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AUTHOR	Spolsky, Bernard
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ABSTRACT

One of the central questions in the study of bilingualism is the degree to which it is possible for a group to maintain their language even when accepting other cultural values. There are numbers of cases of peoples who have managed to develop a modern industrial society without giving up their national language; this is difficult, but possible. A necessary concomitant of such a result is a highly developed sense of national identity, and a movement supporting the national language as a symbol of that identity. Whether this will develop with the Navajos remains to be seen. The present survey was carried out in order to provide a picture of the present status of the Navajo language, to serve as a baseline for later studies of any change, and to permit some degree of prediction of the direction and speed of language loss. Results of data gathered on the language of six-year-old children permitted the following generalizations: (1) Overall, 73% of the children in the study come to school not speaking enough English to do first grade work; (2) the farther a school is from an off-reservation town, the more likely its pupils are to speak Navajo; (3) the farther children live away from a school, the more likely they are to speak Navajo at home; and (4) language is maintained for some time even when other traditional features of life are given up. (Author/AMM)

NAVAJO READING STUDY

The University of New Mexico

Progress Report No. 6

NAVAJO LANGUAGE MAINTENANCE: SIX-YEAR-OLDS in 1969

Bernard Spolsky

March, 1970

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Introduction

Funded by the Bureau of Indian Affairs in summer, 1969, the Navajo Reading Study was well under way by the time the President endorsed the Commissioner of Education's call for a national campaign in reading. It is concerned with the Navajo right to read, studying the feasibility and effect of teaching Navajo children to read their own language first.

The language census reported here was undertaken to ascertain the extent to which Navajo children still speak their own language, a logical preliminary to planning for Navajo education. Many opinions were offered, but there were no hard data before this study.

We should like to thank the 171 teachers without whose cooperation this survey would have been impossible, and the administrators who assisted in distributing and collecting the questionnaires. Especial acknowledgement must be made for the early encouragement we received from Mr. Abraham Tucker of the BIA, Window Rock, and Mrs. Gloria Carnal of Gallup-McKinley Schools; their agreement to distribute and collect questionnaires in their respective systems made our task much lighter.

Various members of the NRS staff helped with the collection and analysis of the data. Wayne Holm was particularly involved in planning the questionnaire and establishing the

accessibility measure; most of the statistical work was carried out by Paul Murphy.

Bernard Spolsky, Director
Navajo Reading Study

March, 1970

While the general question of the status of American Indian languages is often discussed, there are few statistics available to support claims of loss or retention. Fishman (1966) does not treat the topic except to refer to Chafe (1962) as the source of the estimate that only 40% of the 300 languages or dialects extant have more than 100 speakers, and that more than half of these have speakers of very advanced ages. Kinkade (1970) gives data on the language spoken at Haskell Institute in 1969. These figures could be compared with those published by Stuart (1962) on the same school a number of years earlier. But, as Kinkade points out, the data are not strictly comparable, nor do they form a basis for reasonable hypotheses about language retention or currency. The key difficulty is the nature of the sample: Indian children who have spoken their own language at home are much less likely to reach Haskell than those who speak English at home. A language census based only on older people is contaminated by the fact that school is always a factor in the acquisition of English and the loss of the native language. Even an exceptional school like Rough Rock Demonstration School, with its acceptance of the principle of teaching in Navajo still uses English as the medium of instruction after the first year or two.

One way around this problem is to look at the language used by six-year-old children at the time when they first come to school. Whatever other measures of language maintenance may be established, the most important is surely the parent's choice of language to speak to their children. Thus, while parents with strong ethnic or national or religious ties may choose to have their children learn an ethnic language in school or church, the fact that they themselves speak English to them at home is clearly the best guide to their basic attitude. When one finds, for instance, a pueblo expressing interest in having its language taught in Head Start programs or elementary school, one is tempted to see this as evidence of a strong desire to maintain the language; but in fact it reflects the situation that English is now a first language for their children. Official tribal policy is language maintenance, but the actual home policy is to switch to English.

This survey was carried out in order to provide a picture of the present status of the Navajo language, to serve as a baseline for later studies of any change, and to permit some degree of prediction of the direction and speed of language loss. The size of the Navajo nation and the fact that it is settled in a reasonably self-contained area means that maintenance is much more practical for Navajo than for the hundreds of smaller tribal groups that have lost or are losing

their language; nevertheless, there is a steady increase in the amount of English spoken on and off the reservation, and a related percentage decrease in knowledge of Navajo. (But, of all Indian languages, there has been an absolute increase in speakers.)

The general method adopted in our study has been to prepare a simple questionnaire that has been completed by teachers in schools on or near the reservation. The data gathered on the language of six-year-old children were then correlated with two measures of acculturation: the type of school, and the distance from the nearest off-reservation town. The results permit the following generalizations:

1. Overall, 73% of Navajo six-year-olds in the study come to school not speaking enough English to do first grade work.
2. The farther a school is from an off-reservation town, the more likely its pupils are to speak Navajo.
3. The farther children live away from a school, the more likely they are to speak Navajo at home.
4. Language is maintained for some time even when other traditional features of life are given up.

The questionnaire sent out to teachers asked them to describe the language capabilities of each of their six-year-old Navajo pupils at the time of starting school.

Teachers were advised to ask help from other staff members if they needed it; this was to encourage them to ask Navajo aides about the students' knowledge of Navajo. They were asked to place each child on a five-point scale:

N : When the child first came to school, he or she appeared to know only Navajo, and no English.

N-e : When the child first came to school, he or she appeared to know mainly Navajo; he or she knew a little English, but not enough to do first grade work.

N-E : When the child came to school, he or she was equally proficient in English and Navajo.

n-E : When the child came to school, he or she knew mainly English and also knew a bit of Navajo.

E : When the child came to school, he or she knew only English.

In case they were uncertain, teachers were asked to use a question mark rather than a check mark in the appropriate column; only 12 out of 171 used the question mark.

The questionnaire was distributed by the Bureau of Indian Affairs Area Office in Window Rock to all BIA schools on the reservation; completed forms were received from all but 5 of the 69 schools. It was also distributed to all

schools in the Gallup-McKinley County school district, and to a number of other public school districts. (The Gallup-McKinley School Board also sent a modified form of the questionnaire to the public schools at Zuni. Returns from these placed 101 out of 110 children in a Z-e column: Children who speak mainly Zuni, know a few words of English, but not enough for first grade work.)

Complete raw scores and percentage scores for each school were collected (Table I); we also calculated an index for each school of the degree of Navajo use by its six-year-olds. This index was calculated by assigning a value to each column (N = 5, N-e = 4, N-E = 3, n-E = 2, E = 1), and finding the average for the pupils in the school. A second index, the total of the percentages in the first two columns, was also calculated; this gave some estimate of the percentage of children considered by their teachers not to know enough English to do first grade work. The next measure determined was a figure to represent the relative accessibility of the school itself to the nearest comparatively large off-reservation town; towns used were Gallup, Farmington, Flagstaff, Winslow, Holbrook, and Cortez. The accessibility index was calculated as follows. Using a good up-to-date road map (Map No. 2345, "Indian Country", published by the Automobile Club of Southern California), we took distances on improved paved roads at face

TABLE I

SCHOOLS	N	N-e	N-E	n-E	E
BUREAU OF INDIAN AFFAIRS:					
Chinle Agency:					
Chinle	22 (79%)	6 (21%)	0	0	
Low Mountain	12 (32%)	18 (49%)	5 (14%)	1 (3%)	1 (3%)
Lukachukai	26 (44%)	23 (39%)	10 (17%)	0	0
Many Farms	16 (67%)	0	8 (33%)	0	0
Nazlini	18 (82%)	3 (14%)	1 (5%)	0	0
Pinon	52 (75%)	16 (23%)	0	0	1 (1%)
Rock Point	19 (43%)	24 (55%)	1 (2%)	0	0
Cottonwood Day	9 (22%)	30 (73%)	2 (5%)	0	0
Eastern Navajo Agency:					
Baca	2 (33%)	4 (67%)	0	0	0
Cheechilgeetho	7 (24%)	18 (62%)	1 (3%)	3 (10%)	0
Crownpoint	7 (27%)	17 (65%)	2 (8%)	0	0
Lake Valley	14 (100%)	0	0	0	0
Mariano Lake					
Pueblo Pintado	14 (38%)	15 (41%)	5 (14%)	3 (8%)	0
Standing Rock	5 (33%)	10 (67%)	0	0	0
Thoreau	7 (37%)	11 (58%)	1 (5%)	0	0
Torreon	15 (75%)	5 (25%)	0	0	0
Whitehorse	1 (7%)	14 (93%)	0	0	0
Ft. Wingate	18 (75%)	6 (25%)	0	0	0
Borrego Pass	9 (82%)	2 (18%)	0	0	0
Bread Springs					
Jones Ranch	5 (46%)	5 (46%)	1 (9%)	0	0
Ojo Encino	5 (33%)	8 (53%)	1 (7%)	1 (7%)	0
Ft. Defiance Agency:					
Chuska	10 (21%)	18 (38%)	18 (38%)	1 (2%)	0
Crystal	3 (16%)	13 (68%)	2 (11%)	0	1 (5%)
Dilcon	26 (43%)	22 (36%)	10 (16%)	0	3 (5%)
Greasewood	0	5 (63%)	3 (38%)	0	0
Hunter's Point	28 (58%)	17 (35%)	3 (6%)	0	0
Kinlichee	15 (52%)	13 (45%)	0	1 (3%)	0
Pine Springs	2 (12%)	6 (35%)	9 (53%)	0	0
Seba Dalkai	0	24 (83%)	3 (11%)	2 (7%)	0
Tohatchi	0	4 (67%)	2 (33%)	0	0
Toyei	28 (51%)	26 (47%)	1 (2%)	0	0
Wide Ruins	15 (52%)	4 (14%)	9 (31%)	0	1 (3%)
Shiprock Agency:					
Aneth	13 (34%)	25 (66%)	0	0	0
Nenahnezad	17 (30%)	12 (35%)	5 (15%)	0	0

TABLE I

Red Rock	11	(44%)	14	(56%)	0		0		0	
Sanostee	13	(27%)	25	(52%)	10	(21%)	0		0	
Shiprock	10	(38%)	15	(58%)	0		1	(4%)	0	
Teecnospos	26	(33%)	42	(54%)	4	(5%)	4	(5%)	2	(3%)
Toadlena	4	(9%)	18	(40%)	11	(24%)	10	(22%)	2	(4%)
Beclabito Day	0		1	(50%)	1	(50%)	0		0	
Cove Day	14	(82%)	3	(18%)	0		0		0	
Tuba City Agency:										
Dennehotso	13	(35%)	22	(59%)	2	(5%)	0		0	
Kaibeto (Upper)										
Kaibeto (Lower)										
Kayenta	54	(73%)	20	(27%)	0		0		0	
Leupp										
Navajo Mountain	24	(77%)	3	(10%)	1	(3%)	2	(6%)	1	(3%)
Rocky Ridge	30	(79%)	8	(21%)	0		0		0	
Shonto										
Tuba City	55	(53%)	46	(45%)	2	(2%)	0		0	
Red Lake Day										
PUBLIC SCHOOLS:										
Gallup-McKinley - Urban:										
A. Roat	2	(5%)	20	(49%)	5	(12%)	7	(17%)	7	(17%)
Indian Hills	1	(8%)	5	(42%)	4	(33%)	0		2	(17%)
Jefferson	4	(36%)	1	(9%)	2	(18%)	1	(9%)	3	(27%)
Lincoln	0		2	(15%)	2	(15%)	5	(39%)	4	(31%)
Red Rock	3	(12%)	15	(63%)	4	(17%)	1	(4%)	1	(4%)
Roosevelt	0		1	(13%)	2	(25%)	1	(13%)	4	(50%)
Sky City	0		1	(100%)	0		0		0	
Sunnyside	0		1	(11%)	3	(33%)	3	(33%)	2	(22%)
Washington	5	(11%)	6	(13%)	9	(20%)	6	(13%)	19	(42%)
Gallup-McKinley - Rural:										
Church Rock	19	(25%)	29	(39%)	16	(21%)	6	(8%)	5	(7%)
Crownpoint	15	(11%)	40	(30%)	63	(48%)	5	(4%)	9	(7%)
Navajo	10	(15%)	26	(39%)	21	(32%)	9	(14%)	0	
Ramah	6	(19%)	19	(58%)	6	(19%)	1	(3%)	0	
Thoreau	24	(35%)	40	(58%)	5	(7%)	0		0	
Tohatchi	30	(35%)	26	(31%)	19	(22%)	5	(6%)	5	(6%)
Tse Bonito	0		10	(100%)	0		0		0	

TABLE I

PUBLIC SCHOOLS:

Kayenta:					
Kayenta	21 (25%)	32 (39%)	17 (21%)	8 (10%)	5 (6%)
Ganado:					
Ganado	21 (28%)	46 (62%)	6 (8%)	1 (1%)	0
Central:					
Naschitti	3 (7%)	11 (24%)	29 (64%)	1 (2%)	1 (2%)
Mesa	16 (14%)	44 (39%)	39 (35%)	7 (6%)	7 (6%)
Wilson	15 (23%)	19 (30%)	20 (31%)	8 (13%)	2 (3%)
Valley	1 (2%)	31 (46%)	16 (24%)	10 (15%)	9 (13%)
Newcomb					
Chinle:					
Many Farms	13 (30%)	17 (40%)	3 (7%)	2 (5%)	8 (8%)
Chinle	18 (15%)	59 (50%)	21 (18%)	11 (9%)	10 (8%)
Round Rock	3 (19%)	8 (50%)	2 (13%)	3 (19%)	0
Window Rock:					
Ft. Defiance	15 (20%)	18 (23%)	17 (22%)	20 (26%)	7 (9%)
Window Rock	4 (8%)	11 (22%)	8 (16%)	14 (29%)	12 (25%)

value; multiplied by two distances on gravel roads; multiplied by three distances on graded dirt roads; and multiplied by four distances on ungraded dirt roads. Thus, an accessibility index of 80 could mean 80 miles on paved road; or 20 miles on graded dirt road and another 20 miles on paved road; and so on. Anyone who has tried to travel on reservation roads in wet weather will appreciate the reasoning here. The two indices of amount of Navajo and the index of accessibility were correlated. (Table II)

Results.

Table I lists all the schools from which returns were received, and shows the number and percentage of children assigned to each category. It will be noted that we have data on a total of 2893 six-year-olds. Of these, 943 or 33% were reported to know Navajo only, and 1188 or 41% were reported to know Navajo mainly, with some English but not enough to do first grade work. It would be valuable to know more about the background of these two categories. One reasonable assumption is that many of the children placed in the column N-e get there because they have been to a pre-school program of some kind: a Headstart or a kindergarten program of the sort that is starting to be established on the reservation. These pre-school programs are often taught by Navajo-speaking teachers, and have Navajo aides, but a

start is always made on teaching English. Thus, N-e could reflect either a community where there is some contact with English, and some English spoken around the children, or, more generally, a school with a pre-school program.

The middle category, N-E, is of course the most unsatisfactory. There are at present no simple instruments to determine language dominance in a six-year-old Navajo child; it is also too much to expect a non-Navajo speaking teacher to be able to make a reliable judgement on the Navajo proficiency of her pupils. Basically, though, we may assume that a teacher checking this column is saying: "I've heard this child speak Navajo with his peers or the aide, but I know that he can understand me when I talk to him, and he seems to manage first grade work in English all right." One feels somewhat doubtful that there are in fact 473 (or 16%) such paragons of bilingualism; future studies will be needed to assess the reliability and validity of this category in particular.

The questionnaire we used did not permit us to decide how many of the 298, or 10% graded n-E or E, native speakers of English, are in fact children of Anglos rather than Navajos. There are a number of Anglo employees on the reservation, and in some cases, employees' children are permitted to go to BIA schools. In the more crucial case of the Gallup-McKinley schools, however, we may be confident that only Navajo children have been included in the sample.

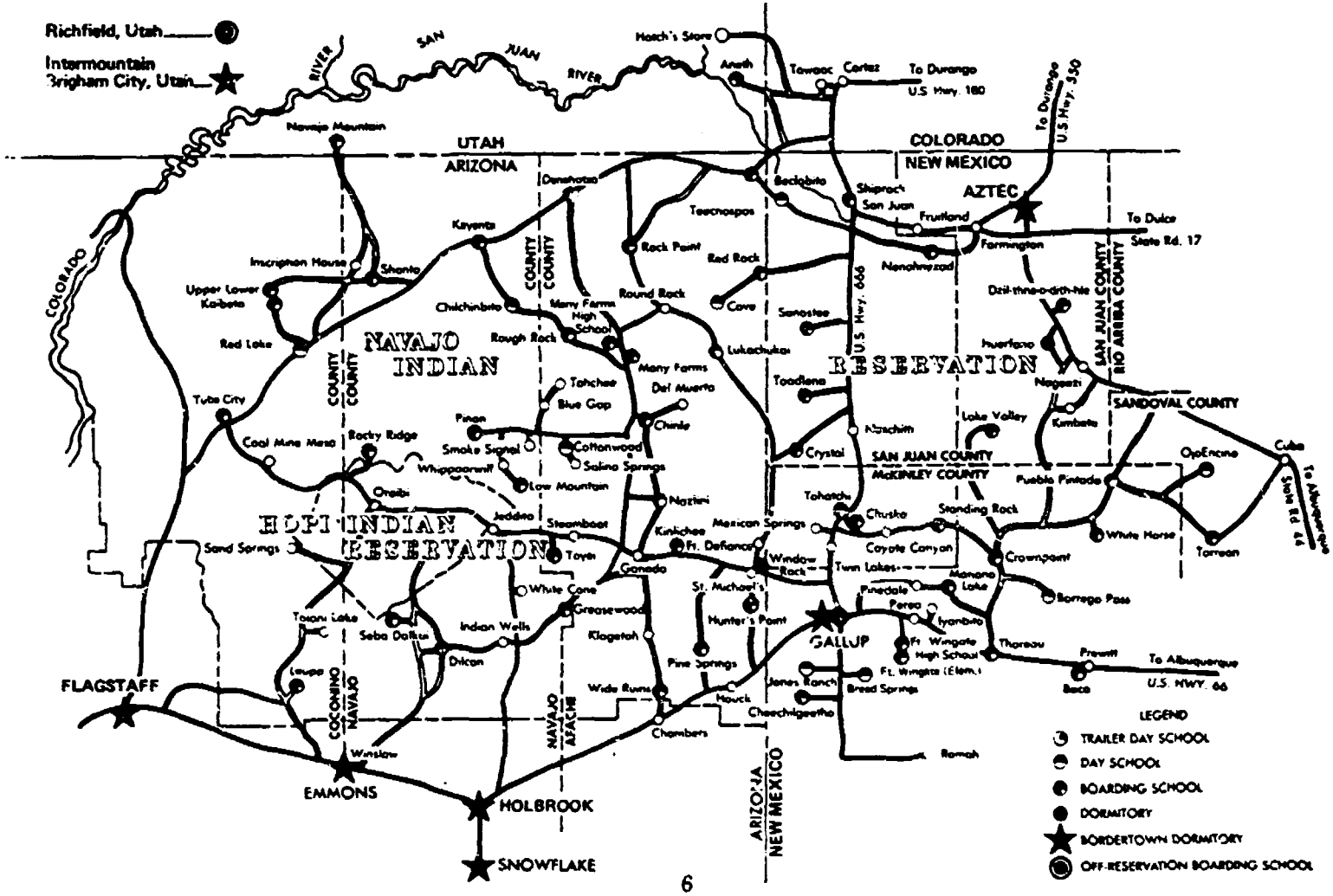
Richfield, Utah
Intermountain
Brigham City, Utah
SAN JUAN RIVER
Hoach's Store
Aneth
Towaoc
Cortez
To Durango
U.S. Hwy. 160
To Durango
U.S. Hwy. 550
Navajo Mountain
UTAH
ARIZONA
COLORADO
NEW MEXICO
Beclabito
Shiprock
San Juan
AZTEC
Fruitland
To Dulce
State Rd. 17
Farmington
Nenahnezad
Dzil-thne-o-dith-hle
SAN JUAN COUNTY
RIO ARRIBA COUNTY
Huerfano
Nageezi
SANDOVAL COUNTY
Kimbeto
Lake Valley
Nageezi
Cuba
To Albuquerque
State Rd. 44
Ojo Encino
Torreon
Pueblo Pintado
White Horse
Crownpoint
Standing Rock
Coyote Canyon
Twin Lakes
Manuelito Lake
Borrego Pass
Pinedale
Iyanbito
Thoreau
Prewitt
To Albuquerque
U.S. HWY. 66
Baca
GALLUP
Ft. Wingate High School
Ft. Wingate (Elem.)
Bread Springs
Jones Ranch
Houck
Chechilgeetho
Ramah
Navajo Mountain
Kayenta
Dennehotso
Teec Nos Pos
Rock Point
Red Rock
Cove
Round Rock
Many Farms High School
Rough Rock
Chichinbito
Lukachukai
Many Farms
Del Muerto
Tsaile
Blue Gap
Tohchee
Pinon
Cottonwood
Salina Springs
Low Mountain
Nazlini
Steamboat
Jeddito
Toyei
Ganado
Kinlichee
Ft. Defiance
Mexican Springs
Window Rock
St. Michael's
Hunter's Point
Pine Springs
Wide Ruins
Chambers
Greasewood
White Cone
Klagetoh
Indian Wells
Dilcon
Seba Dalkai
Tsaan Lake
Leupp
Winslow
Sand Springs
Oraibi
Whippoorwill
Smoke Signal
Coal Mine Mesa
Rocky Ridge
Tuba City
Red Lake
Upper Lower Kaibeto
Inscription House
Shonto
Navajo Mountain
Tohatchi
Crystal
Nahodishgish
Toadlena
Sanostee
Lukachukai
Huerfano
Nageezi
Lake Valley
Kimbeto
Chuska
Standing Rock
Coyote Canyon
Crownpoint
Pueblo Pintado
White Horse
Torreon
Ojo Encino
Cuba
Twin Lakes
Manuelito Lake
Borrego Pass
Pinedale
Iyanbito
Thoreau
Prewitt
Baca
To Albuquerque
U.S. HWY. 66
Bread Springs
Jones Ranch
Houck
Chechilgeetho
Ramah
Wide Ruins
Chambers
Pine Springs
Hunter's Point
St. Michael's
Window Rock
Fort Defiance
Ganado
Toyei
Steamboat
Jeddito
Low Mountain
Nazlini
Whippoorwill
Smoke Signal
Cottonwood
Salina Springs
Pinon
Tsaile
Blue Gap
Tohchee
Del Muerto
Many Farms
Many Farms High School
Rough Rock
Chichinbito
Round Rock
Cove
Rock Point
Red Rock
Teec Nos Pos
Kayenta
Dennehotso
Inscription House
Shonto
Upper Lower Kaibeto
Red Lake
Tuba City
Coal Mine Mesa
Rocky Ridge
Oraibi
Sand Springs
Tsaan Lake
Leupp
Seba Dalkai
Dilcon
Indian Wells
White Cone
Greasewood
Klagetoh
Kinlichee
Mexican Springs
Toadlena
Nahodishgish
Crystal
Lake Valley
Kimbeto
Nageezi
Huerfano
Dzil-thne-o-dith-hle
Farmington
Nenahnezad
Fruitland
San Juan
Shiprock
Beclabito
Teec Nos Pos
Aneth
Hoach's Store
COUNTY
COUNTY
COUNTY
COUNTY
U.S. Hwy. 666
NAVAJO INDIAN RESERVATION
HOPI INDIAN RESERVATION
SAN JUAN COUNTY
McKINLEY COUNTY
COCONINO
NAVAJO
NAVAJO
APACHE
ARIZONA
NEW MEXICO
FLAGSTAFF
EMMONS
HOLBROOK
SNOWFLAKE
LEGEND
TRAILER DAY SCHOOL
DAY SCHOOL
BOARDING SCHOOL
DORMITORY
BORDERTOWN DORMITORY
OFF-RESERVATION BOARDING SCHOOL

TABLE II

SCHOOLS	No. of six-year-olds	% of N + N-e	Mean	Accessibility Index
BUREAU OF INDIAN AFFAIRS:				
Chinle Agency:				
Chinle	28	100%	4.78	91
Low Mountain	37	81%	4.05	115
Lukachukai	59	83%	4.27	102
Many Farms	24	67%	4.33	103
Nazlini	22	95%	4.77	101
Pinon	69	99%	4.71	122
Rock Point	44	98%	4.40	88
Cottonwood Day	41	95%	4.17	104
Eastern Navajo Agency:				
Baca	6	100%	4.33	19
Cheechilgeetho	29	86%	4.00	56
Crownpoint	26	92%	4.19	58
Lake Valley	14	100%	5.00	141
Mariano Lake				
Pueblo Pintado	37	78%	4.08	124
Standing Rock	15	100%	4.33	39
Thoreau	19	95%	4.31	32
Torreon	20	100%	4.75	126
Whitehorse	15	100%	4.06	139
Ft. Wingate	24	100%	4.75	13
Borrego Pass	11	100%	4.81	75
Bread Springs				
Jones Ranch	11	91%	4.36	54
Ojo Encino	15	87%	4.13	157
Ft. Defiance Agency:				
Chuska	47	60%	3.78	24
Crystal	19	84%	3.89	52
Dilcon	61	79%	4.11	53
Greasewood	8	63%	3.62	86
Hunter's Point	48	94%	4.52	33
Kinlichee	29	97%	4.44	53
Pine Springs	17	47%	3.58	68
Seba Dalkai	29	83%	3.75	46
Tohatchi	6	67%	3.66	26
Toyei	55	98%	4.49	80
Wide Ruins	29	66%	4.10	85
Shiprock Agency:				
Aneth	38	100%	4.34	49
Nenahnezad	34	65%	4.35	14

Shiprock Agency cont'd.:				
Red Rock	25	100%	4.44	80
Sanostee	48	79%	4.06	67
Shiprock	26	96%	4.30	27
Teecnospos	78	87%	4.10	47
Toadlena	45	49%	3.26	86
Beclabito Day	2	50%	3.50	50
Cove Day	17	100%	4.82	102
Tuba City Agency:				
Dennehotso	37	95%	4.29	91
Kaibeto (upper)				
Kaibeto (lower)				
Kayenta	74	73%	4.72	
Leupp				
Navajo Mountain	31	87%	4.51	251
Rocky Ridge	38	100%	4.78	102
Shonto				
Tuba City	103	98%	4.51	79
Red Lake Day				80
GALLUP-McKINLEY SCHOOLS:				
Urban:				
A. Roat	41	54%	3.07	1
Indian Hills	12	50%	3.24	1
Jefferson	11	46%	3.18	1
Lincoln	13	15%	2.15	1
Red Rock	24	75%	3.75	1
Roosevelt	8	13%	2.28	1
Sky City	1	100%	4.00	1
Sunnyside	9	11%	2.33	1
Washington	45	24%	2.37	1
Rural:				
Church Rock	75	64%	3.67	14
Crownpoint	132	42%	3.35	58
Navajo	66	55%	3.56	42
Ramah	32	77%	3.93	43
Thoreau	69	93%	4.27	32
Tohatchi	85	66%	3.85	26
Tse Bonito	10	100%	4.00	24

TABLE II

PUBLIC SCHOOLS:

Kayenta:				
Kayenta	83	64%	3.67	117
Ganado:				
Ganado	74	91%	4.17	52
Central:				
Naschitti	45	31%	3.31	42
Mesa	113	53%	3.49	27
Wilson	64	53%	3.58	8
Valley	67	48%	3.07	27
Newcomb				
Chinle:				
Many Farms	43	70%	3.58	103
Chinle	119	65%	3.54	91
Round Rock	16	69%	3.69	101

Some evidence of the regional variation may be arrived at by looking at the figures (raw totals and percentages) for the five agencies of the BIA. (Table III), As might be expected, the Ft. Defiance Agency and the Shiprock Agency turn out to have the highest percentage of English speakers; this reflects the two main settlement areas at Window Rock and Shiprock. The other three agencies have low English use. This tendency is explained in part by the distance factor considered below; the average distance of schools from off-reservation centers for each agency is given in Table IV.

A calculation of the correlation of the indices of degree of Navajo and accessibility (Table II) shows that the two indices of Navajo correlated with each other very highly .913 (Pearson); the first index correlated .517 and the second .413 with the index of accessibility. The first index is, as mentioned above, probably a better general measure for the data. It takes into account the general distribution, while the second ignores distribution within the columns. We can see clear evidence then in support of the notion that the loss of Navajo correlates with accessibility of off-reservation towns. Behind this is the notion that the closer one lives to the edge of the reservation, the more likely one is to have given up on traditional reservation values. (By "edge" we mean not the edge of the reservation as it appears

TABLE III

AGENCY	N	N-e	N-E	n-E	E
Chinle	174 (54%)	120 (37%)	27 (8%)	1 (1%)	2 (1%)
Eastern Navajo	109 (45%)	115 (48%)	11 (5%)	7 (3%)	0
Ft. Defiance	127 (36%)	152 (44%)	60 (17%)	4 1%)	5 (1%)
Shiprock Agency	108 (35%)	155 (50%)	31 (10%)	15 (5%)	4 (1%)
Tuba City	176 (62%)	99 (35%)	5 (2%)	2 (1%)	1 (1%)

TABLE IV

Agency	Mean (Navajo Index)	Accessibility Index
Tuba City	4.56	131
Chinle	4.44	103
Eastern Navajo	4.39	79
Shiprock	4.13	58
Ft. Defiance	3.99	55

on a map, of course, but the edge as provided by the presence of an off-reservation shopping center.) The correlation of about .5 is probably a reasonable picture of the significance of the factor, for there are of course other factors that account for language maintenance.

A second fact, on which we do not have direct evidence, but for which evidence can be derived from our data, is the factor of distance of a child's home from the school. This we may assume to account for some of the inter-child variation, but we have no evidence for that. It should also account for some of the interschool variation. That this is so can be seen when we compare the results we get for BIA and Public schools. One of the factors that decides whether a child goes to a Public School or a BIA boarding school is his distance from the school, or rather from a school bus route: the general principle is that a child must live more than one and half miles from a Public school bus route before he is permitted to be enrolled in a BIA boarding school. There are probably exceptions, but this gives a measure of general tendency. Now the comparison between BIA schools as a whole and public schools is clear. For the BIA schools we have an index of Navajo of 4.30, and for the public schools in the sample, omitting Gallup urban schools, an index of 3.58. Again, if we compare individual

schools in the same area, we find that Kayenta BIA Boarding School for example has an index of 4.72 and Kayenta Elementary school an index of 3.67. (See Table V for other pairs.) It would be of value to support these data by collecting actual figures of the distance that individual pupils live from school so that one could determine the contribution of this factor to the general picture.

To use these results to predict future trends is difficult. Let us for the moment accept our figure that about 25% of the children on the reservation are being spoken to by their parents in English. One suggestive comparison is possible if we consider some data collected by Witherspoon (personal communication); he estimates that one third of the over-forty generation had any schooling in English, two-thirds of the 20-40 year olds, and most of 6-20 year olds. Now, assuming that the middle group are the present child-raising group, we find that with two thirds of the parents exposed to English at school, four-fifths of them continue to speak Navajo to their children. Of course a great number of the 20-40 year olds who completed school will be living off the reservation, so that we do not have data on the language spoken to their children. It is nonetheless a reasonable assumption that going to school is not enough to lead to a loss of language. But the figure of those completing

TABLE V

BIA SCHOOLS			PUBLIC SCHOOLS		
Name of School	% of N + N-e	Mean	Name of School	% of N + N-e	Mean
Chinle	100%	4.78	Chinle	65%	3.54
Crownpoint	92%	4.19	Crownpoint	42%	3.35
Kayenta	73%	4.72	Kayenta	64%	3.67
Shiprock	96%	4.30	*Mesa	53%	3.45
			Valley	48%	3.07
Thoreau	95%	4.31	Thoreau	93%	4.27
**Tohatchi	67%	3.66	Tohatchi	66%	3.85
Chuska	60%	3.78			
Red Rock	100%	4.44	Red Rock	75%	3.75
Many Farms	67%	4.33	Many Farms	70%	3.58

*Two public schools compared to one BIA school.
**Two BIA schools compared to one public school.

elementary school and going on to high school is nearer to one third of the 20-40 generation. Allowing that these are also the ones who are likely to stay off the reservation, we see a much closer fit between a person's completing elementary school and the likelihood that as a parent he will speak English to his children. If this is so, we might expect to see a great decrease in the amount of Navajo spoken as soon as the educational system on the reservation starts to be effective and as soon as more and better roads are built.

One of the central questions in the study of bilingualism is the degree to which it is possible for a group to maintain their language even when accepting other cultural values. There are of course numbers of cases of peoples who have managed to develop a modern industrial society without giving up their national language. It's not easy, but it can be done. A necessary concomitant of such a result is a highly developed sense of national identity, and a movement supporting the national language as symbol of that identity. Whether this will develop with the Navajos remains to be seen. An earlier attempt at language standardization and modernization, with a widespread Navajo literacy campaign and an associated newspaper, petered out. A new impetus has started, closely tied with education, and focussed in a couple of schools. If it succeeds, it will of course have a considerable effect on future language maintenance.

We see our survey then as a first step. In future studies, we plan to find methods of testing the reliability and validity of the teachers' judgements on which we depend, and to attempt to gather other data that might be relevant (such as whether a child has older brothers or sisters at school and whether he attended a head start program). But at the moment we can safely say that one Indian language, at least, is not about to die between the completion of the linguist's description and its publication.

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