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## ABSTRACT

This study documented English acquisition by a group of Hmong adult immigrants over a period of one year, and explored the factors that appeared to be affecting their progress. Based on three measures (a test of listening comprehension, communication, fluency, reading, and writing; a pictured English vocabulary recognition test; and a written English vocabulary test), it was found that learning was taking place, slowly, 2 to 4 years after arrival in the United States. Individuals' relative positions within the group with regard to English proficiency remained much the same over time. Both the individuals' experiences before arrival and their current activities were found to be highly correlated with English proficiency. Analyses indicate that certain background characteristics, especially proficiency in reading Hmong, age, and amount of education received before immigration, are strong predictors of English proficiency. As additional data are analyzed, particular attention will be paid to the apparently strong role played by literacy in Hmong, and to the pervasive interaction between literacy and language acquisitions. (MSE) (Adjunct ERIC Clearinghouse on Literacy Education)

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Factors in Individual Acquisition of English :  
A Longitudinal Study of Hmong Adults

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Within the past 10 to 15 years, adult second language acquisition has become the subject of a number of studies. Second language acquisition research in general has followed in the footsteps of studies of first language acquisition, primarily focusing on children learning a language and attempting to answer the question, "Is second language learning like the first?" (e.g., Ervin-Tripp 1974). Adults' experience with language learning has been compared with that of children. Studies have pointed out the similarities in the processes of first and second language learning (Chamot 1981; Krahnke & Christison 1983); they have also shown that children and adults tend to follow similar patterns in the order in which they acquire certain grammatical aspects of the second language (Dulay & Burt 1974; Bailey, Madden & Krashen 1974). Although comparisons of rate of acquisition and proficiency attained by children and adults appear to vary in their findings, in general such studies concur that adults and older children acquire the second language faster in the early stages, but that children will usually attain greater proficiency than adults in the long run (Krashen, Long & Scarcella 1979).

Considerable discussion has evolved regarding factors which may explain these differences in rate of acquisition and proficiency between children and adults, as well as individual differences observed among adults. Suggestions include characteristics such as language aptitude, verbal intelligence, sense of self-esteem, willingness to take risks, attitude toward the language or culture in which it is used (social and psychological distance), and motivation to acquire the language. Other factors beyond the individual also considered to be influential include social aspects of the interaction between the two language groups (relative size of the groups, attitudes toward each other, etc.). Researchers generally

agree on the importance of social and affective factors in second language acquisition (Gardner & Lambert 1972; Krahnke & Christison 1983; Lambert 1981; Schumann 1975, 1976; Stauble 1980). However, they have found such factors difficult to measure.

Despite the growing interest in adult second language acquisition, most of the research to date has been of only minimal utility to individuals who teach English to recent immigrants and refugees in this country. In part, this is due to the still limited number of studies which focus on adults. However, the major barrier to applying the research is the disparity between the characteristics of the adult subjects of most studies and the backgrounds of the many adults who have arrived in this country in the last 5 years. In general, researchers have examined the acquisition of a host country language by foreign students or educated foreigners (such as Americans living abroad). Such individuals have been highly educated in their own countries and enter at a high level into the educational system in the country in which they are studying. The differences are very clear between the educational attainment and other background characteristics of university-level foreign students and adult refugee ESL students from Third-World rural agricultural backgrounds.

The present paper contributes to the growing body of research on factors which influence adult second language acquisition by clarifying the important role of background characteristics in the acquisition of English. The backgrounds of the adults in this study contrast sharply with those of participants in other studies: The subjects here are Hmong refugees--slash-and-burn farmers from the mountains of Laos, individuals with little or no formal schooling and often no previous literacy skills. Through a combination of qualitative and quantitative methodologies, the study examines these individuals' acquisition of English in light of the differing

background experiences each individual brings to the acquisition process and also considers the influence of each person's current activities.

Our research with the Hmong has been conducted in several phases:

- 1) ethnographic fieldwork and informal English classes with a cohort of 10 adults;
- 2) a community survey of 332 households; and
- 3) a longitudinal study of the acquisition of English by the adults in 20 randomly selected families over a year's time.

We began our work with the Hmong by conducting informal English classes with five men and five women recently arrived in this country and settled in a large urban center on the West Coast. The classes were a rich source of information about English language and literacy acquisition and evolving perceptions about literacy, as well as a vehicle through which to network out into the students' extended families. During a year and a half, we participated in the adjustment of these people to life in their new environment and observed their growing use of English language and literacy skills in their daily lives. This first phase of the research revealed wide variation among Hmong adults' acquisition of spoken and written English. To investigate these differences further, information was needed about the distribution of background variables and formative experiences among community members.

A community-wide household survey (reported by Reder 1982) was conducted to obtain a quantitative picture of the variation in factors that the previous ethnographic work had suggested might be critical in language and literacy development. Interviews were conducted with 332 household heads--approximately 90 percent of the community. Topics included the educational and linguistic backgrounds of family members over the age of 12, family migration history, employment and English language training, economic and religious status, and any

additional concerns voiced by the interviewees. Also included was a self-report measure of English proficiency by Hmong adult household members. The results of that survey indicated that the process of acquisition is heavily influenced by the background characteristics (e.g., age, previous education, literacy) which individuals bring with them to learning a second language. In other words, people are differentially ready to acquire English when they enter this country.

To investigate the apparent causal links suggested by the household survey and to measure language proficiency objectively as it develops over time, a longitudinal study was designed. This study complements both prior phases of the research. On the one hand, by following a smaller number of individuals over time, the longitudinal work could achieve greater depth than the household survey; on the other hand, by focusing on objective assessment and documentation of individuals' language and literacy skills and knowledge at specific points of time, it provides quantitative data which complement that obtained in the ethnographic phase of the work.

This paper will describe the methodology used to trace this group of Hmong adults' acquisition of English language and literacy over a year's time and then focus on some of the study's preliminary results. Once we have discussed the acquisition documented during this time period, we shall examine the factors which seem to account for individual differences in acquisition of English.

## METHODS

### Sampling Procedure

From the comprehensive community survey population, a random sample of 20 families was selected. Since findings from the initial phase of the research had

suggested that most Hmong adults acquire only minimal English language and literacy proficiency during their first year in this country, the sample of families was stratified by length of time they had been in the United States. The households in the community survey were thus divided into four groups, based on the length of time the head of the household had been in the United States: 0-5 months, 6-11 months, 12-17 months and 18-23 months. These strata were then filled with families selected randomly--five from each of the four time groups. This purposeful stratification allowed observation of various periods of language and literacy acquisition: The observations during the longitudinal study represented 1 year in four different segments of a 3-year period of acquisition and adjustment. That is, at the start of the study the families had been in this country from 1 to 3 years, having arrived between early 1979 and early 1981.

#### Characteristics of the Study Population

The sample of 20 families included 59 adults age 18 and over who agreed to participate in the year of observation and assessment. Eight additional adults live in these households, but were not included in the study due to extreme age, physical or mental disabilities, or reluctance. The 59 participants were nearly equally divided among women and men. Their ages ranged from 18 to 72; nearly half of the sample were between the ages of 25 and 35. As indicated in Table 1, this group as a whole had rather limited experience with literacy and education: 80 percent had not attended school in Laos; 81.5 percent could not read Lao, a skill which was acquired through formal schooling in Laos. Literacy in Hmong, on the other hand, was acquired informally; 29.6 percent of this population reported

TABLE 1

Background Characteristics of the Longitudinal Study Population  
Full Sample and After Attrition

Background Characteristics	Full Sample		Individuals Participating in Both First and Last Assessments	
	n	Percent	n	Percent
<u>Age*</u>				
Range		18 - 72		18 - 71
Mean		35.2		35.9
<u>Sex</u>				
Women	28	47.5	18	48.6
Men	31	52.5	19	51.4
<u>Proficiency in Speaking Lao</u>				
None	26	48.1	17	48.6
Some	28	51.9	18	51.4
<u>Proficiency in Reading Hmong</u>				
None	38	70.4	26	74.3
Some	16	29.6	9	25.7
<u>Proficiency in Reading Lao</u>				
None	44	81.5	29	82.9
Some	10	18.5	6	17.1
<u>Education in Laos</u>				
None	44	80.0	30	83.3
Some	11	20.0	6	16.7
<u>Education in U.S.*</u>				
Under 1 year	27	55.1	16	47.1
Over 1 Year	22	44.9	18	52.9
<u>Length of Residence in U.S.</u>				
0-5 months	13	24.5	9	25.7
6-11 months	24	45.3	16	45.7
12-17 months	12	22.6	9	25.7
18-23 months	4	7.5	1	2.9

Note: Unless otherwise indicated, these data were gathered during the household survey conducted in April and May 1981.

\*by the time of Assessment 2 (July and August 1982)



having at least some proficiency in reading Hmong.<sup>1</sup> The ability to speak Lao could also be acquired informally, through social contacts and trade. Thus, more individuals could speak Lao than could read it--slightly over half the population.

#### Maintenance of the Cohort

During the course of this research, the Hmong community under study--like many other Hmong communities around the country--began to experience the flux of secondary migration. By the spring of 1982, approximately three-quarters of the population had moved to California. By the time of the study's second assessment visit (July and August 1982), 85 percent of the study participants had moved to one of four different cities in the Central Valley. Fortunately, they were all willing to continue to participate and we were able to follow them to their new homes. However, by the end of the year, 28.8 percent of the individuals who had originally agreed to participate in the longitudinal study had dropped out for varying reasons, including lack of time or interest or health problems. In addition to that attrition, some individuals who remained with the study until its completion had been unable to participate in the first assessment. Thus, the number of people who were part of both the first and last assessments was reduced to 63 percent of the original group.

As seen in Table 1, this attrition fortunately had very little effect on the composition of the cohort in terms of background characteristics, length of residence in the U.S. or amount of schooling taken here.

#### Background Interviews

Prior to initiating bimonthly objective assessments of individuals' English capabilities, a series of indepth interviews was conducted with each of the 20 families. These interviews focused on the families backgrounds and experiences in

Laos and Thailand and document the nature and extent of individuals' exposure to formal education, literacy and other languages prior to their arrival in the United States, as well as their knowledge and uses of literacy in the various environments. Information was gathered regarding who acquired literacy, who used it for various purposes and how they were perceived by others, how the uses and perceptions of literacy changed with the move from villages in Laos to camps in Thailand, etc.<sup>2</sup>

### Bimonthly Assessment Visits

Once the background interviews were completed, we began to visit the families every 2 months, starting in late May and early June 1982 and thereafter continuing over a year's time. Several hours each visit were spent with each adult family member (men and women over the age of 18).

During an assessment visit, time was spent with each individual discussing activities and experiences which had taken place during the 2 months since the preceding visit. A series of assessment tasks was then conducted. Numerous tasks using varied materials were devised to assess individuals' oral English proficiency, their abilities to read and write in English, and their knowledge of the uses of English literacy in this country. In addition, proficiency in reading and writing Hmong and Lao were documented. Some tasks were conducted every visit to establish developmental trends, others only periodically, and some only during the first and last visits to capture overall changes.

A standardized ESL test (the Basic English Skills Test, or B.E.S.T., developed by the Center for Applied Linguistics for use with adult Southeast Asian refugees' was administered during the first assessment visit and again during the final (seventh) session. All other tasks were specially developed for these assessments; they include the oral identification of pictured English vocabulary items,

recognition of written English vocabulary items, repetition of sentences of varying length and grammatical complexity, reading and writing of materials sampled from selected genres of written English, Hmong and Lao (e.g., a social letter, an agency form letter, a job application, a change of address form, a sample of driver's test questions, etc.), and demonstration of knowledge of the uses of written materials common in daily life in the United States.

In designing these assessment tasks, we drew on previous experience helping Hmong friends learn English. Care was taken to employ not only a broad range of written materials, but also diverse contexts and methods, since in this phase of the research it was not feasible to follow this group of adults (59 individuals dispersed into five different cities) out of their homes and into their interactions using new language and literacy skills in the surrounding host community. Thus, individual lexical items were presented in varied contexts--e.g., as isolated vocabulary items as well as in the genre of a form letter, bill or street sign.

A "literacy portfolio" of frequently encountered written artifacts was compiled, consisting of actual newspaper ads, receipts, prescriptions, registration forms, bills, etc., and photographs of street signs, license plates, store windows and so forth. Items in this portfolio were discussed with study participants in English or in Hmong as the individual preferred, since the purpose of this task was not merely to determine the extent of each individual's ability to read these items, but rather his or her understanding of what they represent and what functions they serve. In addition to recognition of the item and specification of the way it is used, questions were asked about each participant's personal experience using it, frequency of use, need for assistance in using it, etc. In this way, information was gathered on individuals' exposure to a wide range of literacy items and situations in which they are used as well as the social networks

that have developed within the community to cope with the new demands posed by the wider literate society. The portfolio was presented at the beginning and end of the year of observation to document acquisition of knowledge and changes in experience with the items.

Other purposive data collection also took place throughout the year. Information about individual participants' educational and employment status was updated every 2 months. Twice during the year the types of activities outside the home in which individuals participated were discussed, and the nature and frequency of the activity and the role, if any, which literacy (in English, Hmong or Lao) played in it were carefully noted. Preliminary analyses midway through the study indicated the importance of native language literacy as a predictor of both oral and written English proficiency. This finding, which substantiated earlier findings from the ethnographic and survey phases of the research, prompted the collection of additional information about the phenomenon of Hmong literacy. Discussions focused on the uses of Hmong literacy, methods and materials used for acquiring it, and the reasons some Hmong are continuing to learn to read and write Hmong in this country.

#### MEASURING ACQUISITION

Two of the objectives of this longitudinal study were first, to observe and document the ongoing process of language and literacy acquisition in the Hmong community, and second, to identify factors which influence that acquisition. The results reported here are based on preliminary analyses of the first and last assessments of three of the measures mentioned above: (1) the Basic English Skills Test (B.E.S.T.), (2) the recognition of pictured English vocabulary items, and

(3) the recognition of written English vocabulary items. Comparisons of each of these measures, between the first and last visits, indicate that acquisition took place over the year's time. (See Figures 1-3.) The mean scores on these measures improved from 13.2 to 22.7 percent.

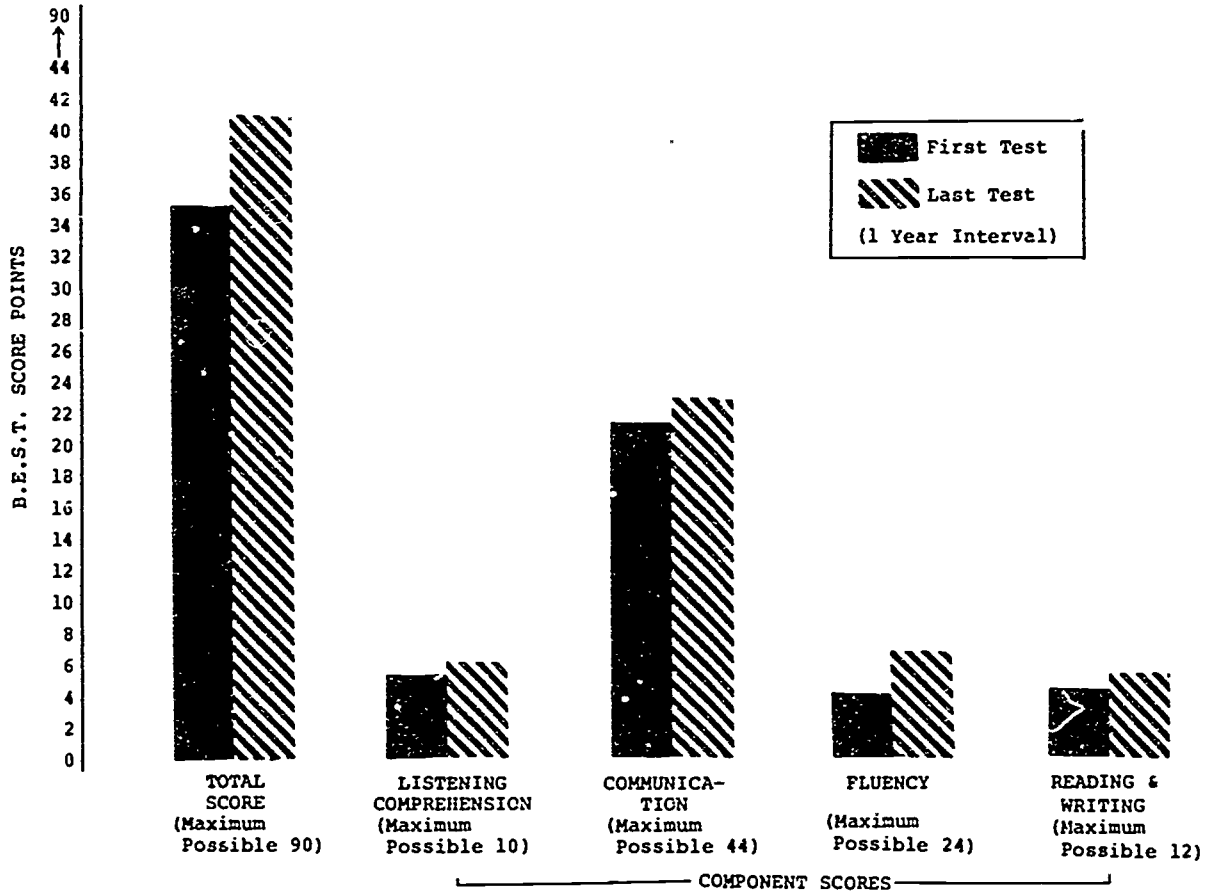
#### The B.E.S.T.

The B.E.S.T. Core Section is described as assessing five areas of skill: listening comprehension, communication, pronunciation, fluency and reading and writing. All but pronunciation were scored in this study. The version administered in this study has a maximum possible score of 90. The highest score among these adults at the beginning of the year was 88, the lowest 1; by the end of the year the range was 0-83. Thus, both at the start and the finish of the year, the range of abilities in this population was quite wide. The group mean for the total score on the B.E.S.T. was 35.57 at the start of the year; by the end it had gone up 15 percent to 40.92. (See Figure 1.) Fifty-four of the 59 adults in the longitudinal study took the B.E.S.T. at the beginning of the year, whereas 38 took it at the end. Thirty-seven people took both tests; comparative analyses presented here include only these individuals.

#### Pictured English Vocabulary Recognition

This task used pictures to measure the acquisition of oral English vocabulary by Hmong adults. During each of six bimonthly visits, participating adults were asked to identify orally pictures of a randomly assigned set of vocabulary items in English. The population of pictures used in this task was taken from the Peabody

FIGURE 1  
 BASIC ENGLISH SKILLS TEST (B.E.S.T.)  
 n = 37

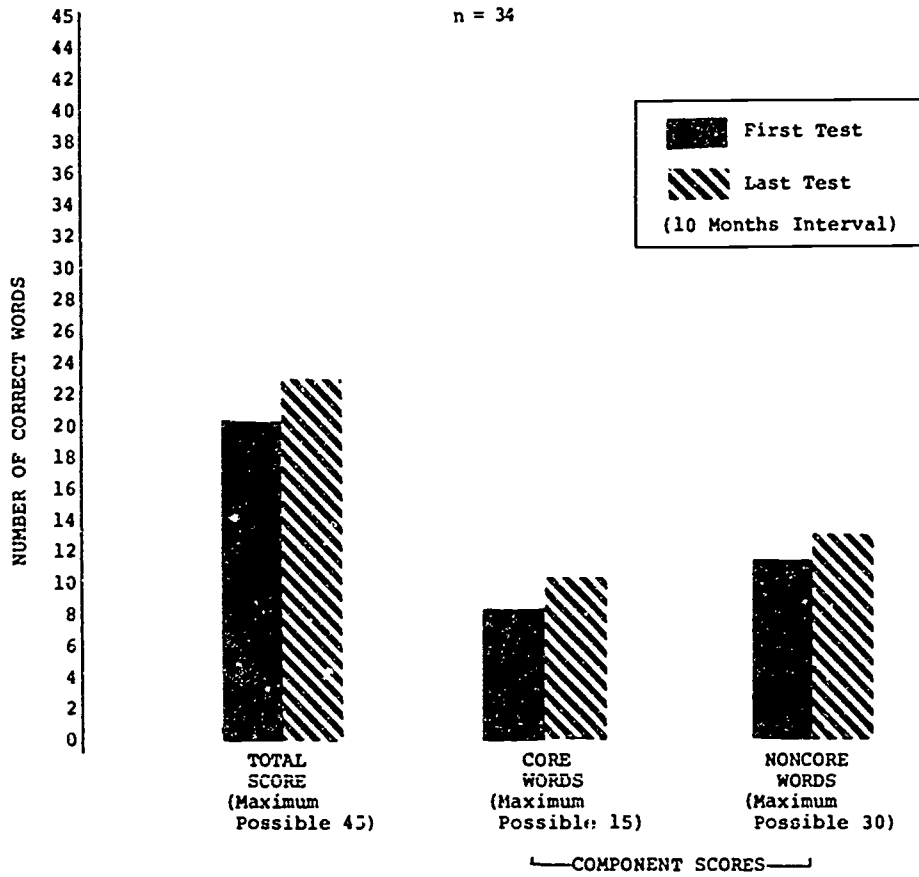


Articulation Cards (PAC), originally designed for use with children and adults whose speech production requires further development or remediation.<sup>3</sup> These cards were selected for use here because of the clarity and realism of the pictures. Since the medium is pictures, the words are mainly nouns; some verbs and a few adjectives (colors) are included. The 350 pictured words in the PAC were screened to eliminate items which were ambiguous to Hmong adults. From a total of 210 acceptable words, six sets of 30 pictures were randomly generated. Fifteen additional words were selected for inclusion in all six assessments: ten randomly selected items and five items purposely chosen for their relative simplicity and frequency of use. The five "easy" items were included to ensure that everyone would know some words, thus preventing individuals at low levels from becoming overly discouraged.

Vocabulary growth was measured by assessing knowledge of the six sets of words, one set per visit. Variation in the order of these sets across individuals made it possible to avoid confounding the potential effects of order of testing with growth of vocabulary over time.<sup>4</sup> The 15 "core" items were added to each set to be used as an indicator of change or acquisition from one assessment to the next, before the full six sets of words had been administered. Of course, repeated assessment of these 15 core words every 2 months might confound the effects of repetition with those of spontaneous acquisition. However, once the six assessments were complete, the rate of growth of core and noncore items could be compared to determine approximately how much influence repetition over assessments might have had.

The scores on the noncore pictured vocabulary items ranged from 0 to 25 (out of a total of 30) on the first assessment and 0 to 26 on the last; core scores ranged from 0 to 13 and 0 to 15, respectively. As illustrated in Figure 2, the mean

FIGURE 2  
 PICTURED VOCABULARY RECOGNITION  
 n = 34





number of noncore words recognized increased from 11.82 on the first assessment to 13.38 on the sixth, up 13.2 percent. The mean number of core words recognized increased from 8.27 to 10.18, a rise of 23.1 percent. The larger increase among core items suggests that in addition to the overall vocabulary growth taking place, repetition of core items over sessions also had an effect on learning.

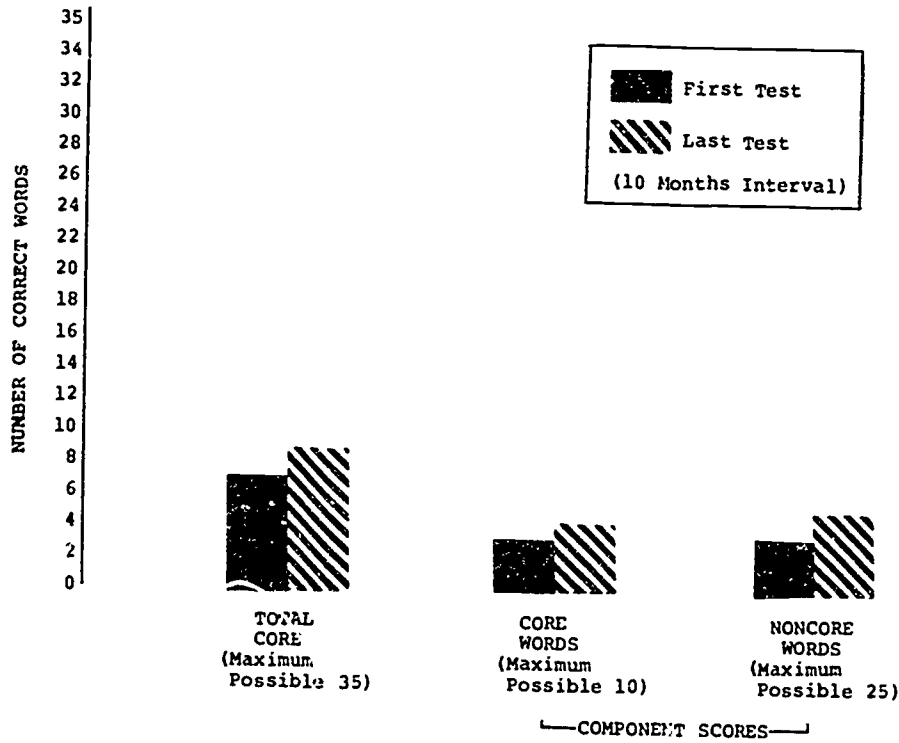
The interval between the first and last assessments of this and the task described below was approximately 10 months. Thirty-four individuals participated in both first and last assessments of these tasks.

#### Written English Vocabulary Recognition

In this task, recognition of isolated written lexical items was used as one measure of literacy. Using a procedure similar to that used to generate materials for the pictured vocabulary task, six partially overlapping sets of items were developed and presented to individuals in varying orders over the six visits. Twenty-five items were unique to each set and ten were common to all six.<sup>5</sup> During each of six assessment visits, participants were asked to read and paraphrase each item in the given set of 35 English words, phrases and common abbreviations, written in boldface type on 3x5 index cards.

Scores on the noncore written vocabulary items ranged from 0 to 20 on the first assessment and 0 to 21 on the last; core scores ranged from 0 to 8 and 0 to 9, respectively. The group mean for noncore items rose 22.7 percent, from 3.88 words out of 25 to 4.77. (See Figure 3.) The mean core item score rose 29.3 percent, from 3.31 words out of ten, to 4.15. Clearly, this task was more difficult for the majority of participants than was the pictured vocabulary recognition: A full

FIGURE 3  
 WRITTEN VOCABULARY RECOGNITION  
 N = 34



50 percent of those participating in both first and sixth assessments recognized no noncore written words at all in the first session and that figure only dropped slightly, to 47 percent, during the last session. Thirty-eight percent knew no core written words the first time, 29 percent knew none the last. This contrasts greatly with the pictured vocabulary results, in which only 1-2 individuals knew no noncore items.

### Relative Proficiencies

Beyond documenting the acquisition which has taken place, this study examined individual variations in acquisition. The Hmong's acquisition of English is by no means uniform. Like other immigrants before them, not all Hmong adults master the English language or literacy. A wide range of proficiencies and levels of functioning exist even among individuals who have been in this country for several years. As noted above, the range of proficiency among these longitudinal study participants is considerable: On each of the measures reported here, scores ranged from 0 to close to the maximum possible.

Such differences in learning need to be better understood. In general, individuals acquire some English proficiency early in their resettlement here. According to the results of this study, acquisition continues at a slow pace over time. Analyses of these results further show that the relative levels of proficiency within the group remain much the same as acquisition progresses. That is, individuals who scored low at the beginning of the year of observation continue at a low level relative to the group at the end of the year. The best predictor of how a person performs an assessment task at the end of the year is how he or she performed at the beginning. (On the B.E.S.T., for example, individuals' scores on the test at the first of the year predicted 89 percent of the variance in scores on the test at the end of the year.) When we consider the progress made by a smaller

group of Hmong adults over the past 3 years (that of the Hmong adults to whom we taught English at the beginning of this research project), a similar pattern emerges: All have made progress over those 3 years, but their relative positions within the group with regard to their English proficiency remain the same today as they were 3 years ago.

#### FACTORS AFFECTING ACQUISITION

If individuals tend to maintain their relative level of proficiency (there are exceptions, of course), what accounts for the initial differences? That is, what factors underlie individual differences in the acquisition of English? Our analyses indicate there are many variables correlated with individual differences in acquisition. Many of these variables reflect differences in the experiences individuals had in Southeast Asia, prior to most Hmong's attempts to learn English;<sup>6</sup> others involve experiences concurrent with the learning process.<sup>7</sup> For example, a consistent pattern is evident between individuals' assessment scores and their personal background characteristics, particularly formal education in Laos and proficiency in reading Hmong or Lao. For the most part, the educated group scores higher than the non-educated and the literates higher than the non-literates. (See Table 2.) Similarly, a consistent pattern emerges in relation to individuals' current activities, such as attending school, having American friends, or using English at the store. (See Table 3.) All of these variables

TABLE 2

English Proficiency Scores by Personal Background Characteristics

Proficiency Measures	Scale Values	Education in Laos		Proficiency in Reading Lao		Proficiency in Reading Hmong		Sex	
		None	Some	None	Some	None	Some	Woman	Men
<b>B.E.S.T.</b> n	0-90	31	6	29	6	26	9	18	19
First Test Total		28.8	70.3	29.7	68.0	27.3	62.0	23.9	46.6
Last Test Total		34.4	74.7	35.2	73.5	32.2	69.3	27.4	53.7
<b>Pictured Vocabulary</b> n	0-30 0-30 0-15 0-15	30	4	27	4	24	7		
Noncore Words - First		10.8	19.3	11.1	20.3	10.8	17.4	n.s.*	
Noncore Words - Last		12.5	20.0	12.8	21.8	12.5	19.0	n.s.*	
Core Words - First		7.7	12.3	8.1	12.3	8.0	11.0	n.s.*	
Core Words - Last						9.8	13.1	n.s.*	
<b>Written Vocabulary</b> n	0-25 0-25 0-10 0-10	30	4	27	4	24	7	15	19
Noncore Words - First		2.2	16.5	2.6	15.3	2.3	11.0	1.3	5.9
Noncore Words - Last		3.1	17.0	3.6	16.3	2.9	13.1	n.s.*	
Core Words - First		2.6	8.0	2.8	8.0	2.5	7.0	2.0	4.2
Core Words - Last		3.5	9.0	3.8	8.8	3.5	7.7	n.s.*	

Note: Analyses of variance indicated differences in proficiency by these personal characteristics to be significant at least at the .05 level unless otherwise noted.

\*Difference is not significant at the .05 level.

TABLE 3

## English Proficiency Scores by Current Personal Activities

Proficiency Measures	Scale Values	Attending School Now or Within Last 2 Months		Have American Friends		Speak English With American Friends		Speak to Americans Daily		Speak English at the Store		Speak English to the Doctor	
		No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
<u>B.E.S.T.</u> n	0-90	13	24	26	11	28	9	19	18	21	16	30	6
First Test Total		18.6	44.8	28.8	51.5	29.3	55.0	24.1	47.7	23.1	51.9	28.5	70.3
Last Test Total		17.5	53.6	34.6	55.9	35.0	59.3	26.5	56.2	27.2	58.9	34.2	74.7
<u>Pictured Vocabulary</u> n	0-30 0-30 0-15 0-15	10	21			24	7	15	16	16	15	25	5
Noncore Words - First		8.0	14.2	n.a.*		n.a.*		8.9	15.4	9.9	14.7	10.8	19.2
Noncore Words - Last		9.0	16.5	n.a.*		n.a.*		10.1	17.8	11.3	17.0	13.1	20.0
Core Words - First		6.3	9.8	n.a.*		8.0	11.0	7.1	10.1	7.2	10.2	n.a.*	
Core Words - Last		7.2	12.0	n.a.*		n.a.*		8.5	12.3	8.7	12.3	9.6	14.0
<u>Written Vocabulary</u> n	0-25 0-25 0-10 0-10	10	21	23	8	24	7	15	16	16	15	25	5
Noncore Words - First		.3	6.1	2.7	8.8	2.7	9.7	1.5	6.8	1.1	7.7	2.4	14.2
Noncore Words - Last		.2	7.6	n.a.*		n.a.*		1.5	9.7	2.1	8.6	3.6	14.2
Core Words - First		.7	4.9	2.8	5.5	n.a.*		1.6	5.3	1.9	5.2	3.0	7.0
Core Words - Last		1.8	5.9	n.a.*		n.a.*		3.0	6.0	2.8	6.4	3.9	8.0

Note: Analyses of variance indicated differences in proficiency by these personal activities to be significant at least at the .05 level unless otherwise noted.

\*Difference is not significant at the .05 level.

show a relationship to proficiency in the English language and literacy. The difficulty lies in determining which of these many correlations reflect causal relationships with English acquisition.

Interpretation of the relationship between activities or experiences occurring at the same time as the acquisition being measured is problematic. At best, we can only say there is a positive association, since the influences may flow both ways. For example, ESL training has a very significant correlation with all of the assessment results to date. The mean score at the end of the year for individuals with less than a year of ESL in this country was 25.9 out of a total of 90 points possible on the B.E.S.T., whereas the mean for those with more than a year of ESL was 56.8. Similarly, those not taking ESL within the last two months had a mean of only 17.5; for those presently attending ESL, it was 53.6. Although it would thus appear that ESL training helps, we cannot say from these results whether continued attendance in ESL classes improves proficiency, or whether individuals who are having success with language learning in general (outside of school) are the ones who continue to take ESL, whereas others who are less successful get discouraged and drop out. The same difficulty of interpretation holds for other kinds of ongoing experiences, such as having American friends. Perhaps only those individuals who have reached a certain level of proficiency are willing or able to make social contacts with Americans. The fact that the people with American friends are also the ones who exhibit high levels of proficiency does not necessarily mean that having American friends increases one's proficiency.

Interpretation of associations between English proficiency and prior characteristics or experiences is more straightforward. In such cases, it can be assumed that one variable is causally prior to the other (e.g., that age may affect

English acquisition but English acquisition may not "affect" one's age.) Using multiple regression analyses, we have found that individual differences in acquisition of English language and literacy are largely determined by such prior variables, that is, by individuals' background characteristics. These analyses were used to predict individuals' English proficiency as measured by the assessment tasks described above--the B.E.S.T. and the pictured and written vocabulary recognition tasks. Although the degree of their influence varied from task to task (see Table 4), the following characteristics were found to exert the greatest influence on individuals' English proficiency:

- o Proficiency in reading Hmong (a person literate in Hmong tends to score higher than someone who is not);
- o Age (a younger person tends to score higher than an older person); and
- o Education in Laos (an individual who received some formal schooling in Laos tends to score higher than someone who is not educated).

As seen in Table 4, one of these three variables or a combination of them was found to exert a significant influence on the results of each of the proficiency tasks reported here. For example, these three characteristics predict 60 percent of the variance among individuals' performances on the B.E.S.T. at the first of the year. At the end of the year, proficiency in reading Hmong and one's age are again important predictors. (A minor variation occurs in the third variable to enter the predictive equation, but this variable--sex--only contributes 5 percent to the amount of variance predicted.) Age is a primary influence on individuals' performances on the pictured vocabulary recognition, and education in Laos and proficiency in reading Hmong are the major predictors in the written vocabulary recognition task. To a lesser extent, proficiency in reading Lao--which was



TABLE 4  
Regression Equations for Predicting English Proficiency

Proficiency Measures	Adjusted R <sup>2</sup>	Predictive Variables	b	Beta	F	Significance	
<u>B.E.S.T.</u> First Test	.602	Proficiency in Reading Hmong	5.943	.4228	11.406	.002	
		Age	-.738	-.3598	9.824	.004	
		Education in Laos	3.436	.2737	4.864	.035	
	Last Test	.544	Proficiency in Reading Hmong	5.615	.3548	6.078	.020
			Age	-.920	-.3982	10.576	.003
			Sex	15.316	.2976	4.644	.039
<u>Pictured Vocabulary</u> <u>Noncore Words</u> First Test	.236	Proficiency in Reading Lao	1.851	.3442	4.303	.047	
		Age	-.364	-.6035	16.612	.000	
	Last Test	.342	Age	-.155	-.5319	11.443	.002
			Age	-.161	-.4979	9.559	.004
	<u>Core Words</u> First Test	.590	Education in Laos	1.256	.3917	7.701	.011
			Proficiency in Reading Hmong	1.565	.3818	7.323	.012
Age			-.150	-.2826	4.735	.040	
Last Test		.582	Education in Laos	1.458	.4201	8.703	.007
			Proficiency in Reading Hmong	1.663	.3750	6.945	.014
			Proficiency in Reading Hmong	.911	.4548	8.752	.006
Core Words First Test	.416	Proficiency in Reading Lao	.952	.3425	4.964	.034	
		Age	-.129	-.4494	10.008	.004	
	Last Test	.436	Proficiency in Reading Hmong	.872	.4168	8.608	.007

primarily acquired through formal schooling and is thus highly correlated with education in Laos (.79)--occasionally exerts a significant influence.

These results, based on objective measures of language and literacy over time confirm what was suggested previously through the survey methodology and our prior ethnographic experience with the Hmong: the importance of background characteristics. Thus, although this longitudinal study is based on a relatively small sample of individuals, the findings provide some insight about the relative influence--that is, the interrelationships--of factors which affect adult second language acquisition. That literacy, age and previous education are influential in adult language learning is not surprising. These variables have long been thought to be important. But exploring why and how they are influential and why other background factors are not may help us to understand further the process of second language acquisition by adults.

The finding that age, and sometimes sex, continue to play a role in predicting English proficiency even after the effects of their correlation with other background experiences are statistically controlled suggests the continuing influence of those historical, social and cultural factors which enabled only certain members (primarily young men) of current young refugee communities to go to school when they lived in Laos. That is, the social expectation that young people (men, in particular) should go to school may be combining forces with the sense of inadequacy experienced by adults finding themselves in the midst of a totally different, complex, often unintelligible environment, and with the discouraging observation made by most parents that their children are learning faster and more than they are. Over and over again people expressed the belief that they were too old to learn (even though they were in their late 20s or mid 30s). The continuing influence of age as a predictor may also be simply a result of the still preliminary stage in which most Hmong adults find themselves in their acquisition

of English. Teenagers have arrived with more education and literacy than their parents and receive more concentrated schooling here. In addition, because of their rapidly increasing language and literacy skills, they are constantly being called upon by adults to use those skills. Thus, the idea that the young learn faster becomes a self-fulfilling prophecy.

One of the factors that is puzzling for its absence of influence is the amount of time individuals have been in the United States. While other background characteristics do predict acquisition, the passage of time in the U.S. per se does not appear to be a significant predictor. The reasons for this are not clear. The fact that time is not a predictor is not because individuals have stopped learning. The results reported here show acquisition taking place now--and these individuals have been here from 2 to 4 years.

Time is usually considered to be a significant factor in adult language acquisition because it is assumed to reflect the amount of individuals' linguistic input. But factors other than time may actually determine the amount of English input individuals receive. It is clear from our fieldwork that Hmong adults have very different opportunities for exposure to and use of the host language. Some Hmong have suggested, as one reason for not moving to areas of high Hmong concentrations in California, that the more heavily concentrated the Hmong population is in an area, the more socially isolated Hmong adults are from contacts with native English speakers. Following this theory, in areas like the Central Valley of California or the Twin Cities of Minnesota adults would have less social contact with native speakers. Self-reported data on social contacts with Americans by study families before and after the move to California have been gathered, but have yet to be analyzed. Ethnographic work after the longitudinal study found that individuals in a heavily Hmong community in California felt they had infrequent contacts with native English speakers.

Another characteristic conspicuous for the absence of its influence is the ability to speak Lao. A common assumption is that experience learning a second language can facilitate learning a third. Ervin-Tripp (1973:95), for example, speaks of different learning strategies based on different language acquisition experiences. In multivariate analyses of our data, fluency in Lao does not play a significant role at all. The point to ponder here is the finding that previous literacy--Hmong literacy--exerts more influence on acquisition of spoken English than does previous bilingualism. The relatively limited influence of literacy in Lao is less difficult to understand. Once the relationship of Lao literacy to education in Laos is statistically controlled, previous education appears as a more influential factor than literacy in Lao.

We are still at a preliminary stage in analyzing the relationship of literacy in Hmong to acquisition of English. The nature of this relationship is not quite as clear cut as that of some of the other background characteristics because acquisition of Hmong literacy is still taking place in this country: Forty-seven percent of those who reported themselves as literate in Hmong have learned it or are still learning it here in this country. There may be some levels of mutual influence between English acquisition and Hmong literacy. For example, it is possible that acquisition of English (if one learns the alphabet) could facilitate subsequent acquisition of Hmong literacy. However, considering these results together with the previous survey results and our ethnographic experience with the Hmong, it seems likely that the primary influence is in the other direction--that is, that Hmong literacy is affecting English acquisition.

There are several reasons why Hmong literacy might affect English acquisition. An obvious one is that both English and Hmong literacy (as practiced by this group of Hmong) use the Roman alphabet. For individuals literate in Hmong, the characters used to write English at least look familiar. But since the Roman Phonetic

Alphabet (RPA) orthography for Hmong does not represent the phonology of English, it is not clear how familiarity with the alphabet itself would foster acquisition of spoken English. Several possibilities come to mind. First, adults' acquisition of oral and written English may be so intertwined that the obvious advantage which the familiarity of the Roman alphabet seems to bestow on English literacy acquisition carries over to spoken English as well. Second, many Hmong participate in formal ESL training which relies heavily on the use of primers, worksheets, boardwork, and other written materials, so that those familiar with the alphabet may progress more quickly and benefit more from formal training. Third, as previously reported, Hmong adults use their native script actively as a tool in learning English--copying new material, transliterating its pronunciation, and translating it into Hmong. All of these applications of Hmong script are later studied at home. The social segregation of Hmong adults and their resulting isolation from native English speakers may well give a significant edge to those able to "study" English through the tool of Hmong literacy. If this is the case, the English proficiency gap between people literate in Hmong and those who are not might be expected to widen further in California.

Another kind of factor--an affective one--may be at work in the apparently powerful role of Hmong literacy in English language acquisition. Most individuals literate in Hmong script chose to become literate on a self-selected basis (in contrast, for example, to most of the individuals literate in Lao who were sent by others to school in Laos where Lao literacy was learned). Perhaps there is overlap between the motivations or aptitudes underlying acquisition of Hmong literacy and English; individuals who desire to learn Hmong script tend to be predisposed to learning English. The fact that many Hmong believe that literacy in Hmong script facilitates acquisition of English seems consistent with this line of explanation. In a surprising twist, the acquisition of native language literacy in Hmong may be

seen not as an indicator of interest in cultural maintenance, but of openness to change, if not assimilation.

### CONCLUSIONS

This longitudinal study set out to document English acquisition by a group of Hmong adults over a year's time and to explore the factors which appeared to be affecting their progress. Based on the three measures reported here, we found that acquisition was indeed taking place--that people were learning slowly, but still progressing 2 to 4 years after their arrival in this country. Individuals' relative positions within the group with regard to proficiency level remained much the same over time.

Both the experiences individuals have prior to coming to this country and their current activities are highly correlated with their English proficiency. Due to the ongoing nature of current activities (such as attending school, having American friends, speaking English at the store, etc.), it is difficult to isolate their mutual influences on one another. The causal relationship of background variables with English acquisition can be analyzed, however. Multivariate analyses indicate that certain background characteristics--especially proficiency in reading Hmong, age and education in Laos--are powerful predictors of English proficiency. Further data may identify the reasons why some variables seem to influence acquisition whereas others do not. As noted, many other measures not considered in this paper were gathered during the study. As the additional data are analyzed, particular attention will be paid to the apparently strong role played by literacy in Hmong and to the pervasive interaction between literacy and language acquisition.

## NOTES

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- 1 These figures were compiled for the longitudinal study population from the proficiencies reported in the household survey. Ensuing visits with these individuals indicated that more literacy in Hmong exists than was previously reported. This discrepancy is due in part to continuing acquisition of Hmong literacy in this country. These more recent data have yet to be fully analyzed.
- 2 The results of these background interviews have been presented in Reder, Green and Sweeney (1983) and in Reder, Green, Sweeney and Cohn (1983).
- 3 Developed by Smith (1971).

- 4 A Latin Square design was used to vary the order of administration randomly across subjects.
- 5 Each of the six sets of noncore items consisted of ten items randomly selected from the pictured vocabulary item sets and 15 items chosen from the literacy portfolio materials and other literacy artifacts in which these vocabulary items were more contextualized. The core words included five words from these last two sources and five easy words common in everyday life.
- 6 (Please put correlation table of scores and background characteristics here as footnote)
- 7 (Please put correlation table of scores and personal activities here as footnote)



Pearson Correlations of Scores\* by Personal Background Characteristics

Proficiency Measures	Age	Sex	Proficiency in Speaking Lao	Proficiency in Reading Mong	Proficiency in Reading Lao	Education in Laos	Education in U.S.**	Time in U.S.
<u>B.E.S.T.</u>								
First Test Total	-.58	.50	.32	.67	.63	.68	.56	.04
Last Test Total	-.54	.52	.30	.63	.56	.59	.61	.06
<u>Pictured Vocabulary</u>								
Moncore Words - First	-.53	.04	.02	.46	.50	.44	.64	.17
Moncore Words - Last	-.67	.15	-.01	.40	.44	.34	.66	.24
Core Words - First	-.66	-.03	-.05	.38	.41	.41	.59	.14
Core Words - Last	-.64	.10	.01	.38	.33	.34	.57	.04
<u>Written Vocabulary</u>								
Moncore Words - First	-.41	.39	.23	.60	.70	.78	.43	.13
Moncore Words - Last	-.40	.31	.12	.65	.64	.69	.52	.28
Core Words - First	-.45	.34	.08	.60	.55	.56	.64	.35
Core Words - Last	-.59	.22	-.06	.54	.51	.54	.58	.20

Note: Unless otherwise indicated, data on background characteristics were gathered during the household survey conducted in April and May 1981.

\*of individuals who took both first and last test

\*\*by the time of Assessment 2 (July and August 1982)

Person Correlations of Scores\* by Current Personal Activities

Proficiency Measures	Attending School Now or Within Last 2 Months	Have American Friends	Speak English With American Friends	Speak to Americans Daily	Speak English at the Store	Speak English to the Doctor
<b>B.E.S.T.</b>						
First Test Total	.55	.46	.49	.52	.63	.68
Last Test Total	.67	.38	.41	.58	.62	.58
<b>Pictured Vocabulary</b>						
Moncore Words - First	.47	.29	.34	.52	.30	.49
Moncore Words - Last	.51	.26	.29	.55	.21	.37
Core Words - First	.47	.32	.37	.45	.44	.36
Core Words - Last	.56	.29	.33	.48	.46	.41
<b>Written Vocabulary</b>						
Moncore Words - First	.45	.44	.49	.44	.55	.72
Moncore Words - Last	.52	.29	.32	.54	.49	.60
Core Words - First	.63	.38	.33	.60	.52	.49
Core Words - Last	.60	.32	.27	.47	.56	.47

\*of individuals who took both first and last test

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Page 2

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