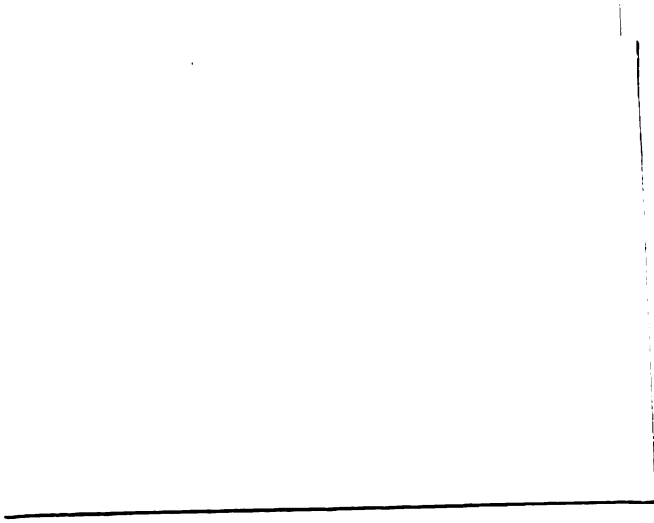


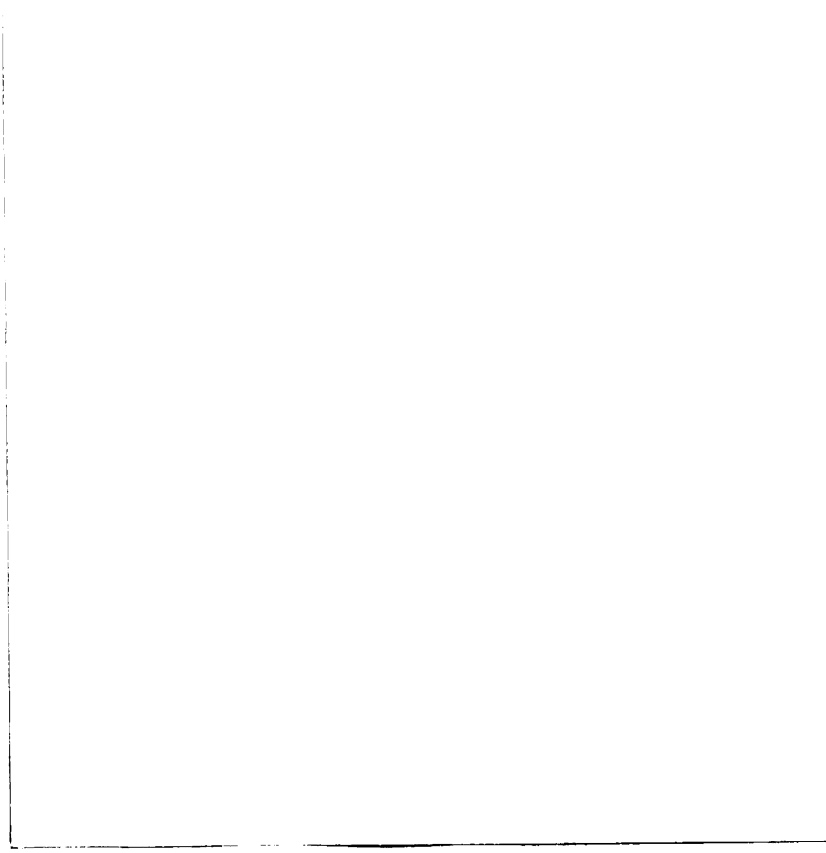
AGE-GRADE RETARDATION AMONG
MEXICAN-AMERICAN YOUTHS
IN MICHIGAN

Thesis for the Degree of M. A.
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ABSTRACT

AGE-GRADE RETARDATION AMONG MEXICAN-AMERICAN YOUTHS IN MICHIGAN

By

William Patrick Boss

This thesis deals with the measurement and analysis of the concept age-grade retardation among a sample of Mexican-American youths in the state of Michigan.

The data is a secondary analysis of data collected in November and December of 1967 and January 1968 for a study sponsored by the U.S. Department of Labor.

The results indicate that the Mexican-American children are relatively disadvantaged in terms of age-grade progress when compared to the population of Michigan from the 1960 census. The Mexican-American children are comparable to the Michigan non-white population of 1960 in terms of their retardation.

The remainder of the analysis attempts to explain the variation of age-grade retardation among the Mexican-American population. The independent variables which appear to explain the most variation in the dependent variable, age-grade retardation, are, (1) the head of household's educational attainment, (2) the head of household's income, (3) language spoken at home, (4) the migrant stream experience of the head of household, and, (5) how long the child has been in the Michigan school environment.

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YOUTHS IN MICHIGAN

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INTRODUCTION

Various studies have shown that Mexican-Americans have lower levels of educational attainment than other segments of the U.S. population. Julian Samora has suggested that the educational system in the United States is one of the major vehicles for social mobility, but that Mexican-Americans have not taken full advantage of this opportunity.¹ Our concern at present is to attempt to discover what factors cause some Mexican-Americans to progress through the educational system and what factors keep others at a relatively low or retarded level.

THE CONCEPT "AGE-GRADE RETARDATION"

The basic idea for the concept "age-grade retardation" is adopted from Bernert's America's Children:

The school experience of children and youth in the United States is basically one in which the pupil enters a school system in a certain minimum age level and from then on is expected to proceed within the system from grade to grade at a regular pace of achievement. It is generally accepted that the pupil is to spend one year in each grade, that in eight years he shall have progressed through eight grade levels, and by the end of a twelve-year period he shall have completed his elementary and high school training. But this is not always the result. Although the general pattern of achievement and experience may be one of yearly promotion to

1. Julian Samora and Richard A. Lamanna, "Mexican-American in a Midwest Metropolis: A Study of East Chicago", Mexican-American Study Project, Advance Report, 1967, University of California, Los Angeles, p. 51.

the next grade, there are pupils who move fast and "skip" grades, and there are pupils who are held back and have to repeat grades.

. . . Retardation is defined as a slowness of progress through school as a result of nonpromotion--a lagging behind from the expected pattern of progress through the school system.²

Samora's study of Mexican-Americans in East Chicago reports a high rate of age-grade retardation. He suggests that Mexican-American children are older than the modal age for each grade level, and that they, as a group, quickly fall behind their age peers in school.³ They are said to have difficulty in the system because of language problems, discrimination, and a vast number of other social and cultural problems. Not only is their final educational level lower, but also at each grade level they tend to fall further behind.

Normal progress is defined as progression from grade to grade for each year a child progresses in chronological age. If a child enters grade 1 at age 6, he is expected to enter grade 6 at age 11, grade 10 at age 15, etc. If age and year are plotted on a graph, our ideal is represented by a straight line. If a child falls below the line, then he is age-grade retarded; if he is above the line, he is educationally ahead of his age peers, i.e., accelerated. Thus, we may view age-grade retardation as performance which is not in line with the expected age and grade level.

The question then is what is the expected age and grade level? Bernert's census monograph suggests that, "pupils in specific age groups are not to be found in one grade, but usually spread out over two adjacent grades."⁴ Therefore an 8 year old is expected to be enrolled in

2. Eleanor H. Bernert, America's Children, New York: Wiley, 1958, p. 148.

3. Samora and Lamanna, op. cit., p. 65.

4. Bernert, op. cit., p. 149.

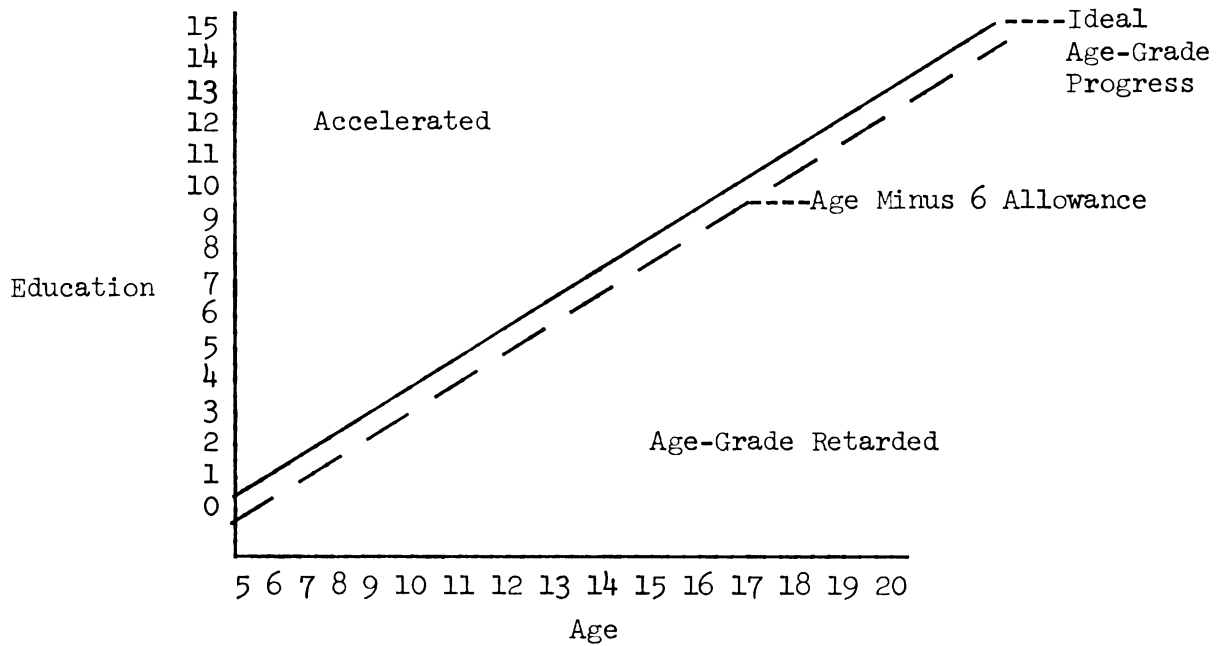


Figure 1. Graphic Representation of the Meaning of Age-Grade Retardation.

either the second or third grades; a 9 year old is expected to be in grades 3 and 4, etc. The formula then is age minus 6 years. If that number is greater than his grade level, he is retarded; and if that number is less or equal, then he is not retarded. For example, a 15 year old must be enrolled at least in the 9th grade ($\text{age } (15) - 6 = 9$) to be non-retarded. If, however, he is only enrolled in the 8th grade, then he is retarded.

DATA COLLECTION

The present paper is a secondary analysis of data collected during November and December, 1967, and January, 1968, for "Mexican-Americans in Transition, Migration and Employment in Michigan Cities" by Harvey M. Choldin and Grafton D. Trout, Jr.⁵

This research project used a sample of Mexican-American families in eight counties outside the Detroit SMSA. After the eight counties were selected, the Mexican-American households within them were identified and listed by contacting informed persons in various organizations and through the use of city directories and telephone books from which persons having Spanish surnames were listed. A pilot study indicated that the two main errors in the lists were the non-locatable addresses and names of non-Mexican-Americans. Names were then selected from these lists for interviews. The interviewing was performed by bilingual and biliterate Mexican-American residents of the counties under study after receiving interview training.

5. Sponsored by the U.S. Department of Labor, Office Manpower Research, Contract No. 81246632.

SOURCES OF BIAS IN OUR CONCEPT "AGE-GRADE RETARDATION"

We wish to compare retardation rates of our Mexican-American sample with those of other populations. Are these really comparable? The problem of what date a sample or census is taken arises. Census data are collected on April 1, while the sample data on Mexican-Americans used here was collected over a three-month period from November 1967 through January 1968, thus the census population was given from three to five months more time for its children to have birthdays and become one year older. This extra year of age could in many cases lead to classifying a student retarded. The problem is that our sample of Mexican-Americans was not allowed this three to five months to become older and in some instances to be therefore classified as age-grade retarded. It seems that approximately one-third to one-fourth more of those students in the lowest expected grade would be classified as age-grade retarded if the sample had been taken as of April 1. Thus, in an effort to make our survey data more comparable with U.S. census data, 25 percent of those students in the lowest accepted non-retarded grade were classified age-grade retarded. In other words, we are assuming that 25 percent of those students who are just one year above non-retarded status will have a birthday during this three to five month period and thereby become classifiable as retarded.

The measurement of age-grade retardation with this survey data on Mexican-Americans poses another problem. The interview included age and year completed in school for every child in every household; and not year enrolled in school. In order to make year completed equal to year enrolled, the definition must be changed to age minus 7 for our survey data.

A second source of bias is the comparison of populations at different time periods, i.e., 1960 population compared to a 1967 population. From 1950 to 1960 there was a decline in the rates of age-grade retardation.⁶ We probably can assume that the population of 1960 will be less retarded as of late 1967 or that a 1967 population would have been more retarded as of 1960. This form of bias is non-correctable. It also appears that our entire sample has an urban bias and it has been shown that urban retardation rates are lower than that for rural areas.⁷

To sum up, it seems that we are under-representing Mexican-American age-grade retardation rates by some factor. This must be kept in mind when we compare other populations with our Mexican-American sample. However, we have attempted to alleviate the major flaw in our measure and feel that the measurement, although not perfect, is very useful.

6. James D. Cowling, Age Grade School Progress of Farm and Non-Farm Youth: 1960, Economic Research Service, U.S. Department of Agriculture, Agriculture Economic Report No. 40.

7. Ibid.

COMPARISON OF RETARDATION RATES

Age-Grade Retardation as a "Risk" Variable.

Table 1 indicates that age is one of the most important factors in age-grade retardation. At younger ages, we find smaller proportions retarded and as age increases, especially in the teens, retardation rates start to expand at a rapid rate--doubling from group 11-13 to 14-16, and more than doubling from group 14-16 to 17-19. Retardation is clearly a "risk" conditioned variable since each additional year of school presents one more possibility of failure of promotion to the next grade. Therefore our analysis of associated variables will be done separately for each of the low age groups or "risk cohorts." We cannot say at this point if Mexican-Americans have high retardation rates unless we compare these rates to other populations.

Comparison of Michigan Total, Non-White and Sample Mexican-American Retardation.

Table 2 includes all people enrolled in school plus all those not enrolled between the ages of 14-19. The survey data for Mexican-Americans does not ask only about those enrolled, but asks about all people in the household, thus dropouts must be added to those enrolled in order to make the Michigan population comparable to our Mexican-American sample. By including dropouts, the rate of retardation is increased from 8.7 percent to 10.3 percent in the 14-16 age group, and from 15.5 percent to 24.5 percent in the 17-19 age group for the Michigan population. For the non-white population, retardation rates go up from 19.4 percent to 20.9 percent in the 14-16 age group, and 35.0 percent to 42.2 percent in the 17-19 age group. What this combination of data suggests is that retardation may be one of the prime causes of dropping out.

Table 1. Percent Age-Grade Retarded by Age.

Age	%	Retardation Adjusted % ⁸	Base N
8-10	8	10	(369)
11-13	8	10	(382)
14-16	16	20	(329)
17-19	37	41	(267)
Total Base N			(1347)

8. Both sets of retardation percents are given because both are significant. For purposes of comparisons we need a more refined measure, thus the adjusted figure. However, in cross-classification analysis we use the non-adjusted figures.

Table 2. Percent Age-Grade Retarded by Age and Ethnicity.

Age	Michigan Population		Non-White Michigan Population		Mexican- Americans	
	%	Base N	%	Base N	%	Base N
8-10	4	(484,042)	6	(50,990)	10	(369)
11-13	7	(459,704)	13	(42,676)	10	(382)
14-16	10	(361,488)	21	(32,832)	20	(329)
17-19	24	(320,990)	42	(26,773)	41	(367)
Total Base N		(1,626,224)		(153,271)		(1,347)

Source: United States Census of Population, 1960, Michigan, Detailed Characteristics. It is a combination of Table 101 - Year of School in Which Enrolled and, Table 102 - Years of School Completed by Persons 14 to 24 Years Old and Not Enrolled in School.

Mexican-Americans are relatively disadvantaged in terms of their age-grade progress--clearly more retarded than the Michigan population. There exists some similarity between Mexican-Americans and the non-white population, but Mexican-Americans are more retarded in the earliest years--lower in the 11-13 year old age group--and very similar to the non-white population in the older age groupings (see Figure 2 for a graphic illustration of this phenomena).

SEX AS A FACTOR IN "AGE-GRADE RETARDATION"

Is age-grade retardation a male phenomena? Bernert states that, "backwardness in age-grade school progress occurs to a considerably greater extent among males than among females."⁹ For all children 8-18 years old in the U.S. in 1960, the sex ratio is 103 males for every 100 females. The sex ratio for retardation is 149 males per 100 females.¹⁰

Table 3 shows that Mexican-American age-grade retardation is consistent with Bernert's finding regarding the total population. At each age group males are more retarded than females. The sex ratio for our sample is 99 males per 100 females. The retardation sex ratio is 250, 115, 135, and 118 for the respective age groupings; and 133 for the entire sample.

9. Bernert, op. cit., p. 71.

10. Ibid., p. 71.

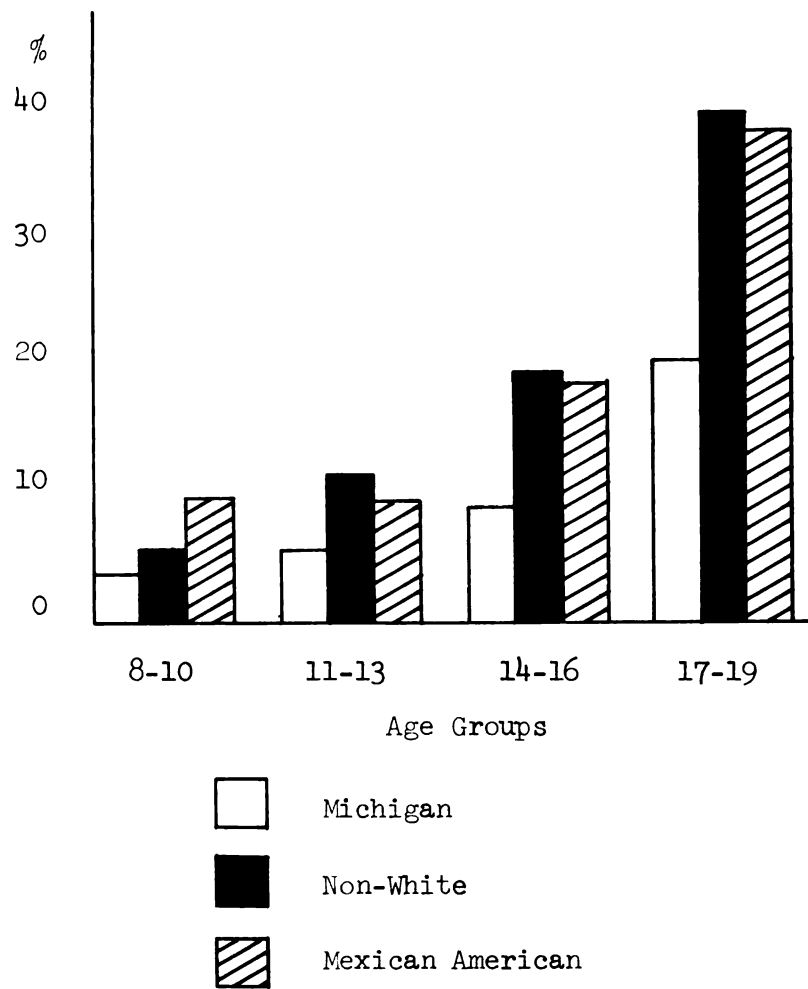


Figure 2. Percent Age-Grade Retarded by Age for Michigan Total, Non-White and Mexican American.

Table 3. Percent Age-Grade Retarded by Age and Sex.

Age	Sex			
	Male		Female	
	%	Base N	%	Base N
8-10	11	(187)	4	(189)
11-13	8	(191)	7	(196)
14-16	19	(162)	14	(170)
17-19	38	(138)	34	(131)
Total Base N ¹¹		(678)		(686)

11. The total sample size will vary on account of missing data for each independent variable used.

VARIABLES ASSOCIATED WITH "AGE-GRADE RETARDATION" AMONG
MEXICAN-AMERICANS

Age-grade retardation will be the dependent variable in the following analysis. The independent variables will be attributes of the heads of the household which may affect school performance. Since age is so strongly related to age-grade retardation, it will be held constant, as a control variable in all our cross-tabulations. Also, the explanation of age-grade retardation may be different for the different age groups, i.e., one variable may explain retardation for the older groups, but not the younger or vice versa. Thus the control for age is considered very important.

The results will be recorded according to the grouping of our independent variables into three classes of variables: (1) Family Characteristics, (2) Cultural Factors, and (3) Migration Variables.

(1) Family Characteristics.

To what extent does a favorable family setting aid a child's ability to "stay up" in school?

(a) Education of the Head of the Household. Does the education of the parents--in this case the head of the household--influence the school performance of their offspring? Do better educated heads have children who are less likely to be age-grade retarded?¹²

In general, the data indicated (Table 4) that better educated heads have children who are less retarded. Those heads with a high school education or greater--12+--have significantly less retardation among

12. Patricia Cayo Sexton, Education and Income, The Viking Press Inc., 1961.

Table 4. Percent Age-Grade Retarded by Age by Educational Level of Head of Household.

Age	Educational Level of Head									
	0		1-4		5-8		9-11		12+	
	%	Base N	%	Base N	%	Base N	%	Base N	%	Base N
8-10	3	(37)	12	(106)	5	(137)	10	(50)	5	(37)
11-13	2	(45)	10	(112)	11	(144)	4	(48)	0	(32)
14-16	25	(52)	24	(102)	12	(125)	7	(29)	0	(21)
17-19	35	(49)	40	(86)	37	(86)	38	(29)	24	(17)
Total Base N		(183)		(406)		(492)		(156)		(107)

their children than does any other group. A close inspection of Table 4 indicates that the relationship is not perfectly linear. The children of heads having no education appear to be doing quite well, especially at the younger ages--only 3 percent and 2 percent retarded at the 8-10 and 11-13 age groups. Joseph Kahl¹³ suggests that among working-class people there are those who feel they are "getting by" and put little pressure on their children to do well, while there are those who view themselves as partial failures because of a lack of education.

"Consequently they encourage their sons to take school seriously and to aim for college."¹⁴ Kahl's sample of workingmen's sons and our sample of Mexican-Americans may not be comparable, but the notion of pressure to succeed and educational failure of parents may be significant for both groups. Perhaps those heads with no education may apply more pressure for their children to do well than do the heads with low educational achievements (1-4 or 5-8). Similarly higher-educated heads will apply more pressure to do well.

When mother's education is examined, no significant relationship with age-grade retardation is found. However, those mothers with no education have children with lower retardation rates, especially in the younger age groups. The 8-10 year old group has only 3 percent retardation and the 11-13 group, 4 percent. This finding seems to give added confirmation to our notion that parents with no education are influencing their children, perhaps by negative example, to do well in school. This appears true especially among young children.

13. Joseph A. Kahl, "Educational and Occupational Aspirations of Common Man Boys", in Harvard Educational Review, Vol. 23, 1953, pp. 186-203.

14. Ibid., p. 194.

Kahl's work suggests that the mother is a crucial motivating force. The Mexican-American culture is predominantly paternal in orientation and only after a period of acculturation can we expect the mothers influence to play a more pervasive role.

(b) Family Income. Is family income related to educational achievement? Do Mexican-American children from higher income families have a lower rate of age-grade retardation? Our data answers both these questions affirmatively. Higher family income is strongly and inversely related to retardation.

Family income and head's education among our sample of Mexican-Americans is not highly inter-related. Both of these variables possess independent explanatory strength, and it is our contention that together the two variables have a cumulative or additive effect. Those families with high income and high education among their children will have less retardation than either high income or high education alone.

(c) Occupation and Socio-Economic Status. What effect does occupational prestige and/or socio-economic status have on a child's ability to "keep up"? Occupation and socio-economic status were used as two measures. Occupation is a very difficult variable to interpret, because the vast majority of Mexican-American heads of households fall into the blue collar categories. Thus an SEI index to measure socio-economic status was used with a range from 1-99. This was considered a better indicator, and the retardation rates were more easily interpretable.

Table 6 suggests that heads having higher SEI's have significantly less age-grade retardation among their children. It must be noted, however, that the SEI measure explains little variance in the retardation rates at the earlier years.

Table 5. Retardation by Age and Family Income.

Age	Family Income			
	Less than \$7,000		\$7,000 plus	
	%	Base N	%	Base N
8-10	12	(165)	4	(200)
11-13	12	(164)	5	(213)
14-16	24	(156)	9	(169)
17-19	45	(132)	30	(127)
Total Base N		(617)		(709)

Table 6. Percent Age-Grade Retarded by Age by SEI.

Age	SEI							
	Lower Low (1-10)		Middle Low (11-20)		Upper Low (21-30)		Low Middle to Upper (31+)	
	%	Base N	%	Base N	%	Base N	%	Base N
8-10	11	(57)	8	(96)	7	(128)	7	(59)
11-13	9	(45)	8	(111)	9	(139)	4	(57)
14-16	22	(46)	21	(85)	11	(105)	10	(52)
17-19	47	(38)	43	(61)	35	(94)	22	(37)
Total Base N		(186)		(353)		(466)		(205)

When we controlled for family income, head of household's education, recency of arrival in Michigan, and number of years in the migrant stream; SEI's ability to predict retardation remained. Thus, we have some confidence that the socio-economic status, or more simply the occupation, of the head influences their children's ability to "keep up" in school.

(d) Family Size. Do larger families have greater retardation rates? We wished to explore the relationship between family size and retardation in order to give some empirical confirmation to the relationship between family size and age-grade retardation.

Our data does not give us any clear answers. There exists neither a linear relationship between family size and retardation, nor any easily interpretable relationship at all. The only indication from our data is that children from families of 3 and 4 seem to be slightly less retarded than other family size groups (0-2, 5-6, and 7+). We view family size as a weak predictor variable.

(e) Educational Aspirations. Do children whose heads aspire to a college education have less retardation than those children whose heads aspire less than a college education? First of all, it is important to point out that among our heads of households almost 90 percent indicate a desire for their sons to go to college. Mexican-Americans, like other Americans, say they desire their children to go a long way in the educational system. This may simply be an expression of an American society norm, i.e., universal higher education. Retardation rates of children among college-aspirant heads and non-college aspirants, show little significant differences. Aspirations as measured in this survey appear to be meaningless as a predictor of retardation.

Although a child's retardation level does not appear to be related to the educational aspiration of his parents, this finding does appear significant. It is significant in that there exists a real gap between reality and aspirations. The educational system is failing to educate Mexican-American children when their parents desire this education. The failure of the school and of their children thus becomes a major area of concern for Mexican-American parents.

(2) Cultural Factors.

To what extent is the retention of Mexican or Mexican-American subcultural traits by the parents detrimental to a child's age-grade progress? Is the desire for assimilation toward the "American Style" helpful in a child's ability to keep up to his age-grade peers?

(a) Language Spoken At Home. If a different language is spoken in the home from that which is used in school, it seems that this might be a detrimental factor in a child's ability to perform in English in school. Thus, English-speaking in the home should yield lower rates of retardation, while Spanish-speaking may handicap a child's ability to progress in the educational system. What about bi-lingualism in the home? Are children of parents who speak both Spanish and English intermediate in rates of age-grade retardation?

In our survey, three questions concerning language at home were asked of the head: (1) What language did you speak with your parents when you were a child? (2) What language do you usually speak with other adult members of your family here at home? (3) And what language do you usually speak with your children here at home? In an attempt to discover what language is spoken in the home at present and how this will affect retardation, we excluded the question concerning language

spoken by the head with his parents when he was a child. If we used only the question concerning language used with children, we were afraid that we might be masking some forms of bi-lingual behavior. In some cases subjects might well speak English to their children, but might speak Spanish or a combination of the two to other adults. An analysis of both of these questions will tend to give us more meaningful answers.

The data indicates (Tables 7 and 8) that those heads who speak only Spanish have children who have higher rates of retardation. Also, English or a combination of both languages are superior to only Spanish. Finally, the differences between English and a combination of the two are neither great nor consistent. The first two conclusions are expected, i.e., speaking mostly Spanish by the head leads to higher retardation by his children, while speaking mostly English or a combination leads to lower retardation. The third, however, is intriguing and worth looking at for a moment.

When we view language used with other adults, we see that speaking both is equal to if not better than English for the age group 8-16, and only in the 17-19 age group does English show a significant margin over use of both. When we look at language spoken with children, the same pattern emerges. "It is virtually impossible to avoid the conclusion that children should be started off in their formal education in their mother tongue . . . the evidence is overwhelming that the home-language should be the springboard for the proper development of the second language."¹⁵ Young Mexican-American children raised in a Spanish-speaking

15. George I. Sanchez, "History, Culture, and Education," in Julian Samora (ed.), La Raza: Forgotten Americans, University of Notre Dame Press, 1966, pp. 19-20.

Table 7. Percent Age-Grade Retarded by Age and Language Spoken Among Adults.

Age	Spanish		Both		English	
	%	Base N	%	Base N	%	Base N
8-10	12	(156)	6	(124)	3	(89)
11-13	11	(158)	4	(130)	8	(89)
14-16	24	(142)	10	(125)	11	(62)
17-19	45	(137)	33	(84)	20	(46)
Total		Base N (593)		(463)		(286)

Table 8. Percent Age-Grade Retarded by Age and Language Spoken With Children.

Age	Spanish		Both		English	
	%	Base N	%	Base N	%	Base N
8-10	6	(80)	10	(124)	6	(164)
11-13	9	(67)	7	(151)	9	(164)
14-16	28	(75)	12	(131)	15	(123)
17-19	38	(85)	44	(97)	25	(81)
Total Base N		(307)		(503)		(532)

home need time before they can read adequately and gain the verbal skills required to use the newly required language.

When language spoken with other adults was controlled by other relevant variables, it retained its explanatory strength. However, some interesting points emerge. It appears to be very important for the most recent arrivals (1960's) to speak English or their children will be at a great disadvantage. It also seems that head of household's education and language have a cumulative effect, but the cell sizes are small and this conclusion is tentative.

In an attempt to probe deeper in the question of language, we explored whether it was more advantageous for one's children if the head had learned English before coming to Michigan, or after his arrival. Our data indicates that it makes no difference at all where the head learned his English.

(b) Assimilation Preference. We constructed a variable to indicate attitudinal preferences for group homogeneity among our Mexican-American sample. The variable, assimilation preference, is an inverse measure of cosmopolitanism, i.e., those who are low on assimilation preference are high on cosmopolitanism, while those high on assimilation preference are more ethnocentric in orientation. In an attempt to differentiate between a preference for in-group and out-group interaction, respondents were asked to rate their preferences regarding the following ten items:

- 1) Have mostly Mexican-American friends.
- 2) Have your children play mainly with other Mexican-American children.
- 3) Have a Mexican-American as a next door neighbor.
- 4) Have a majority of Mexican-Americans in your (neighborhood) (farm area).

- 5) Have a majority of Mexican-American children in your children's schools.
- 6) Have a church where most of the members are Mexican-American.
- 7) Have a majority of Mexican-Americans in any organization of which you are a member.
- 8) Have a separate political organization for Mexican-Americans.
- 9) Have your children only date Mexican-Americans.
- 10) Have your children marry only Mexican-Americans.

On each of the items, the response was a preference score from 1 to 7. A score of 7 indicates the strongest preference, while a score of 1 indicates the strongest opposition. The respondents were assigned a score on this variable by an addition of his scores for all ten items. Thus the range of scores is from 10 (all 1's) to 70 (all 7's).

The distribution of actual scores indicates a high proportion in the middle range (40-49). This seems to be the typical response set. Thus, for analysis we divided assimilation preference into three dimensions: high (a score of 50 or greater), medium (a score of 40-49), and low (a score of less than 40).

Are those who are more favorable to separate Mexican social interaction more likely to experience age-grade retardation among their offspring?

Our data suggests they are. By reading across Table 9, we see that the relationship is linear. Those heads low in preference for Mexican exclusivity have children with retardation rates which are lowest for each age group. Those who are high have the highest retardation rates for each age group, with the medium group in between as expected.

Table 9. Percent Age-Grade Retarded by Age by Assimilation Preference.

Age	Assimilation Preference					
	High		Medium		Low	
	%	Base N	%	Base N	%	Base N
8-10	7	(122)	7	(172)	4	(57)
11-13	9	(133)	8	(173)	5	(61)
14-16	21	(133)	16	(134)	9	(47)
17-19	42	(95)	36	(122)	24	(37)
Total Base N		(483)		(601)		(202)

Is this a spurious relationship? When we control for language spoken with other adults, some interesting results emerge (Table 10).

When Spanish is the language spoken with other adults, we notice that assimilation preference still shows some relationship to age-grade retardation. However, when English becomes the spoken language, in combination or alone, we see that the relationship reverses. If one views the bi-lingual group (probably the best group to view because the cell sizes are larger and more meaningful) it is seemed that from the medium to the high assimilation preference groups there is a drop in retardation percents at every age group instead of an increase which existed in the cross-tabulation of assimilation preference by retardation.

When family income is used as a control, we see again the same general pattern. For low family income, assimilation preference seems to hold up, but in the high family income group, the relationship vanishes and seems to reverse itself.

We do not view assimilation preference as an independent explanatory variable. It acts as a conditional or intervening variable, while family income and language are the more powerful explanatory variables.

As a next step we wished to see if composition of the community would have an effect on our dependent variable. Ethnic density, i.e., whether the neighborhood is Mexican-American, Anglo, or Negro, was one variable; and number of Mexican-Americans on the block was another variable. The data indicates that there exists no relationship between these variables and age-grade retardation.

Table 10. Percent Age-Grade Retarded by Age by Assimilation Preference Controlled for Language Spoken by Head with Other Adults.

Age	Spanish										<u>Language</u> Both										English									
	Assimilation Preference					Assimilation Preference					Assimilation Preference					Assimilation Preference					Assimilation Preference					Assimilation Preference				
	Low	Base	%	N	High	Low	Base	%	N	High	Low	Base	%	N	High	Low	Base	%	N	High	Low	Base	%	N	High	Low	Base	%	N	High
8-10	0	(12)	11	(71)	15	(76)	0	(24)	7	(57)	6	(47)	9	(22)	0	(47)	5	(21)												
11-13	7	(15)	15	(68)	9	(76)	6	(17)	4	(74)	2	(48)	3	(29)	3	(34)	19	(26)												
14-16	0	(12)	21	(52)	29	(79)	0	(14)	13	(63)	10	(50)	19	(21)	9	(22)	5	(19)												
17-19	50	(10)	39	(62)	49	(66)	22	(9)	36	(45)	32	(31)	11	(18)	27	(15)	23	(13)												
Total																														
Base N	(49)	(253)		(102)			(64)	(239)	(176)				(90)	(118)	(79)															

(3) Migration Variables.

(a) Number of Moves. What happens to children who have parents who move a great deal? Do these children have higher retardation rates or lower? We have three variables to see if movers have more retardation among their children than do non-movers. It is assumed that those children who have parents who are moving a great deal will be readjusting to different school systems and may well be put back for a number of reasons upon reaching a new school system. The three variables we used are: (1) Number of moves in lifetime, (2) Number of moves in Texas, and (3) Number of moves in Michigan. It appears that these variables have no effect on the retardation rates of the children. Retardation does not seem to be determined by how much a child's parents move.

(b) Birth Place and Place of Early Residence of Head. Does birth place of the head or where the head lived longest until he was 16 years of age effect a child's retardation rates? The distinction seems more useful than the use of one indicator that, among a population which moves a great deal, many times birth place and residence until a certain age may have a low correlation.

We suspected that the heads having a Michigan birth place or being raised in Michigan would be more advantageous in terms of age-grade progress than would either Texas or Mexico. Whether Texas or Mexico as a birth place, or a place lived longest until 16, was more advantageous was left open.

The data indicates that those heads born in Texas or who lived in Texas until 16 years of age have a considerably higher retardation rate among their children than do heads born and/or raised in either Michigan

or Mexico. Michigan and Mexican-born and raised heads seem to have similar retardation rates among their children. The only firm conclusion that we draw is that for a child's head of household to be born or raised in Texas increases his probability of being age-grade retarded.

(c) Recency of Arrival. Does the time exposed to modern, industrial living experienced in Michigan reduce the retardation rates of children? If people have just arrived in Michigan, will they carry values and beliefs which will be detrimental to their children's school performance?

Table 11 indicates that the number of years a head is exposed to the Michigan environment affects the age-grade performance of his offspring. Those with the lowest amount of exposure (1960-1967 group) have clearly the highest retardation rates. It should be noted that recency of arrival explains a great deal of the variation for the younger age groups. That is, recency of arrival is very important in determining how a young child will keep pace with his peers.

When we control for other relevant factors (family income, head's education, and number of years in the migrant stream) recency remains an important factor. Again, when income and number of years in the migrant stream are combined with recency, we get a cumulative effect. Late arrival and low income result in higher retardation together than either one suggests alone, as does experience in the migrant stream and late arrival.

(d) Number of Years in the Migrant Stream. Approximately 50 percent of our sample of Mexican-American heads of household did not participate in migrant labor activities. Do Mexican-Americans who were part of the migrant stream have greater age-grade retardation among their children than do those who were non-migrant workers? The impression

Table 11. Percent Age-Grade Retarded by Age by Year of Arrival In Michigan of Head of Household.

Age	Year of Arrival of Head of Household in Michigan					
	1900-1939		1941-1960		1961-1967	
	%	Base N	%	Base N	%	Base N
8-10	0	(21)	5	(233)	23	(57)
11-13	4	(26)	7	(263)	15	(47)
14-16	18	(28)	12	(222)	39	(44)
17-19	10	(42)	30	(165)	55	(38)
Total Base N		(117)		(883)		(186)

is that children of migrant workers are sporadic attenders of school and would tend to be behind upon settling out of the migrant stream. Now that these former migrant workers are more permanent in their residence and employment, how are their children doing in school?

Concerning migrant agricultural families, Paul Blackwood states, "The tradition of going to school is not strong among them, nor is the expectation strong in many communities that these children should go to school."¹⁶ It appears clear that attendance and retardation should be highly related. Those children who have poor attendance records are those most likely to be held back. Any experience which develops a tradition on non-school attendance seems most detrimental to a child's ability to progress through school at the expected rate. The number of years in the migrant stream will be associated with the tradition of non-school attendance. The higher the number of years as a migrant worker, the greater will be this non-school attendance tradition. It should be noted that, regardless of the attendance question, we would hypothesize that the experience of heads in migrant work situations is not conducive to their children's progress in school.

Table 12 indicates that the lack of migratory experience by the head of household is clearly advantageous for their child's school progress. It also appears that the longer the head is in the migrant stream, the higher becomes his children's retardation rate, to a point of saturation around ten years. For purposes of clarity, let us view the differences between no migratory labor experience and some.

16. Paul E. Blackwood, "Migrants in Our Schools," in Bernard N. Meltzer, Harry R. Doby, and Philip M. Smith, Education in Society: Readings, Thomas Y. Crowell Co., New York, 1958, p. 492.

Table 12. Percent Age-Grade Retarded by Age by Number of Years in the Migrant Stream.

Age	Years in Stream							
	0	1-4	5-9	10+				
	%	Base N	%	Base N	%	Base N	%	Base N
8-10	4	(189)	6	(80)	12	(42)	17	(58)
11-13	5	(196)	9	(91)	8	(39)	16	(56)
14-16	8	(172)	20	(71)	39	(33)	27	(53)
17-19	30	(130)	37	(52)	52	(27)	45	(58)
Total Base N		(687)		(294)		(141)		(225)

The differences of retardation rates of children who have heads with no migratory experience is most significant (Table 13). The differences are large at the younger ages and are greater at the older ages. Our data does not allow us to check attendance rates, but it would be of interest to see if attendance rates of children are correlated with the head's migratory experiences. Again note that the number of years in the migrant stream is a good predictor at the younger ages.

We view experience in the migrant stream as a predictor of retardation. After controls are made, migrant stream experience retains its strength as a predictor variable.

Table 13. Percent Age-Grade Retarded by Age by Years in the Migrant Stream.

Age	Years In Stream			
	None		Some	
	%	Base N	%	Base N
8-10	4	(189)	11	(180)
11-13	5	(196)	11	(186)
14-16	8	(172)	26	(157)
17-19	30	(130)	43	(137)
Total Base N		(687)		(660)

SUMMARY

Mexican-American youth are relatively disadvantageous in terms of age-grade retardation. In this respect, they are somewhat similar to non-white Michigan residents.

In attempting to explain why some Mexican-American children are more or less retarded, we conclude that there are a number of causes or determinants of retardation and that this phenomena is only explained by a combination of factors and that some of these factors are more important at different age groups.

FAMILY CHARACTERISTICS

It appears that income, SEI and head of household's education are important variables. It is true that these three are interrelated, but we believe that each is an independent predictor to some degree. Our data shows that age-grade retardation is disproportionately a male phenomena as reported in other populations. Mother's education, head of household's educational aspirations, and family size appear to be poor predictors. However, none of the family characteristic variables explain retardation at the younger ages very convincingly.

CULTURAL VARIABLES

The number of Mexican-American families on the block, and ethnic density proved of little importance. Language spoken by the head with other adults was a powerful explanatory variable. Assimilation preference

appears to be an intervening factor which helps explain retardation when family income is low and the language spoken with other adults is Spanish. We do not find it to have unconditional explanatory strength.

MIGRATION VARIABLES

Number of moves in lifetime, number of moves in Michigan and in Texas were not associated with age-grade retardation. Birth place of head and where one lived before age 16 (where one was socialized) indicated that Texas is the environment most conducive to age-grade retardation. Recency of arrival in Michigan and number of years in migrant stream were powerful variables, and of all the independent variables these two were the most powerful predictors of retardation at the younger age groupings.

From this list of explanatory variables we can suggest two types of Mexican-American children; namely the age-grade retard and the non-retard child.

Table 14. Summary of Characteristics Typical of Age-Grade Retarded and Non-Retarded Children.

	Retarded Mexican-American Child	Non-Retarded Mexican-American Child
Sex	Male	Female
Age	17-19	8-10
Family Income	Low (< \$7,000)	High (> \$7,000)
Socio-Economic Index	Low (1-20)	High (21+)
Language Spoken by Head with Other Adults	Spanish	Bi-lingual or English
Recency of Arrival	Late arrival (1960's)	Early arrival (Before 1940)
Head of Household's Education	1-4 years (not 0)	High school graduate
Number of Years in the Migrant Stream	5 or more years	No migrant stream experience

CONCLUSION

A multi-variate analysis was performed in order to determine which of our variables produced the greatest amount of explanatory power. The results from this analysis confirmed the results obtained from cross-tabulation and the use of partials or controls. Age, income, language, stream year experience, recency, and head of household's education were factors which emerged from this analysis. This form of electronic analysis gave confirmation to our extensive manual searching approach in the analysis of age-grade retardation.

The one issue we feel most uncomfortable with at this time is the comparability of our data. We have manipulated data for other purposes to fit our needs. Some of the techniques used were most interesting, but for purposes of explanation we would hope to gather data directly related to the problem of age-grade retardation; and not the use of secondary data.

The next step in exploring this area might be (1) gather data directly related to age-grade retardation, (2) attempt to discover the relationship of age-grade retardation to other phenomena e.g. dropping out, and (3) examine over time what happens to those children who have fallen behind in school. What kind of jobs do they get and what happens to the education of their children.

Although this paper has been aimed at the explanation of age-grade retardation among a sample of Mexican-Americans, we feel that our real

task has been to raise a number of hypotheses which need further empirical confirmation. Let us hope that other populations are compared to the Mexican-American sample used in this paper, in order to arrive at a more convincing level of explanation of the phenomena of age-grade retardation.

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