high, medium, and low. Both praise and silence obtained higher performance across IQ and age levels. Under the criticism condition, second- and tenth-graders performed higher with the Negro Es than the Anglo Es. All other differences were not significant.

Allen, Dubanoski, and Stevenson (1966) also compared the effect of praise, criticism, and silence dispensed by three Negro and three Anglo female Es for performance on a marble-dropping task. The Ss were Negro and Anglo midwestern boys. A younger group consisted of students in the first and second grades; the older group of boys in the fourth through sixth grades. Numerous interactions among the five variables (Race of E, of S, 3 incentives, age of S, and three experimental periods: baseline, incentive treatment, and praise) rendered interpretations of the results difficult. Overall, while the Anglo Es obtained higher initial rates, the Ss tested by a Negro E attained higher total scores.

Katz, Henchy, and Allen (1968) employed two Negro and two Anglo male Es to dispense praise or criticism for performance on a verbal learning task. The Ss, seven- to ten-year-old low SES Negro boys,

were categorized into a high or low need-for-approval group. All Ss performed better when praised than criticized and when tested by a Negro E than an Anglo E. High need-for-approval Ss attained high levels of performance except when criticized by the Anglo E. Low need-for-approval Ss performed at relatively low levels except when praised by the Negro Es.

In an incomplete advance report, Berger and Tedeschi (1969) discuss the behavior of southern Negro boys in a modified Prisoners' Dilemma game, a situation in which they must decide to cooperate or compete, and/or aggress against Negro or Anglo Es. While the Es' race did not affect their decision to compete or cooperate, Ss playing with a Negro E tended to aggress more against the Negro E than against the Anglo E.

Gahagan, Long, and Horai (1969) also employed a modified Prisoners' Dilemma game with one Negro and three Anglo male Es and found that the Ss, southern Negro fifth and sixth grade children, were more cooperative with the Negro E when the message contained both an order and a threat than with the Anglo Es. The authors interpret their findings as indicating that their Ss preferred the approval of the Negro adult over that of the Anglo adults.

In reviewing the literature on the race of E effect, Sattler (1970) concluded that the E's race plays a more critical role when Negro

children are performing cognitive or decision-making tasks rather than motor tasks such as those described above. He suggested further that the findings also indicate that Negro Es may at times enhance the performance of Anglo children more than Es of their own race.

Sattler includes not a single study on the effect of E's race investigating Mexican-American Ss and Es. In a current study, Shitala Mishra (personal communication, July 18, 1970) investigated the effect of E ethnicity on the performance of 96 third grade boys and girls on three intelligence measures: WISC Information and Vocabulary Sections and the Ravens Progressive Matrices (Colored Form). Thirty-six of the Ss were Anglo children; 36 were Mexican-American children in an innovative educational program and 36 in a "traditional" program.

Both Mexican-American groups performed significantly better when examined by Mexican-American E on the WISC Vocabulary Section. The performance of the Anglo Ss was not significantly affected by the E's ethnicity. Mishra suggested that examination by a Mexican-American E facilitates the verbalization of the Mexican-American Ss.

From Mishra's study and from the valence studies on verbal reinforcement effectiveness, one might predict that given two unfamiliar adults, Mexican-American children might achieve a higher level of performance when tested by a Mexican-American E than an Anglo E. Mexican-American ethnicity, however, is determined by more than physical

appearance. Many Mexican-Americans and social scientists (Yoshino et al., 1969; Chilcott, 1968; Figuero, 1968; Christian and Christian, 1966; Heller, 1966; Madsen, 1964) consider language--the use of Spanish--an important criterion.

Language Codes as Reinforcers

In discussing the acquisition of language, Baldwin (1968) wrote that for children "the stimuli emitted by the caretaker are reinforcing and satisfying even if they are produced by the child himself (1968, p. 459)." Verbal stimuli may acquire their positive valence through association with primary reinforcers dispensed by the caretaker. Describing this acquisition of positive valence, John Carroll (1961) wrote:

> In the early phases, language behavior is very closely related to the satisfaction of the immediate physiological needs and wants of the child, but as he matures, this relation may become increasingly indirect in pace with his growing curiosity about the nature of of this complex environment and its meaning for him, and also in pace with the widening of his circle of relationships with other people. Toward the end of the second year of life the normal child starts an intense use of language to explore his relations with people and things. . . . . The trend is from an affective-motivational role of language to a cognitive one (Carroll, 1961, p. 341).

Although language originally influences the child as a general positive stimulus, as the child develops his own language behavior he is capable of using this skill to obtain additional reinforcers. Thus Skinner defined language or verbal behavior as "behavior which is affective only through the mediation of other persons (1957, p. 2)."

Sapir (1933) enumerates four ways in which language provides access to social reinforcers: (1) Language serves as a from of socialization by providing communication between members of a group, by functioning as a symbol of social solidarity, and by providing a means of establishing rapport between members of a physical group. (2) Language acts as a culture-preserving instrument, whereby cultural forms are transmitted from generation to generation. (3) Language is a factor determining the growth of individuality, or development of social personality. (4) Language marks the psychological place of the individual within a social group.

The above literature delineating the manner in which the primary language acquires its positive valence has many affective manifestations. Socio- and psycholinguists generally agree that most people develop a powerful emotional involvement with the language first learned (Ervin-Tripp, 1969; Staats, 1968; Lambert, 1967; Macnamara, 1967a; Fishman, 1965; Hymes, 1964; Carroll, 1961; Lotz, 1961; Haugen, 1956; Weinreich, 1954; Barker, 1947; Sapir, 1933).

This emotional involvement with the primary language may create problems for the bilingual. According to Lambert (1967), the development of bilingual skill involves more than a special set of language aptitudes since numerous social attitudes and motives are intimately involved in learning a foreign language: "The whole process of becoming bilingual

can be expected to involve major conflicts of values and allegiances, and bilinguals could make various types of adjustments to the bicultural demands made on them (1967, p. 91)."

In his classic work, Languages in Contact, Weinreich (1954) described six factors which affect the child's adjustment to a bilingual situation: (1) his attitudes toward each language; (2) his manner of learning each language; (3) the prestige or stereotyped attitudes held by society toward each language, e.g., the status as an indigenous or immigrant language; (4) the attitudes toward the culture of each language community; (5) the attitudes toward bilingualism itself; and (6) the relation between the bilingual group and each of the two language communities of which it is a marginal segment.

Madsen (1964) utilized some of these factors to describe the bilingual situation that exists among the Mexican-Americans in south Texas:

> From the Anglo viewpoint, Spanish is the primary symbol of the "foreignness" of the Mexican-American. For the Latin, Spanish is the primary symbol of loyalty to La Raza. The Mexican-American who speaks English in a gathering of conservative Latins is mocked and regarded as a traitor to La Raza (Madsen, 1964, p. 106).

Barker (1947) employed many of these factors in his study of the social functions of language among the Mexican-Americans of Tucson and found that Spanish was identified in the Mexican-American community as the language of intimate and family relations, while English was the

language of formal social relations and of all relations with Anglos. A more recent survey of Tucson Mexican-Americans revealed that the interviewees frequently used Spanish with their close relations but were more likely to switch into English as the social distance between themselves and their listeners increased (Yoshino et al., 1969).

Hypotheses

The investigations cited in this chapter serve to suggest hypotheses regarding the effects of ethnic identity and language of a reinforcing adult on the task performance of young Mexican-American children. Studies of verbal reinforcer effectiveness indicate that adults who are the most effective social reinforcing agents are those who have the highest valence for the child. From the race of E studies, it could be predicted that for Mexican-American children a Mexican-American adult might have a higher valence than an Anglo adult. Research and theory related to the process by which a primary language acquires reinforcing properties suggest that Spanish may function as a more powerful reinforcer to many bilingual Mexican-Americans than English. Given these considerations, the following hypotheses were developed.

Hypothesis 1: Praise in Spanish will obtain higher rates of bar pressing than praise in English. A significant language main effect was expected.

Hypothesis 2: Ss praised by the Mexican-American E will demonstrate significantly higher levels of bar pressing than those praised by the Anglo E. A significant main effect for ethnicity was expected.

CHAPTER 3

METHOD

Subjects

Twenty male and 20 female Ss were randomly selected from the population of bilingual Mexican-American first grade students at a school in a low SES area in the Tucson metropolitan area. Mexican-American children comprised over 94 per cent of the first graders in the school. School records and teacher reports indicated which first graders belonged to the population of bilingual Mexican-Americans. The mean age of the 40 sample Ss was 82.3 months, the range 74 to 93 months.

Examiners

The two examiners were both female education graduate students in their early twenties. The Anglo E, of Irish-German ancestry, grew up in Maryland, was 5 feet 2 inches tall, with fair skin, brown hair, and light blue eyes. The Mexican-American E, of Mexican Indian-Spanish ancestry, grew up in Tucson, was 5 feet 2 inches tall, with olive skin, black hair, and dark brown eyes. The Anglo E had taken three years of college Spanish and had spoken it occasionally during the two years she had lived in Tucson. The Mexican-American E was a native

speaker of Spanish and had studied it for four years in college. After intensive practice prior and during the experiment, the pronunciation and delivery of the instructions and praise were judged comparable by an independent group of bilingual Mexican-American graduate students.

Apparatus and Task

A one-gallon Hills Brothers coffee can with the red filigree pattern was converted into a clown-faced bar press mechanism (see Figure 1). A Veeder-Root electric counter wired to the tongue of the clown recorded the number of times S pressed the clown's tongue. Also connected to the tongue was a Gerbrand's Cumulative Recorder. One pen on the recorder graphically registered each S's bar pressing behavior; a second pen was connected to an "event button" which E held in her hand and pressed to mark the beginning and end of each experimental phase as well as to note any unusual occurrence or event such as the door of the room swinging open and distracting S or S ripping off the top of the clown's head.

The clown was taped four inches from the edge of a primary-size table in the eight-foot by ten-foot experimental room within a mobile trailer located on the school grounds. Each room of the trailer had an outside door. The wires to the recorder and counter extended from the back of the clown through a hole in the wall to a separate control room

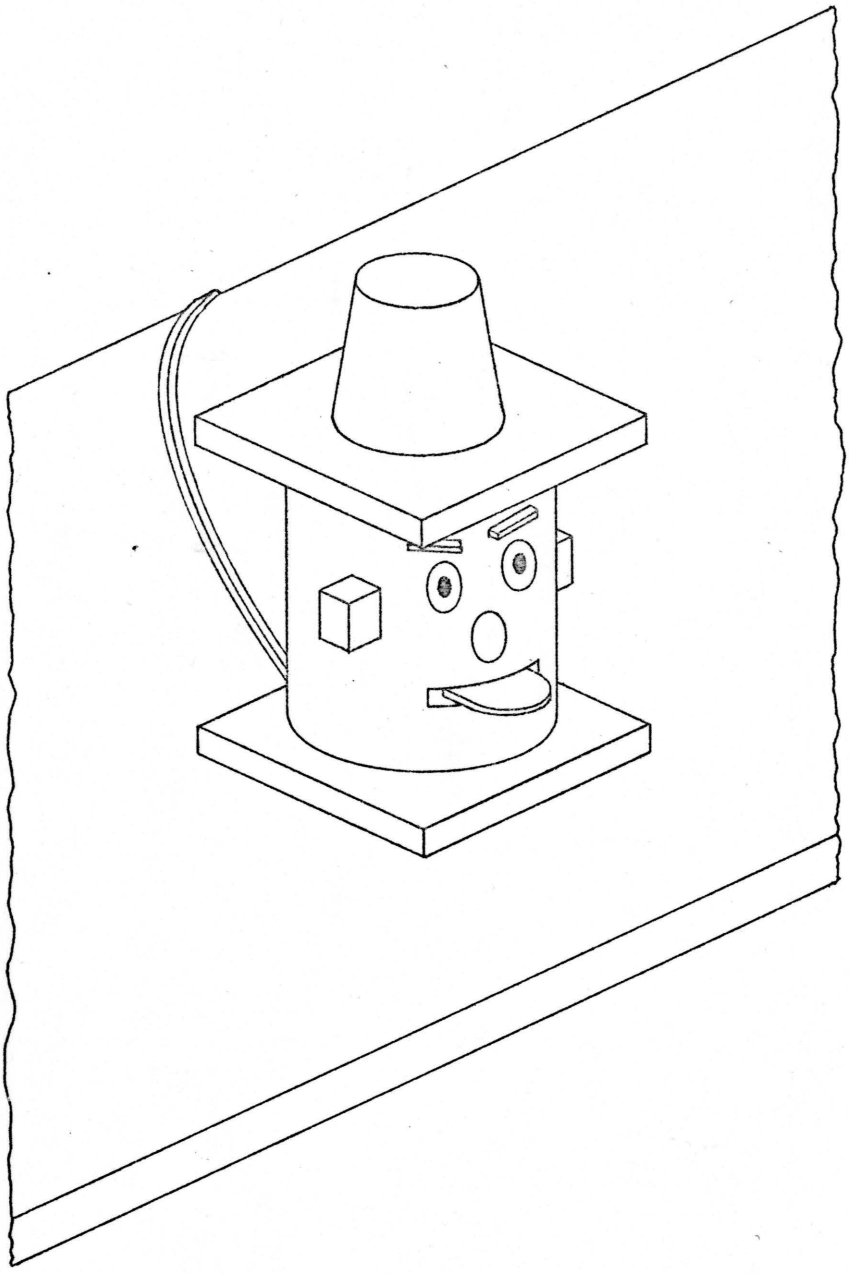

FIGURE 1. BAR PRESS APPARATUS

where the counter and recorder were monitored by an experimenter. The wires to the event button passed through the same hole. On E's table directly behind S rested the event button, a copy of the instructions, a stop watch, and the schedule of reinforcers (Appendix A).

In reviewing the studies involving social reinforcement, Stevenson (1965, p. 99) describes an appropriate task for this type of research as one which is "dull, apparently endless, requires minimal prior learning, has no clear criteria for adequate performance, and uses discrete responses." Bar pressing, the task selected for this study, clearly is dull, has no visible product or end, requires almost no prior learning, permits the adult to praise the child any time he presses since there are no other standards of satisfactory performance, and utilizes discrete responses which can be counted.

Procedures

School records were examined to determine which first grade students had Spanish surnames, were born in the United States or Mexico, and came from homes where Spanish was at least one of the languages spoken. The first grade teachers or teaching assistants indicated which students had spoken Spanish in class. From this population of 60 bilingual Mexican-Americans, the sample of 40 was randomly selected. This sample was randomly divided into four groups of ten, with equal numbers of boys and girls in each.

To control the effects resulting from the time of day, all experimentation took place between 9:30 and 12:00 noon. Each E worked with two groups, following detailed instructions on what to say and in what manner to respond to each S from the time E met S in the classroom to the end of the experimental session. Twenty non-sample students served as pilot Ss to enable the Es to thoroughly familiarize themselves with the experimental procedures.

Each S experienced two phases lasting three minutes each. Before the first treatment phase, S was instructed to familiarize himself with the apparatus. During Reinforcement Phase One, E praised S on an increasing variable interval schedule (Appendix A). Reinforcement Phase Two consisted of a repetition of Reinforcement Phase One with E praising S in the alternate language, i.e., if she praised him in Spanish during the previous phase, she praised him in English during this phase.

Upon entering the experimental room, E guided S over to the table with the clown, asked him to sit down on a small chair placed in front of the clown, giving the following instructions: "This is where you will be playing your part of the game," whereupon E pressed the tongue exactly ten times in 3.5 seconds. E modeled ten presses and stressed the word pressing to insure that S perceived that the game was continuous.

E explained that her part of the game would involve doing some work seated directly behind S with her back to him: "I'll play the game

with you in a few minutes, but before I do that I have to do some work. While you're waiting, you can play with the clown or rest or do anything you like. Ok?"

E then began the stop watch, sat down at her table, and did paper work for three minutes while S familiarized himself with the apparatus and the situation. Their position facing away from each other forestalled any interaction between E and S, precluding E's inadvertent reinforcement of S's behaviors by her facial expressions or posture (Wickes, 1956). Very few Ss left their chair in order to interact with E; those who did were ignored.

At the beginning of the first reinforcement phase, E looked over her shoulder, saying, "It's time to begin the game. Do you remember what you're going to be doing? ...You will be pressing the tongue."

If praise during this phase was to be in English, she continued, "Are you ready? Ok. Start pressing now." If the instructions and praise were to be in Spanish she then said, "Vas a plastar la lengua. Estas lista(o) para comensar? Ok. Comiensa aplastar ya." She then praised S's bar pressing as specified in Appendix A.

After this reinforcement phase, E stopped S for 30 seconds, then instructed S in the alternate language to begin pressing again, reinforcing on the same schedule but in the second language. Following this phase, E stopped S.

CHAPTER 4

RESULTS AND DISCUSSION

Results

Rate, the total frequency of bar presses per experimental phase, served as the dependent variable in all the computations. Table 1 presents the mean number of presses and standard deviation for each phase under the four experimental conditions.

A 2 (Ethnicity) x 2 (Language Order) x 2 (Praise Language) factorial analysis of variance design was used for the major analyses (Winer, 1962, p. 337). Table 2 presents these results. The main effect of ethnicity and the interaction between language order and praise language proved significant. No other significant main effects or interactions resulted as a function of praise language, language order or sex.

The significant main effect ($F = 4.77$, $p < .05$) indicated that the ethnicity of the E influenced Ss' performance as predicted by Hypothesis 2; Ss demonstrated significantly more bar pressing when praised by the Mexican-American E than when praised by the Anglo E.

The interaction between language order and praise language is presented visually in Figure 3. Ss pressed significantly more during the

TABLE 1

MEAN NUMBER OF BAR PRESSES PER REINFORCEMENT SESSION UNDER FOUR EXPERIMENTAL CONDITIONS

	Spanish		English	
Condition	$\bar{X}$	SD	$\bar{X}$	SD
Mexican-American E				
Spanish First N = 10	313.6	92.16	340	28.22
English First N = 10	316.7	116.36	275.6	151.57
Anglo E				
Spanish First N = 10	222.8	148.27	301.3	196.97
English First N = 10	205.6	143.60	172.7	135.21

TABLE 2

ANALYSIS OF VARIANCE
ETHNICITY X LANGUAGE ORDER X PRAISE LANGUAGE

Source	SS	df	MS	F
Between Ss	1,309,518.89	39		
A (Ethnicity)	145,777.81	1	145,777.81	4.768*
B (Language Order)	54,653.52	1	54,653.52	1.79
AB	8,507.82	1	8,507.82	.28
Subj. w. groups (error between)	1,100,579.75	36	30,571.66	
Within Ss	130,541.5	40		
C (Praise Language)	1,044.02	1	1,044.02	.46
AC	4,851.62	1	4,851.62	2.14
BC	40,906.01	1	40,906.01	18.06**
ABC	2,194.51	1	2,194.51	.97
C x S w groups (error within)	81,545.35	36	2,265.15	

*P < .05
**P < .01

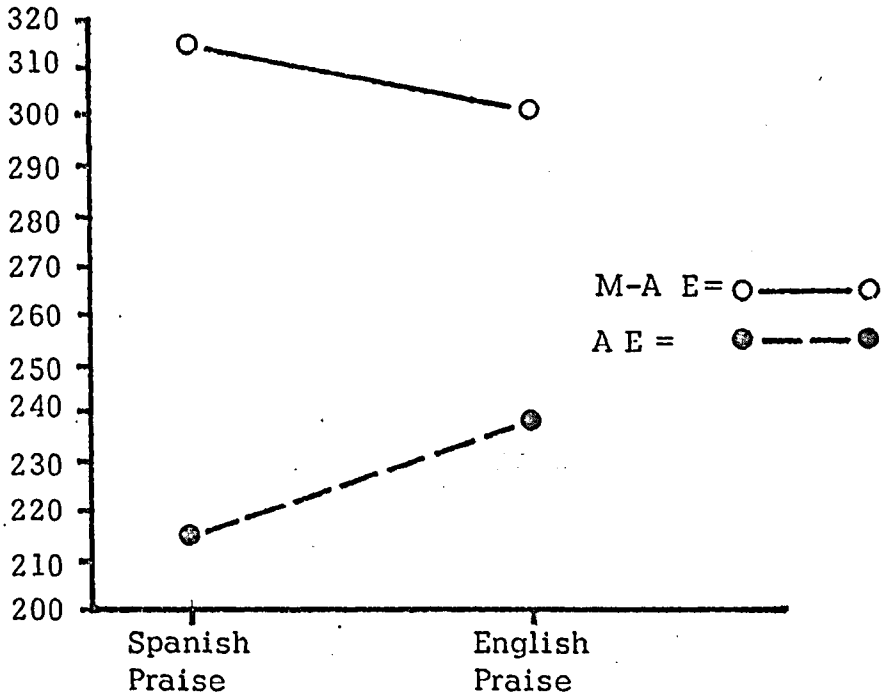

FIGURE 2. RATE AS A FUNCTION OF E ETHNICITY

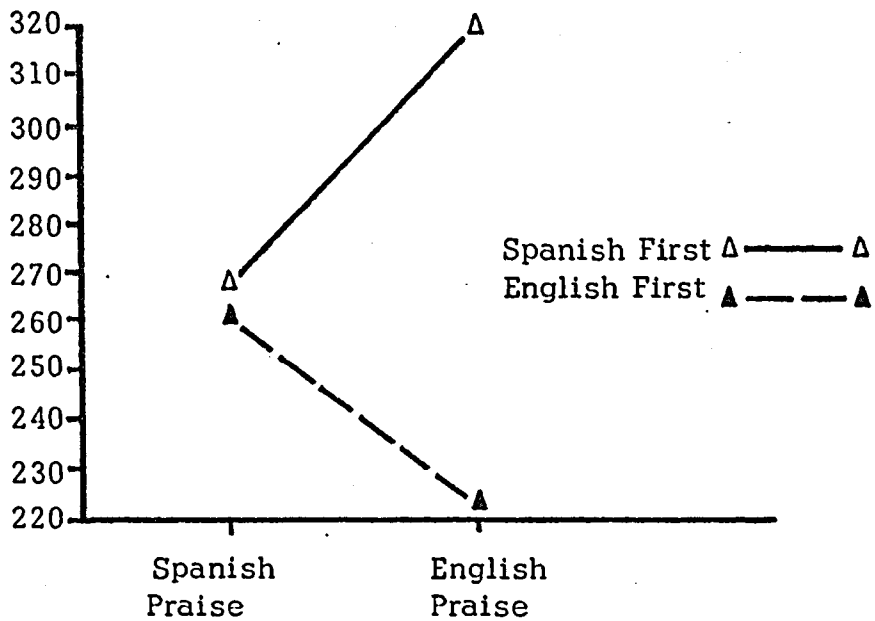

FIGURE 3. RATE AS A FUNCTION OF LANGUAGE ORDER BY PRAISE LANGUAGE

second praise session than during the first one ($F = 18.06$, $p < .01$). Simple main effects tests (Winer, 1962, p. 340) breaking out the components of this interaction revealed that while Spanish first was not significantly different from Spanish second, that is, Ss did not differ significantly in their response level when praised in Spanish before or after praise in English, English second was significantly more powerful than English first ($p < .01$); that is, Ss exerted themselves much more after they had been praised in Spanish than when praised initially in English. Overall, it appears that Ss who were praised first in Spanish achieved a much higher level of bar pressing than those who were first praised in English.

Discussion

In general, E ethnicity was a much stronger determiner of bar pressing behavior than the language in which praise was given. As predicted, bilingual Mexican-American children responded more to praise by a Mexican-American adult than they did to praise by an Anglo adult. A main effect for language was not obtained; thus, the results failed to support Hypothesis 1, which predicted that Spanish praise would elicit higher levels of bar pressing than English praise.

Interpretation of the language effect is clouded by the nesting effect of language in the order of presentation. Counter-balancing the order did control the warm-up effect which is frequently encountered

during the initial periods of motor task performance (Parton and Ross, 1965). The design of this study would have been strengthened had it included two additional groups of subjects who received praise in the same language during both praise phases. However, the lack of such groups precludes conclusive assertions on the effect of language without considering order. On the other hand, order may be particularly important now that the Bilingual Education Act has made the use of either or both languages a possibility.

While Ss were not affected by order when praised in Spanish, they pressed significantly more when praised in English after Spanish praise. Examination of Table 1 reveals that this effect was most dramatic when the Anglo E switched from Spanish, during which Ss reached a mean of 222.8, to English, when they attained a mean of 301.3 bar presses per phase. In contrast, when she began reinforcing in English, the mean equaled 172.7 and rose to a mean of 205.6 with Spanish praise. This could indicate that Anglo teachers might increase the effectiveness of their English praise by praising initially in Spanish.

The effect of E ethnicity was unmistakable in this study. However, this conclusion should be tempered by several delimiting factors. Only one E represented each ethnic group. Studies of this type should include at least two Es for each ethnic group.

In addition, experimental attempts to control personality factors may not have been completely successful. On the other hand, among Mexican-Americans, criteria for identification of a Mexican-American include behavioral attributes as well as possible physical characteristics (total conformance to the popular stereotype is not essential for acceptance as a Mexican-American). Therefore, future comparison of the two ethnic groups studied should ideally include identification and manipulation of these behavioral differences. It is highly unlikely that those who advocate that Mexican-American teachers instruct entering bilingual Mexican-American children are solely interested in teachers who merely fit the common physical stereotype and speak Spanish (Inter-Agency Committee, 1967; NEA Tucson Survey, 1966; Chavez, 1956).

In addition, other factors delimit the interpretation of the ethnicity results of the present study as indications that only Mexican-Americans should teach bilingual Mexican-American children. The findings resulted from the effect of one type of social reinforcement dispensed by a strange adult for a very simple response on a dull motor task for a duration of six minutes. Familiarity with the reinforcement agent, a different type of social reinforcement, a more complex, cognitive task and a longer or shorter treatment time could have yielded different results. A sample of children who differed in age, SES level, bilingual status, length of time in school, or in reinforcement history with respect to teacher and school

might have responded differently to the identical procedure.

Despite all of these cautions, the results of this investigation do support past studies (Mishra, personal communication, 1970; Chilcott, 1968; Spence, 1968; Heller, 1966; Madsen, 1964) that indicate that Mexican-American adults are likely to be more powerful than Anglos as reinforcing agents of young Mexican-Americans. These results also indicate the great need for much more research before unqualified recommendations can be made about who should teach what to bilingual Mexican-American children.

APPENDIX A

REINFORCEMENT SCHEDULE

Reinforce the first bar press emitted after the stop watch indicates the designated time.

During First Minute

Seconds		Seconds	
03	Very good	03	Muy bien
06	Good	06	Bien
09	Good, _____ Name	09	Bien, _____ Name
13	Very good	13	Muy bien
17	That's good	17	Esta muy bien
21	That's right	21	Esta muy bueno
26	Good	26	Bien
31	Very good	31	Muy bien
36	You're doing very well	36	Estas haciendo muy bien
41	That's good	41	Esta muy bien
47	Good	47	Bien
52	Very good	52	Muy bien
58	Very fine	58	Muy bueno

During Second and Third Minutes

Seconds		Seconds	
05	Good	05	Bien
10	That's right	10	Esta muy bien
17	Good	17	Bien
23	Very good, _____ Name	23	Muy bien, _____ Name
29	You're doing very well	29	Estas haciendo muy bien
34	Good	34	Bien
40	That's good	40	Esta muy bien
46	Very good	46	Muy bien
53	Good	53	Bien
60	Very good	60	Muy bien

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