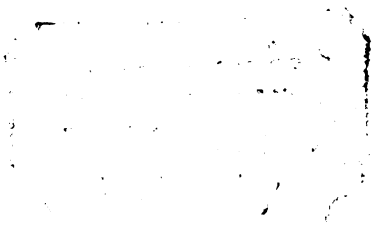

This is to certify that the

dissertation entitled

Learning Style Preferences
of ESL Students

presented by

Lorna LaVerne

has been accepted towards fulfillment
of the requirements for

Ph.D. degree in English

Paul C. Merrill
Major professor

Date August 12, 1981

LEARNING STYLE PREFERENCES OF ESL STUDENTS

By

Lorna LaVerne

A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
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ABSTRACT

LEARNING STYLE PREFERENCES OF ESL STUDENTS

By

Lorna LaVerne

This study was designed to measure specific learning strategies of adult students of English as a second language (ESL) along the dimension of analytic or synthetic learning style. The purpose was to determine whether a relationship exists between learning style and the following variables: degree of proficiency in English, amount of progress being made, language/cultural background, age, sex, roommate's language, study plans, and the length of time the student had been studying at the English Language Center (ELC).

The Learning Preference Opinionnaire, an instrument designed for this study, listed twenty-two specific language learning strategies which reflected either analysis or synthesis. The opinionnaire was presented to the 156 ELC students on all proficiency levels, along with a demographic data sheet. A measure of each student's English proficiency was also obtained. Data were gathered from a smaller group of eleven subjects by conducting three separate interviews with each student.

Analysis of the large group data showed the following: (1) the reliability of the Learning Preference Opinionnaire was .48 overall; .43 for the analysis items; and .69 for the synthesis items; (2) there was a moderate correlation

(r=.36) between learning style and level of proficiency; (3) there was no relationship between learning style and language/cultural background; (4) there were too few cases to allow for any testing of the relationship between learning style and prior experience in foreign language learning; (5) there was no relationship between learning style and age, time in the intensive program, progress, sex, study plans, or roommate's language.

The small group interviews tended to reflect these results and suggested that the following factors may have an influence on learning style preference: (1) previous contact with speakers of the target language; (2) exposure to the language as a means of communication; (3) the purpose for which the language is being learned; and (4) the context, formal or informal, for both the task and the learning process.

Further research is needed, both to refine the Learning Preference Opinionnaire and to try to explain variances not accounted for by learning style, perhaps by means of tests for such factors as aptitude, attitude and motivation, and other dimensions of cognitive style.

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CHAPTER I

REVIEW OF LITERATURE AND PURPOSE OF THE STUDY

A. Introduction

In 1973 a book was published which, along with many others, was aimed at language teachers; but unlike the others, it did not attempt to instruct the reader on the "best" language teaching methods or offer easy solutions to teaching problems. Its title was Focus on the Learner--and, as a sign of the coming shift in research attention, it emphasized language learners, not teachers, and it looked at their capacities, attitudes and learning strategies, as well as at what they learn (Oller and Richards 1973, vi).

Most of the previous research on foreign language learning had tended to focus on methodology. Carol Hosenfeld pointed out in 1979 that "a significant portion of the history of research in language teaching may be characterized as a search for instructional techniques that would lead to skill improvement" (Hosenfeld 1979, 51).

This attitude has changed significantly. In the past few years, the professional literature on second language learning has expanded its concern with teaching methods to

include concern with the learner, emphasizing that the learner plays an active role in language acquisition and language learning. As Gardner and Lambert (1972) ask, "How is it that some people can learn a foreign language quickly and expertly while others, given the same opportunities to learn, are utter failures?" (p. 1). It is probable that methodology, which is uniform for these learners, is less significant in answering this question than the individual differences among the students; in other words, the answer lies not in methodology but in the individual learner.

One major influence in this concern with the learner has undoubtedly been the contributions of applied linguists such as Roger Brown, Jean Berko-Gleason and many others in the field of child language acquisition, Heidi Dulay and Marina Burt in second language acquisition, and Kenneth Goodman, Frank Smith and others in their research on reading. Their confirmation that the learner plays a very active and creative role in the learning process has forced researchers to ask what precisely the learner does to learn a language.

Considerable recent research has also focused on the adult foreign language learner. After John and Francine Schumann kept journals of their language learning experiences, they concluded, "Our profession spends a good deal of time in teacher preparation, teacher training and teacher education. Perhaps second language learning might be improved by investing some time in learner preparation, learner training and learner education" (Schumann

and Schumann 1977, 249). Carol Hosenfeld agrees, and says that the essential question now is not "What must the teacher do to produce a given level of proficiency?" but rather "What must the student do to attain a given level of proficiency?" (Hosenfeld 1979, 52).

B. Major Variables

As pointed out in the introduction to this chapter, when different students are exposed to the same teaching methodology, some succeed while others do not. In attempting to determine what learner-related variables may be responsible for this, researchers have tended to focus on the following three areas: (1) affective variables; (2) cognitive and learning styles; and (3) learning environment.

1. Affective Variables

One school of thought, represented by Schumann (1975), Brown (1973) and others, made the assumption that differences in learner performance would most likely be accounted for by attitude, motivation, emotion, and other personality or psychological variables. As Len Sperry puts it: "...the focus has been on the learner qua person. When confronted with an intellectually capable learner whose performance failed to measure up to his supposed pctential,

psychologists and educators have tended to attribute this failure to an emotional block, a personality conflict or to social class factors" (Sperry 1972, 2).

Robert Gardner and Wallace Lambert believe that attitudes and motivation play an important role in the variations seen in second language learning. They point out that while factors such as aptitude and intelligence are relatively stable predictors of success, the importance of attitudinal measures is variable, depending on school district and social class. Their studies with English-speaking students learning French in Montreal have suggested that students with an "integrative" orientation are more successful in second language learning than those who are "instrumentally" oriented (Gardner and Lambert 1972, 4-5).

Joan Rubin and H.H. Stern also see affective variables as contributing to success in second language learning. Rubin says: "The good language learner is often not inhibited. He is willing to appear foolish if reasonable communication results" (Rubin 1975, 47). Stern agrees, and lists "a tolerant and outgoing approach to the target language and empathy with its speakers" among the features that he considers to mark good language learning (Stern 1975, 312).

2. Cognitive and Learning Styles

Other past research has focused on such cognitive factors as aptitude and general intelligence in attempting to

predict success in foreign language learning (Hancock 1975). The main instruments used to measure foreign language aptitude for the past twenty years have been the Modern Language Aptitude Test (Carroll 1959) and the Pimsleur Language Aptitude Battery (Pimsleur 1966).

More recently, other researchers have explored aspects of what has usually been referred to as cognitive or learning style. H. Douglas Brown refers to it as "a rather amorphous link between personality and cognition" (Brown 1980, 89). Kagan, Moss and Siegel see it as a set of "stable individual preferences in modes of perceptual organization and conceptual categorization of the external environment" (Kagan, Moss and Siegel 1963; in Sperry 1972, 4). The term has almost as many definitions as researchers; most agree, however, that it includes conceptual and perceptual tendencies that are both individual and consistent over time. Because of inconsistencies in the literature in the use of the terms cognitive style and learning style, this study has chosen the term "learning style" and will use it consistently to refer to both cognitive and learning styles. The term "learning strategies," as an interaction of learning style and learning environment, will be discussed later.

Dozens of different learning styles have been identified by educators and psychologists. Brown (1980) discusses several of these, including field dependence/independence; reflectivity/impulsivity; tolerance/intolerance of ambiguity; and broad/narrow category width.

These four learning styles in particular have been explored with regard to second language learning. In the Good Language Learner study, Naiman, et al. (1978) discovered the following: (1) field independence correlated positively and significantly with language "success" in the classroom; (2) tolerance of ambiguity was the other significant predictor of success in foreign language learning; and (3) there was no relationship between category width and success in French as a second language. In addition, a study by Doron in 1973 found that in reading, reflective students of English as a second language were slower, but more accurate than impulsive students (Brown 1980, 94).

Some interesting work has been done by Gloria Kuchinskas (1979), who discusses an important variable neglected by other researchers--the teacher's cognitive style. According to Kuchinskas, this influences the learning environment more than any other factor. Stern (1975) suggests that while good learners can adapt to almost any condition, poor learners are hard-hit by teaching methods inappropriate for them.

3. Learning Environment

Some of the most recent work on language learning has focused on the relationship between the learner and his/her environment. Bialystok (1979) distinguishes between characteristics of the learner (language learning aptitude, attitude, motivation, personality variables) and

characteristics of the learning situation (length of exposure to the language, teaching method employed). She states that variations in the rate of learning are greatly affected by the learner's ability to adapt efficiently to the learning situation.

In a more general study of learning, Dunn and Dunn (1978) found four types of variables that affect both children and adult learners. Two of these describe characteristics of the learner: the learner's own emotionality (motivation, persistence, responsibility, and need for structure or flexibility) and the learner's sociological preferences (working alone, in a pair, with peers or adults, or in various patterns). The other two variables describe characteristics of the learning situation: immediate environment (sound, light, temperature and physical design) and physical needs (perceptual strengths, intake, time of day and mobility). Strevens (1977) also lists physical factors, such as overcrowding and lack of books, among the many possible factors responsible for failure in language learning.

Some of Stephen Krashen's work (1976) has focused on whether the linguistic environment is formal (classroom instruction) or informal (out-of-class contact with native speakers). He takes the point of view that formal and informal environments contribute to different aspects of second language competence, i.e., informal environments affect acquired (or "natural") competence, whereas formal

environments affect learned competence of second language learners.

C. Learning Strategies

So far we have examined three major variables which appear to influence the language learning process: (1) affective variables; (2) cognitive and learning styles; and (3) learning environment. The first two of these are inherent in the learner, who then must adapt to the third variable, the environment, by using various strategies. It may well be that language learning success depends on the ability of the learner to make this adjustment. The model below shows the interaction of the learner and the learning environment; strategies are both consciously and unconsciously originated by the learner to cope with the environment.

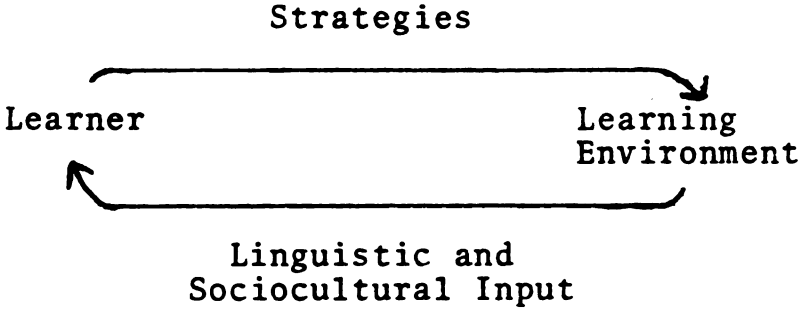

Figure 1. Interaction of Learner and Environment

Like the term "learning style," the term "learning strategies" has a number of different definitions. Joan Rubin calls learning strategies "the techniques or devices

which a learner may use to acquire knowledge " (Rubin 1975, 43). Bialystok describes them as "the optional methods for exploiting available information to increase the proficiency of second language learning" (Bialystok 1978, 76).

Bialystok and Frolich (1978) have tested the effects of aptitude, field independence, attitude and strategy use on achievement in language learning. They found that aptitude and field independence were related, as were strategy use and attitude, but that the two factors which affected achievement were aptitude and strategy use. Bialystok (1978) believes that the possible learning processes and strategies are the same for all learners, but that it is the efficiency with which they operate that accounts for differences between individual language learners.

Strategy use as a major factor in language learning success became an important research question after the publication of an article by Joan Rubin (1975) on "What the 'Good Language Learner' Can Teach Us." After extensive classroom observation and interviewing, she came up with a list of strategies which characterize the "good language learner," who: (1) is a good guesser; (2) has a drive to communicate; (3) is not inhibited; (4) attends to form; (5) practices; (6) monitors his own and others' speech; (7) attends to meaning; and (8) isolates cues and features which give maximum intelligibility. H.H. Stern (1975) proposes a similar list of strategies, on the basis of which he contrasts the good and the poor language learner.

The most extensive research to date on the good language learner is the work of Naiman, Frolich, Stern and Todesco (1978). Their subjects were English speakers learning French as a second language in Canada; all were given various tests in cognitive or learning style, language aptitude, personality, and so on, and several who had been identified as either "good" or "poor" language learners were interviewed in depth.

The Good Language Learner study sought to identify "(1) the strategies and techniques the learner consciously develops and employs, and (2) certain learner characteristics, in particular personality and cognitive style factors, which are likely to influence the use of strategies and techniques and thereby, indirectly, learning outcome" (Naiman, et al. 1978, 4). The authors modified a list of strategies suggested by Stern (1975) and analyzed their interview data according to five major strategies: (1) an active approach to the language learning task; (2) realization of language as a system; (3) realization of language as a means of communication and interaction; (4) management of affective demands; and (5) monitoring of L2 performance.

The researchers' hope was to identify differences between good and poor language learners in order to develop ways for the poor learner to overcome his/her difficulties. Many of the other factors which affect language learning tend not to vary; aptitude and field dependence/independence, for example, are inherent in the cognitive makeup of the learner, but they generally cannot be taught or modified

(Bialystok 1978; Gardner and Lambert 1972). It is possible, however, that strategies are teachable or variable to some extent (Brown 1980, 93).

Rubin (1975) says that by considering the strategies of good language learners, we may gain information on linguistic processes; ultimately, this information may form the basis for training other language learners to use successful strategies. Hosenfeld (1979) and Stern (1975) also see this as an important implication of "good language learner" studies.

D. Self-Reports of Learning Strategies

One technique used to obtain data on students' learning strategies has been to ask them to report on these strategies in an interview. Questions have been raised as to the accuracy of the information gained from such self-reports of learning. Naiman, et al. used self-reports successfully in the Good Language Learner study. Evidence that the learner does consciously monitor his/her language learning strategies has been provided by Krashen (1976 and 1977) and Bialystok (1978 and 1979), and both Rubin and Stern have included "monitoring" on their lists of strategies used by the good language learner.

Furthermore, some research has suggested that the learner's own perceptions of how he/she learns can be quite accurate, and that the learner is often able to predict

his/her own success in various types of learning. Farr (1971) showed that learners are able to predict the modalities (oral vs. written) in which they learn and achieve best. Domino (1970) grouped students in accordance with their perceptions of how they learned, and found that those who learned as they preferred scored higher on controlled tests.

Finally, there is the undeniable link between one's perceptions and their effect on one's emotions and attitudes. In a sense, this is a variation of the well-known "placebo effect" in medicine; patients who are given a placebo, but who <u>believe</u> they have been given a healing medicine, have often reported "miraculous" improvements in their condition.

In language learning as well, the learner's <u>perceptions</u> of a situation may be as influential as the situation itself. For example, William Acton (1979) has provided evidence that <u>perceived</u> social distance may be a more important factor in language learning than <u>actual</u> social distance.

In addition, both Francine and John Schumann (1977) reported that many of their language learning difficulties arose because of conflicts between what they perceived as good language learning techniques and what the teacher perceived as good ones. They refer to these perceptions and reactions to both the language class and the target culture as "personal variables" that affect second language acquisition and learning, and which can account for individual differences.

E. Areas Needing Research

The literature cited thus far has significantly increased our knowledge of the foreign language learning process. Various researchers have stressed the importance of affective variables, cognitive and learning styles, the learning environment, and the learner's strategies.

A key question being asked is whether a student's strategies will vary, and under what circumstances. Rubin suggests that learner strategies will vary with: (1) the task; (2) the learning stage; (3) the age of the learner; (4) the context; (5) individual styles; and (6) cultural differences in cognitive learning styles (Rubin 1975, 43). A similar suggestion is made by the Good Language Learner researchers: "Different classes of variables, identified in the present study--cognitive style, attitude, learning strategy--may be of varying importance at different stages of language learning and in different learning environments" (Naiman, et al. 1978, 101).

On the basis of these and similar comments in the literature, three variables have been chosen which seem to be in particular need of further research. These are: (1) learning stage, as described above by Naiman et al. and by Rubin; (2) cultural differences, suggested above by Rubin; and (3) previous foreign language learning experience, mentioned by Naiman, et al. and by Rubin.

1. Learning Stage

As Rubin has pointed out, "Language learners may in fact use different strategies at different points in time in the learning process" (1975, 48-9). Stern agrees, and adds, "Assuming the list identifies mainly the good learner at elementary and perhaps intermediate stages, is the advanced learner adequately covered by these strategies?" A similar point of view, that strategies are of varying importance at different stages of language learning, was stated by Naiman, et al. and was mentioned previously.

2. Cultural Differences

Another variable needing research, which to my knowledge has not been described empirically, is what Rubin has called "cultural differences in learning styles." She notes that "in some societies, listening until the entire code is absorbed and one can speak perfectly is a reported form of learning; in others successive approximation to native speech is used as a learning strategy; while in still others rote learning is the most common learning strategy" (Rubin 1975, 49).

3. Foreign Language Learning Experience

Foreign language learning experience, as suggested by Rubin (1975, 49), appears to be another important factor in language learning. It is noteworthy that all of the good language learners presented in case studies by Naiman, et al. had already had extensive foreign language learning experience. It is possible that their learning styles were affected by this previous experience, including the number and types of languages learned and the amount of time spent studying them.

F. Special Considerations Regarding Learning Strategies

As the learner tries to adapt to different learning environments, his/her strategies are likely to be affected by how he/she resolves two of what Stern has called "major problems of learning." One of these problems, according to Stern, is the "code-communication dilemma"; good language learners will at times have to attend to the code (formal language) and at other times to communication (functional language), whereas the poor learner avoids both. Another problem involves "the choice between rational and intuitive learning . . . whether the language learner should treat the language learning task intellectually, conceptually, and systematically as a mental problem, or whether he should avoid thinking about the language and absorb the language

more intuitively" (Stern 1975, 310-11).

In the Good Language Learner study, 68 percent of the 34 interviewees considered their language learning a highly conscious and systematic process, while 26 percent felt it comprised both conscious and unconscious elements. The two interviewees who saw language learning as a totally intuitive process were the unsuccessful learners (Naiman, et al. 1978, 11).

As Krashen (1976) has pointed out, formal and informal learning environments contribute to second language proficiency in different ways. This, combined with Stern's preoccupation with the code-communication dilemma, parallels a general sentiment both in and out of the field of language learning that a major distinction among learners is in the dimensions of rational processes vs. intuitive processes, or deductive vs. inductive reasoning, or analytic vs. synthetic approaches to learning.

It appears useful to limit the dimensions of this study to include learning strategies along a continuum of analysis (mainly conscious; concentration on code; language seen as a system) and synthesis (mainly intuitive; concentration on the whole meaning; language seen as a means of communication). Undoubtedly there are many other dimensions that fall along such a continuum, but the analysis/synthesis distinction appears to be one which captures a major source of the variability in language learning strategies.

G. Purpose of the Study

Recent research has indicated that a focus on students' learning styles and learning strategies--including their own feelings and beliefs about what helps them learn--can give useful and valid insights into both the learning process in general and the foreign language learning process in particular. Research needs which have been identified include: (1) learning stage (Rubin; Stern; Naiman, et al.); (2) learning strategies (Bialystok; Rubin; Stern; Naiman, et al.); (3) cultural differences in learning styles (Rubin); and (4) solving the dilemmas of code vs. communication and rational processes vs. intuitive processes (Stern; Naiman, et al.).

To date, however, no studies are available which deal with the learning styles of students of English as a second language (ESL) and the specific, conscious learning strategies which exemplify these styles. Research on the learning strategies of the second language learner has been carried out primarily with native English speakers learning French (Bialystok; Hosenfeld; Naiman, et al.). Krashen's work (1976) on formal and informal environments presents data on ESL learners, but not on the strategies they might use to cope with these different environments.

We may be able to take the work which has been done so far on learners of French and apply it to learners of other foreign languages. Nevertheless, there is a need to

accumulate separate data on the strategies of ESL learners from various countries and language groups. The purpose of this dissertation is to play a part in fulfilling this need by exploring the ways in which ESL students in the United States perceive various study strategies as valuable in moving them toward their goal of learning English.

These strategies are classified in terms of the analysis/synthesis continuum mentioned earlier, and the resulting composite of strategies is considered to be learning style. It is this learning style around which the hypotheses for this study are structured.

H. Hypotheses

The following are the hypotheses being tested by this study:

H1--Learning styles of students of English as a second language, as measured by an instrument designed for this study, will vary along with differences in English proficiency.

H2--Learning styles of ESL students, as measured by the same instrument, will vary according to language or cultural background.

H3--Learning styles of ESL students, as measured by this instrument, will vary along with differences in previous foreign language learning experience.

H4--Learning styles of ESL students, as measured by this instrument, will vary along with age, amount of time spent at the English Language Center, and progress made in a five-week period (numerical variables).

H5--Learning styles of ESL students, as measured by this instrument, will vary along with differences in sex, roommate, and program of study (categorical variables).

H6--Learning style variations among ESL students, as measured by the instrument designed for this study, will be reflected in case study data collected from a small group of students, using interviews, a miniature learning experience and ratings by teachers.

CHAPTER II

METHODOLOGY

A. Introduction and Overview

The previous chapter identified three areas in the field of foreign language learning which appear to need further research. These are: (1) learning stage; (2) cultural differences in learning styles; and (3) previous foreign language learning experience. The first three hypotheses of this study, listed at the end of that chapter, stated that the learning styles of ESL students, as measured by an instrument designed for this study, will vary along with differences in the three variables listed above. Two additional hypotheses stated that learning styles would vary along with differences in age, amount of time at the English Language Center, and progress (H4); and with differences in sex, roommate, and study plans (H5). The last hypothesis (H6) stated that variations in learning styles would be reflected in case study data collected from a small group of students.

To measure learning style, I developed an instrument asking students to indicate preferences for specific learning strategies. This instrument, called the Learning

Preference Opinionnaire (LPO), was given to a group of 156 students at Michigan State University's English Language Center at about the same time that they were given a proficiency test battery.

In addition, to provide background information and to attempt to validate the Learning Preference Opinionnaire, in-depth information was obtained from eleven students selected to represent three proficiency levels and three language groups.

B. Definitions of Terms

The following are definitions of the major terms used as they are understood in the context of this study.

Learning Strategy refers to the learner's attempt to cope with the learning environment. "Strategy" has been defined by Ellen Bialystok (1978, 71) as one of many "conscious attempts made by language learners to improve proficiency by a variety of means." In this study, the term "learning strategies" refers to the specific items on the Learning Preference Opinionnaire (e.g., "Memorizing grammar rules").

Learning Style is a composite of learning strategies. Although specific learning strategies may vary among individuals, they can be classified in terms of the dimensions of learning they represent; in this case, the dimensions are considered to lie on a continuum with analysis at one

end and synthesis at the other. The composite of a learner's strategies, in terms of these dimensions of learning, is considered to be that individual's learning style. In this study, learning style is expressed numerically by the Analysis/Synthesis Average, which will be referred to in this study as ASAVE.

Analysis means acting on language input by "taking it apart," looking at it systematically. Analysis may be associated with frequent monitoring of one's language output, and is characteristic of the conscious language learning by many adults. In this study, analysis is expressed numerically by a low score (ASAVE) on the Learning Preference Opinionnaire.

Synthesis means acting on language input by dealing with it holistically, "putting it all together." A learner who has internalized a language, or a native speaker of that language, is more likely to say that the language "sounds" or "feels" right rather than make that decision on the basis of a rule. Synthesis may be associated with lower use of monitoring (accompanied by reasonable accuracy) and is characteristic of language acquisition, in the unconscious, "natural" way described by Krashen. Synthesis is expressed numerically in this study by a high score (ASAVE) on the Learning Preference Opinionnaire.

ESL refers to English as a second language. In this study, ESL students are those who are studying English as a second (i.e., foreign) language in an intensive program

in the United States, specifically at Michigan State University's English Language Center.

ELC refers to the English Language Center at Michigan State University, which offers intensive programs in English to adults--both those enrolled at Michigan State University and those studying only the English language. The ELC offers classes in grammar, speaking and listening, reading, composition, and language laboratory at various levels of proficiency.

Proficiency refers to an ESL student's performance on a battery of tests developed and administered by Michigan State University, indicating whether he/she is a beginning level student or more advanced. In this study, proficiency is expressed numerically by the learner's position on a continuum from 0 to 100, with 100 representing native speaker proficiency. The test covers grammar, vocabulary, aural comprehension, reading comprehension, and composition.

Language/Cultural Background refers to a learner's membership in a group whose members share the same native language or country. There are times when such groupings reflect subjective decisions; for example, Spaniards and Mexicans might be grouped together on the basis of language although their cultures are quite different, and Mexicans and Brazilians might be grouped together on the basis of geography although they differ in both language and culture. The question of how to group people for purposes of data analysis was carefully considered in this study

and was resolved by running separate data analyses only for certain groups.

The groups of interest in this study are speakers of Spanish, Arabic, and Japanese. Besides representing very different languages and cultures, these are the largest groups at the English Language Center, each containing 29 or more students, and are typical of such groups enrolled in intensive English programs. The Spanish-speaking students are from several different Western hemisphere areas, including Mexico, the Caribbean, and South and Central America, with similar cultural patterns. The Arabic speakers are all from countries in the Middle East and speak Arabic as their native language. The Japanese speakers are only from Japan, and with 29 members, the Japanese group represents the largest number of ELC students from any single country.

These three groups were considered together with all others in analyses done on the group as a whole. Students who did not speak Arabic, Spanish or Japanese were considered only in analyses of the total population, and not separately, since there were not enough students from any one country to allow for any meaningful generalizations. Thus, in this study, "language/cultural background" will refer specifically only to Arabic, Spanish or Japanese speakers.

Foreign Language Learning Experience refers to fluency or near-fluency of ELC students in a language other than

their native language or English.

Time at the ELC is expressed specifically by the number of quarters the student has spent at the English Language Center at Michigan State University. Students were also asked how many years they had studied English in their home countries, but since that is often represented by two classes of English per week in high school, with the teacher speaking primarily in the native language, I felt that using the amount of time spent at the ELC as a "standard measurement" was the only alternative to the sometimes meaningless measure of "years of study."

Progress refers to the increase or decrease in ELC students' scores between the test given at the beginning of the term and the midterm exam given five weeks later.

Formal Setting refers to an in-class ESL setting, generally with the teacher exerting a large degree of control over the learning activities. While this study deals with both strategies of analysis and of synthesis, and while the questionnaire itself, for convenience, was administered in a formal setting (a classroom), an important premise of the study is that a student's learning style may vary depending on whether the setting is formal or informal.

Informal Setting refers to an out-of-class setting, in which an ESL student may pursue his/her language learning activities in any way he/she chooses, without the control or guidance of the teacher, and in a largely self-directed manner. In this study, students are asked to answer the

questions on the Learning Preference Opinionnaire while assuming that they would be pursuing their learning activities outside of class.

C. General Procedures

In order to test the hypotheses of this study, the following general procedures were used:

(1) A large group (N=156) of adult learners of ESL was selected from all levels of proficiency at the English Language Center. A small group of learners (N=11) was selected to represent three language/cultural groups and three levels of proficiency.

(2) The Learning Preference Opinionnaire was developed, then administered to the whole group; the results were computed for each student. Demographic information was also gathered along with the Learning Preference Opinionnaire. The LPO was administered to the large group just before the students took their midterm examination, in order to have an estimate of their language proficiency at about the same time as the measurement of their preferences for learning strategies. The proficiency measure used was a battery of tests developed by the English Language Center and included sections on grammar, vocabulary, aural comprehension, reading comprehension, and composition.

(3) In addition to being given the above instruments, the small group subjects participated in an interview

based on the Adult Interview Questionnaire from the Good Language Learner study (Naiman, et al. 1978, 106-9), which gathered information on their language learning backgrounds. They were also given a miniature lesson that required them to read a passage and comment on it. In addition, an attempt was made to gather information on each student's learning behavior by interviewing at least two of his/her teachers.

D. Instrumentation

The following are descriptions of: (1) instruments used in the large group; and (2) instruments used in the small group. All but the proficiency test are in the appendices.

1. Large Group Instruments

The Learning Preference Opinionnaire was developed for this study in order to measure a student's learning style in terms of his/her average on a continuum of analysis or synthesis. There were four stages in its development:

(1) A pilot form of the instrument was used with 68 ELC students who were not in the main study.

(2) The items which appeared to offer a spread of responses were then selected, and additional items were added to the list.

(3) This list was then offered to the professional staff of the English Language Center with the request that

they comment on the items or edit them.

(4) The revised list was then re-edited by faculty members of the English Language Center and the English Department.

Throughout the development process, the analysis/synthesis scale was seen as the integral dimension along which the responses would probably range. Therefore, half of the items were structured so that a positive response would reflect the analysis dimension, and the other half so that a positive response would reflect the synthesis dimension. Thus there would not be a bias toward one type of response or the other, and both types of learning would be equally represented.

All items, however, were envisioned as being part of the same total scale, and the only difference between the analysis and synthesis items was considered to be the direction in which the response lay, not in the content of the item; on a five-point scale, "1" was considered a positive response and "5" was considered a negative response for all items. For example, if a student made a negative response on an item such as "Reading to get the general meaning," which reflects the synthesis dimension, that negative response would indicate a positive analytical strategy. In other words, even though an item may reflect one dimension or the other, it would still give an analysis/synthesis range, that is, a negative response on one dimension would be equivalent to a positive response on the other.

Reliability of the LPO was unknown at the time of its administration. A later reliability analysis using Cronbach's Alpha reliability coefficients yielded coefficients of .48 for the analysis items, .69 for the synthesis items, and an overall coefficient of .49. The significance of these figures will be discussed further in the chapter on analysis of the large group data.

The proficiency test battery, developed by the English Language Center, tests students in grammar and vocabulary, listening comprehension, reading, and composition, with the grammar and vocabulary portion being given a combined score. The Kuder-Richardson 20 reliability of the grammar-vocabulary test is .93; for the listening test, .88; for the reading test, .87; and for the composition test, .80. The estimated overall reliability for the test battery is over .95.

Validity studies for this test are indirect, based largely on (1) the accuracy with which the test appears to place students in groups at the English Language Center; (2) the correlation of this test with other nationally normed proficiency tests; and (3) the success with which it predicts which students will be able to function linguistically in their academic programs at Michigan State University. The scores on this test range from 35 to 95 out of 100 possible points, with 80 points or above usually considered the acceptable criterion level for proficiency.

A demographic information sheet was given to the large group along with the Learning Preference Opinionnaire. The

subjects were asked to complete this form, which requested a variety of demographic data to serve as variables in Hypotheses 2 (language/cultural background), 3 (foreign language learning experience), 4 (age and amount of time at the ELC) and 5 (sex, roommate, and study plans).

2. Small Group Instruments

The proficiency test, the LPO and the demographic data sheet were also used with the small group. However, four additional instruments were used in gathering small group data. All but the reading selection are in the appendices.

The language background questionnaire was a modified version of the Adult Interview Questionnaire used by Naiman, et al. in the Good Language Learner study (1978). It asked students a series of questions designed to shed light on their language learning experiences, and also elicited their ideas about learning a new language.

The language of certain questions on the Adult Interview Questionnaire was found to be somewhat idiomatic, and most of the changes involved simplification. It was also found that in all but one case, questions which suggested that the learner may be multilingual were irrelevant to the subjects, nearly all of whom were monolingual before they came to the United States. Naiman et al. emphasize the "possible advantage of the interview as an alternative means of obtaining the same information as standardized tests of

personality and attitude, but at greater depth and without the disadvantage of test procedures" (Naiman et al. 1978, 101).

The reading task checklist was used during a mini-lesson in which students were asked to read an article and comment on it. The checklist was used to aid in evaluating whether their behavior and level of comprehension reflected analytic or synthetic dimensions of learning.

The reading task selection, on which the reading task was based, was a short article from the student newspaper News for You dealing with the results of an earthquake in Italy. The newspaper, which uses somewhat simplified language, is used in adult literacy classes in the U.S.

The teacher evaluation checklist was used while interviewing at least two teachers for each case study subject. The teachers were asked to characterize their students as learners, using criteria such as attention to form vs. attention to meaning. I then used the checklist as an aid in rating the analysis or synthesis tendencies of each student.

E. Selection of Subjects

The subjects who participated in this study consisted of both a large and a small group; the large group was made up of 156 adult foreign students enrolled in all levels at the English Language Center of Michigan State University,

and the small group contained eleven of these students who had been selected for in-depth interviews.

The 156 subjects in the large group represented 38 different countries and collectively spoke over 28 languages. There were 111 males and 45 females, whose levels of proficiency ranged from elementary to very advanced. Because a major assumption of this study was that learning style would change as a student became more proficient in English, it was necessary to include the elementary level students in the large group even though their English was limited. Special administration procedures are discussed in the appropriate section of this study.

Subjects for the small group were chosen to represent the three largest native language groups at the ELC: Arabic (44), Spanish (32) and Japanese (29). It was also desired to represent various levels of English proficiency within each group, so nine interviewees were selected, representing low, intermediate and high proficiency Arabic speakers; low, intermediate and high proficiency Spanish speakers; and low, intermediate and high proficiency Japanese speakers. The subjects, chosen from a list provided by the foreign student counselor, were described by several teachers as likely to be enthusiastic and cooperative. In two cases--intermediate proficiency Spanish speaker and high proficiency Spanish speaker--it appeared for a time that the subjects would be unable to continue their participation, and new subjects were recruited. However, all

subjects completed their interviews, and the study was finished with two extra Spanish-speaking subjects for a total of eleven interviewees. Each language group was also represented by at least one female and two males.

F. Procedures for Administration of Instruments

1. Large Group Procedures

The Learning Preference Opinionnaire was administered as follows: (1) the LPO was administered only in English; (2) an overhead projector was used to display a large copy of the LPO for purposes of explanation; (3) the individual classroom teacher and I provided as much individual help as possible; (4) if necessary, students could make comments on the questionnaire in their native language; and (5) students were asked to imagine themselves in an out-of-class situation and to respond to the questionnaire as if they were working on their own to learn English.

The proficiency test battery was administered by the staff of the English Language Center in accordance with their regular procedures in the middle of the term, after which the scoring and distribution of scores were handled by the ELC testing office and the results made available for this research.

Demographic information was gathered by asking students to fill out a data sheet which was attached to the

opinionnaire and administered along with it. No particular instructions were provided other than those given during the general administration of the LPO.

2. Small Group Procedures

In addition to using the LPO, the proficiency test battery and the demographic data sheet as described for the large group, I gathered small group data as described below.

The LPO-based interview was spent discussing each strategy on the LPO in some detail. Students were asked to explain why they considered certain strategies to be useful or not useful, and were encouraged to elaborate.

The Language background questionnaire, used during the second interview, contained a series of questions on language learning background based on the Adult Interview Questionnaire of the Good Language Learner study. Unlike the Learning Preference Opinionnaire, which asked about specific strategies, the language background questionnaire asked subjects directly about their learning styles (e.g., preference for a systematic vs. an intuitive approach).

The reading task provided the basis for the third and last interview. Each subject was given a simplified news item about a recent major earthquake in Italy and was asked to read it and do whatever was necessary to understand it, such as guessing at new words in context, or using either an English-only or a bilingual dictionary. The atmosphere

was intentionally informal, since the LPO had already been considered in an out-of-class context. The students were not overtly instructed to read for facts or recall, but just to get the general meaning. They were then asked to relate as much as they could remember about the story, and the reading task checklist was used to note my observations of things such as their comprehension and their care in reading.

The teacher evaluation checklist was used while gathering information during informal conversations with several of the interviewees' classroom teachers. An attempt was made to contact at least two teachers for each small group subject. The teachers were asked to characterize their students as language learners in general, and to comment on such aspects of learning as fluency vs. accuracy, attention to form vs. attention to meaning, and the student's dependence on his/her native language.

G. Analysis of Data

The two types of treatment used in the analysis of data for the large group were: (1) special scoring procedures; and (2) statistical analyses, as described below. A third type of treatment was applied to the data from the small group interviews and will be described later.

1. Special Scoring Procedures

Since the five-point answer scale on the Learning Preference Opinionnaire indicated whether the subject felt each strategy was useful (#1) or not useful (#5), a positive response (a low score) for eleven of the items would indicate a high preference for synthesis, and a positive response (a low score) for the other eleven items would indicate a high preference for analysis (i.e., a low preference for synthesis). As a result, the eleven items reflecting a preference for synthesis had to be transformed so that the students would receive a high score for all items showing a preference for synthesis, even if the response was #1 or #2. This adjustment was done by computer, and in all statistical analyses a lower score indicated preference for analysis and a high score indicated preference for synthesis.

The responses on the twenty-two items were then added together into an overall total score. In addition, to determine a smaller working number (the Analysis/Synthesis Average) that represented the learning style, I divided this total by the number of valid responses for each student (i.e., questions not answered were not included when computing the average). In other words, the total score was divided by the number of questions the student answered to give each student's Analysis/Synthesis Average, or ASAVE.

The proficiency test battery was scored according to the normal procedures of the ELC Testing Office; at the

time of the study, both initial and midterm scores for each student were made available for this research. A progress score was then computed for each student by subtracting the average score for the first test from the average score for the second (midterm) test. For the convenience of the statistical procedures that were to be used in the analysis of the data, the progress scores were grouped into five ranges of progress, from low to high.

Demographic data obtained along with the responses on the LPO were numerically coded for use in the statistical analyses, and will be discussed in more detail in the following chapters.

2. Statistical Treatment of the Large Group Data

Responses from the Learning Preference Opinionnaire and the demographic data sheet were coded onto computer data sheets, after which data cards were punched by the Test Scoring Office at Michigan State University. All computer programs used were from the Statistical Package for the Social Sciences (SPSS).

The following statistical analyses were applied to the data from the LPO:

(1) Cronbach's Alpha reliability coefficients were calculated for the analysis items alone, for the synthesis items alone, and for the LPO as a whole.

(2) Pearson Product-Moment correlation coefficients

were calculated to show the relationship between ASAVE and (a) proficiency, (b) age, (c) time at the ELC, and (d) progress, in order to test Hypotheses 1 and 4.

(3) Regression analyses were run for both the whole population and for the following subpopulations: language group (Arabic, Japanese or Spanish); sex (male or female); roommate's language (English, same native language, or no roommate); and study plans (English only, or academic program); these regression analyses permitted the testing of Hypotheses 2 and 5.

(4) Analyses of variance and covariance were used as an additional means of testing Hypotheses 1, 2, 4 and 5.

However, it turned out to be impossible to test Hypothesis 3 in this study. Hypothesis 3 states that learning style as measured by the LPO will vary according to differences in previous foreign language learning experience. A frequency count on the demographic data showed that there simply were not enough cases to allow this factor to be investigated.

3. Analysis of Small Group Data

An attempt was made to measure formally the responses of the small group interviewees during the investigation by assigning a score to all four aspects of it (the ASAVE, the LPO interview, the language background interview and the reading task). A chart was prepared evaluating data from

these four areas in terms of a tendency toward analysis or synthesis. This was done with an eye toward determining the validity of the Learning Preference Opinionnaire by attempting to calculate an independent learning style score that could be compared with the Analysis/Synthesis Average.

H. Summary

This chapter has defined the principal terms used in this study, and has described the general procedures followed and the instruments used. A discussion of the selection of subjects was followed by a description of administration procedures and analytical treatment of the data.

CHAPTER III

ANALYSIS OF LARGE GROUP DATA

A. Introduction and Overview

This chapter presents the results of analyses of the data gathered during the administration of the Learning Preference Opinionnaire to the large group. The first part of the chapter presents a description of how the LPO was scored; the means and the standard deviations for the whole group and for the language/culture groups used in this study; and the estimates of reliability for the opinionnaire and for the separate analysis and synthesis scales. In the second part of the chapter, the results of various statistical analyses are reviewed in terms of whether or not they appear to confirm the first five hypotheses of this study as listed at the end of Chapter I.

B. Results of the Administration of the Opinionnaire

1. Scoring of the Learning Preference Opinionnaire

As discussed in Chapter II, the LPO was administered to a total of 156 students in the regular classes at the

English Language Center. The twenty-two responses of each student, which were made directly on the Opinionnaire, were then transferred to data sheets and scored by machine.

As mentioned in the preceding chapter, on eleven of the items, a positive response was associated with a high preference for synthesis; on the other eleven items, a positive response was associated with a high preference for analysis. Therefore, in order to have a continuous scale from analysis to synthesis, with the low end of the scale consistently representing analysis and the high end of the scale consistently representing synthesis, the synthesis items were transformed as follows:

(1) was assigned a value of 5
(2) was assigned a value of 4
(3) was assigned a value of 3
(4) was assigned a value of 2
(5) was assigned a value of 1

The total score and the Analysis/Synthesis Average are not shown separately for each of the 156 subjects, but were included in all of the statistical procedures used in the study. The mean Analysis/Synthesis Averages and the standard deviations are recorded in Table 1, both for the whole group and for the three language/cultural groups of interest.

Table 1. Analysis/Synthesis Average (ASAVE)

Population	N	Variable	Mean	SD
Whole Group	156	ASAVE	3.19	.33
Arabic	44	ASAVE	3.14	.36
Spanish	32	ASAVE	3.17	.36
Japanese	29	ASAVE	3.13	.29
Others	51	ASAVE	3.29	.30

The interpretation of these figures will be included in the discussion of the hypotheses, but it should be pointed out that while the ASAVE is somewhat higher for the miscellaneous "other languages," no meaningful conclusions can be drawn since this group contains no more than ten members from any one language group; most of the languages represented in this group have only three or four speakers at the ELC, not enough to justify any separate implications regarding ASAVE.

It is readily apparent that the mean response was in the center of the range, and showed little tendency toward either synthesis or analysis. One possible explanation for this result is that students appeared to have a strong tendency to choose the positive or "yes" response to the items. Since in half of the items this represented a score of five, and in the other half of the items it represented a score of one, the average tended to fall in the middle. As evidence of this interpretation, it was common for students to say during the administration of the LPO, "All of these are useful!" In other words, students tended to say that the strategies listed were "useful," whether they represented analytic or synthetic learning strategies.

2. Reliability of the Learning Preference Opinionnaire

In order to evaluate the usefulness of the Learning Preference Opinionnaire as a measuring instrument, a

Cronbach's Alpha reliability test was run, yielding alpha reliability coefficients. This particular formula was chosen because it could be applied to a single administration of the LPO.

Reliability coefficients were obtained for three separate scales: the analysis items alone, the synthesis items alone, and the complete opinionnaire with analysis and synthesis items together. The Cronbach's Alpha reliability coefficient for the instrument as a whole was .48--a fairly respectable coefficient for a new, untested instrument, but not high enough to allow for the type of definitive statements about learning style we would like to be able to make.

Overall, analysis and synthesis items correlated negatively with each other, as expected. However, the point of interest here lies in the reliability coefficients for the separate analysis and synthesis scales. The reliability for the analysis items alone was .43; on the other hand, the synthesis items alone yielded a coefficient of .69. These results were surprising in view of the fact that all twenty-two items were initially thought of as measuring the same variable of learning. As it turned out, however, the two halves of the instrument behaved differently. The analysis items generally did not correlate well with each other even within that half of the LPO, whereas only one synthesis item (#16) correlated negatively with the other synthesis items.

Further consideration of the items revealed that if

item #16 were eliminated from the synthesis scale, the remaining items on that scale represented the ten best items on the questionnaire. It was then found that if these ten items were used exclusively, a reliability coefficient of .72 could be obtained with this instrument.

C. Results of Statistical Studies

To test the hypotheses, the following statistical procedures were used: (1) regression equations were used to determine the Pearson Product-Moment correlation coefficients used to describe the interrelationships among variables; and (2) analysis of variance and analysis of covariance procedures were used when the data were not linear.

Since the variables in a regression equation must be continuous (numerical), the Analysis/Synthesis Average (ASAVE) was chosen as the dependent variable in the regression analyses used for this study; proficiency, age, amount of time at the ELC, and progress functioned as the independent variables. These analyses tested Hypotheses 1 and 4.

The other type of variable, one for which a numerical value would have no meaning, is called a categorical variable. The categorical variables in this study (language/cultural group, sex, roommate's language, and study plans) were handled in two ways: (1) separate regression analyses were run for each of the subpopulations of interest; and (2) analyses of variance were used to determine the effects

of categorical variables on continuous ones, e.g., the effect of language/cultural group on ASAVE. These two approaches were used to test Hypotheses 2 and 5.

The first hypothesis to be reported on, however, will be Hypothesis 3, which states that learning style preferences of ESL students, as measured by an instrument (the LPO) designed for this study, will vary along with differences in previous foreign language learning experience. Results of a frequency count showed that only 20 of the 156 students in the total population spoke another foreign language; nearly all of these were Europeans, a very small percentage of the ELC population. Since such a small sample would not permit justification of any speculations which might be made about it, I concluded that it would not be possible to test Hypothesis 3 within the context of this study.

As previously mentioned, regression analyses were used to test Hypothesis 1, which states that ASAVE will vary along with differences in proficiency; and Hypothesis 4, which states that ASAVE will vary along with differences in age, amount of time at the ELC, and progress. From these analyses, Pearson Product-Moment correlation coefficients were obtained showing the relationship between ASAVE and the variables of proficiency, age, time at the ELC, and progress. These are displayed in Table 2, along with an indication of statistical significance (p values).

Table 2. Correlation of ASAVE with Proficiency, Age, Time at the ELC, and Progress (whole group)

Variable	Simple r with ASAVE
Proficiency	.36**
Age	-.05
Time at ELC	.09
Progress	-.03

**p <.01 (highly significant)

The simple r-correlations show that there is a moderate but statistically significant correlation between ASAVE and proficiency for the population of 156 ELC students, and no meaningful correlation between ASAVE and the other variables. In other words, two conclusions can be drawn from these data: (1) students who scored higher in English proficiency also tended to have higher Analysis/Synthesis Averages (i.e., a greater tendency toward synthesis); and (2) proficiency was the only variable which had any significant correlation with ASAVE. Since age, time at the ELC, and progress show no significant correlation with analysis or synthesis, they will not be included in future tables showing results of the statistical analyses, and will only be mentioned where relevant. In summary, Hypothesis 1, stating that ASAVE will vary along with differences in proficiency, is moderately confirmed in this study. Hypothesis 4, stating that ASAVE will vary along with differences in age, time at the ELC, and progress, is not confirmed.

Hypothesis 2, stating that learning style as expressed

by ASAVE will vary along with differences in language/ cultural background, was first tested by running separate regression analyses for the three subpopulations of interest, i.e., speakers of Arabic, Spanish or Japanese. Again, proficiency proved to be the only variable which had significance. Table 3 illustrates both the simple r-correlations for these subpopulations and the percentage of the variance in ASAVE that is accounted for by proficiency, using the generally accepted calculation that the percentage of the variance is expressed by the statistic multiple r square.

Table 3. Correlations of ASAVE with Proficiency According to Language/Culture Populations

Population	N	Variable	Simple r	Multiple RSQ
Whole Group	156	Proficiency	.36**	.13
Arabic	44	Proficiency	.30[1]	.09
Spanish	32	Proficiency	.54*	.29
Japanese	29	Proficiency	.48*	.23
Other	51	Proficiency	.16	.03

**$p < .01$ *$p < .05$ [1]$.05 < p < .10$

Although Arabic speakers show a small correlation between proficiency and ASAVE, it is considerably smaller than those obtained for most other groups and is not statistically meaningful. Spanish and Japanese speakers, on the other hand, show correlations between proficiency and ASAVE which are even higher than those for the population as a whole, and which are also statistically significant. In other words, for Spanish and Japanese speakers,

proficiency in English appears to be correlated with analysis or synthesis; the higher the subject's proficiency in English, the more likely he/she is to have a synthesis-oriented approach to language learning.

However, the reader should interpret these figures with caution, in spite of the statistical significance. Generally, a significance value (p value) of .05 would indicate, for example, that the chances are 95 out of 100 that the correlation is present; however, it may not necessarily be meaningful. Table 3 has shown that for the whole population there is an ASAVE-proficiency correlation of .36, which has a high statistical significance. However, it also shows that proficiency only accounts for 13 percent of the variance in ASAVE, meaning that the other 87 percent has to be explained by other factors.

Comparison of the variances for the different language/cultural subpopulations indicates that for Spanish and Japanese speakers, proficiency appears to be a stronger indicator of ASAVE than it is for Arabic speakers. However, with such a wide range in the variances, it is hard to draw any meaningful conclusions about specific groups.

The results of these regression analyses raise several questions about the nature of the relationship between language/cultural background and ASAVE. To discover whether the differences between groups actually had any effect on ASAVE once proficiency had been accounted for, I performed an analysis of covariance with ASAVE as the

dependent variable and proficiency as the covariate; the table is shown in Appendix E. The results indicated that once proficiency has been taken into consideration, we cannot predict whether an ESL student's learning style will be analytical or synthetic on the basis of where he/she comes from; that is, language/cultural group is not a significant factor in accounting for analysis or synthesis, and Hypothesis 2 is not confirmed.

One additional point might be made here--that the analysis of covariance did not show whether culture was related to ASAVE if the data were not controlled for proficiency, so two separate one-way analyses of variance were done to discover whether language/cultural group by itself had any relationship to ASAVE alone or to proficiency alone. The results (see Appendix E) indicated that culture had a significant relationship to proficiency, but only a marginal relationship to ASAVE, suggesting that members of the same group tended to fall into the same part of the proficiency scale. The data seem to support the suggestion that the various language/cultural groups differed in levels of proficiency at the English Language Center, and that it was this difference in proficiency, rather than their membership in the language group, that accounted for the variability of the data summarized in Table 3. Thus, we continue to conclude that Hypothesis 2 is not confirmed.

Hypothesis 5, stating that ASAVE will vary along with differences in sex, language spoken at home with one's

roommate, and plans to study either English or academic subjects, was tested in the same way as Hypothesis 2, that is, by subjecting the data to regression analyses according to these subpopulations. The results followed the same pattern that showed proficiency to be the only one of the independent variables significantly related to ASAVE, while age, time at the ELC, and progress did not appear to show any correlation. Table 4 shows the simple r-correlations between ASAVE and proficiency for these subpopulations, along with the percent of the variance (multiple r squared) accounted for in each group.

Table 4. Correlations of ASAVE and Proficiency According to Sex, Roommate and Study

Population	N	Variable	Simple r	Multiple RSQ
Male	111	Proficiency	.37**	.14
Female	44	Proficiency	.38**	.14
English Language Roommate	70	Proficiency	.45**	.20
Native Language Roommate	62	Proficiency	.22[1]	.05
Living Alone	22	Proficiency	.46*	.21
Academic Studies	122	Proficiency	.32**	.11
English Only	32	Proficiency	.50**	.25

**$p < .01$ *$p < .05$ [1] $.05 < p < .10$

The ASAVE-proficiency correlation was nearly identical for both males and females, and in both cases accounted for just fourteen percent of the variance. When analyzed by roommate and by study plans, however, the data show some interesting variations between groups. Subjects who either had English-speaking roommates or lived alone had ASAVE-proficiency correlations that were twice as high as those for subjects who spoke their native language with their roommates or spouses, as illustrated in Table 4.

One interpretation, therefore, is that for subjects who regularly speak their native language at home, the relationship between their ASAVE and their level of proficiency is not as strong as it is for those who speak English at home or who live alone. The reasons for this tendency cannot be determined from the data; with variances ranging from five to twenty-five percent, no meaningful conclusions can be drawn regarding the learning styles of these groups.

The ASAVE-proficiency correlations are also interesting in that for subjects studying English only, the correlation is somewhat higher ($r=.50$) than for those planning to pursue academic studies ($r=.32$), implying that advanced level English-only students lean slightly more toward synthesis than the other students. It is possible that the students who will be enrolled at the university would fit Gardner and Lambert's description of "instrumentally oriented" students in that they must attain proficiency in English before they can begin their academic studies. On the other

hand, it seems likely that those who are studying English only--presumably for its own sake--would be more "integratively oriented" (Gardner and Lambert 1972), and would therefore prefer more synthetic learning strategies. This speculation would have to be explored by first gathering data on attitudes and motivation for this population.

As with the subpopulations based on language/cultural group, analyses of covariance were performed to test for the effects of sex, roommate's language, and study plans while controlling the proficiency factor. The results (see Appendix E) support the conclusion that these variables are not significant in predicting a student's analytic/synthetic learning style, and Hypothesis 5 is not confirmed.

In interpreting all of these statistical analyses, the reader is advised to use extreme caution, not only because the ASAVE-proficiency correlation explains such a small percentage of the variance, but also because of the variations in group size. For example, in interpreting the data on roommate's language from Table 4, the reader should note that there were only 32 subjects in the English group, compared to 122 in the academic studies group, and the former is not a sufficiently large number to justify any major conclusions.

It was also found that the correlations tended to be very sensitive to group size, and that the addition or subtraction of only a few members of a group often affected the correlations and their levels of significance.

D. Summary

This chapter reviewed the results of the administration of the Learning Preference Opinionnaire in terms of (1) special scoring procedures, and (2) reliability coefficients obtained for the instrument; it then presented the results of the statistical analyses performed on the data for the large group.

Regression analyses on the whole group and on each subpopulation consistently showed proficiency to be the only variable which correlated significantly with ASAVE. Analyses of covariance on the whole group and on the subpopulations supported these conclusions: (1) that there is a significant correlation between ASAVE and proficiency level in English; (2) that there is no correlation between ASAVE and age, time at the ELC, and progress; and (3) that when the data are controlled for proficiency, categorical variables such as language/cultural group, sex, roommate, and study plans have no separate effect on analysis or synthesis tendencies in learning English as a foreign language.

In terms of the hypotheses, then, only Hypothesis 1 is confirmed, namely, that learning style as expressed by ASAVE will vary along with differences in proficiency in English. Hypothesis 2, that ASAVE will vary along with differences in language/cultural group, is not confirmed. Hypothesis 3, that ASAVE will vary along with differences in previous foreign language learning experience, could not

be tested in this study due to an insufficient number of cases. Hypothesis 4, that ASAVE will vary along with differences in age, amount of time at the ELC, and progress, was not confirmed; nor was Hypothesis 5, that ASAVE will vary along with differences in sex, language spoken with one's roommate or spouse, and study plans.

CHAPTER IV

RESULTS OF SMALL GROUP INTERVIEWS

A. Introduction

In the analysis of group data, a small but significant correlation emerged between English proficiency and the Analysis/Synthesis Average. It was also apparent that when the data are controlled for proficiency, language/cultural group does not have a significant effect on ASAVE. Given these results, what other variables might affect ASAVE? Or--to approach the subject another way--what is it that people from various cultures might do which might affect their learning style or which might aid them in reaching a certain level of proficiency?

To explore this question in more detail, I interviewed eleven students in depth about their language backgrounds and learning strategies. These subjects represented the three largest language/cultural groups (Arabic, Spanish and Japanese speakers) and levels of English proficiency ranging from lower intermediate (fifty-three points) to very advanced (eighty-seven points). At least one member of each language group was female; the single students usually had American roommates, while the married students usually

had spouses from their countries; some were studying English only, and others were enrolled or planning to enroll in an academic program. They are identified by a code indicating their language group (A=Arabic, S=Spanish, J=Japanese) and proficiency level (1=Lower, 2=Intermediate, 3=Advanced). In this way, the most important demographic information is conveyed each time a student is mentioned, e.g., A2 is an intermediate level Arabic speaker, S3A is one of the two advanced level Spanish speakers, and so on.

B. Results of Interviews

The information in this chapter is analyzed according to topics of discussion rather than on a case by case basis, so at this point, each subject will be introduced rather briefly.

A1, a 29-year-old married male, plans to study art education after learning English. It is of special interest that he has only minimal vision in one eye and none in the other.

A2, a 28-year-old married female with three children, plans to study interior design.

A3, a 22-year-old single male, plans to study civil engineering. He is the only interviewee who is fluent in another foreign language, having been bilingual in French since early childhood.

S1, a 20-year-old married female, plans to study English only.

S2A, a 22-year-old female who is studying English only, is unusual among the ELC students in that she is married to an American who speaks no Spanish.

S2B, a 30-year-old single male, is planning to major in mathematics, and is the only one of the interviewees who lives alone.

S3A, a 33-year-old married male, will major in personnel administration. He is one of the two interviewees who had made unusually fast progress in English during the previous term.

S3B is the other "fast learner" in the group. He is a 27-year-old married male who plans to study computer science.

J1 is a 27-year-old single male who would like to study business administration, but who still has trouble speaking and understanding English.

J2, a 25-year-old single male, is studying only English. His plans are to see America by enrolling in various ESL programs in different parts of the country.

J3, a 24-year-old single female, plans to study economics. She is the only interviewee who had a fair amount of direct contact with Americans before coming to the United States.

As can be seen in Table 5, subgroupings of the interviewees according to sex, language spoken with roommates or spouses, and study plans reflect approximately the same percentages of members in each category as the large group did.

Table 5. Demographic Data on Interviewees

A. Sex

Males: A1, A3, J1, J2, S2B, S3A, S3B
Females: S1, S2A, A2, J3

B. Language Spoken at Home

English: J1, J2, J3, S2A, A3
Native Language: A1, A2, S1, S3A, S3B
Living Alone: S2B

C. Study Plans

Academic Program: A1, A2, A3, J1, J3, S2B, S3A, S3B
English Only: J2, S1, S2A

In order to relate the interview data more directly to the large group results, an Analysis/Synthesis Average (ASAVE) was computed for each interviewee. On the whole, the results tend to confirm the conclusions reached after analysis of the large group data, that is, that students who are higher in English proficiency also tend to have a more synthetic approach to language learning. Table 6 shows rankings of the interviewees on both proficiency and ASAVE, with a correlation of $\rho=.4$.

Table 6. Interviewee Rankings on Proficiency and ASAVE

Subject	Proficiency	Subject	ASAVE
A1	53	A2	2.19
J1	54	S1	2.59
S1	57	J2	3.04
J2	60	J1	3.09
A2,S2A	64	A3	3.23
S2B	67	S2A	3.27
S3B	80	S2B	3.33
S3A	85	S3A	3.36
J3	86	A1	3.63
A3	87	S3B	3.72
		J3	3.77

The one notable exception to the general proficiency-ASAVE correlation is A1, who ranks lowest in proficiency (53), yet has the third highest ASAVE (3.63). There are a number of possible explanations for this anomaly: (1) his visual handicap may make it more difficult for him to take the written exam, and as a result, his score may not reflect his English proficiency entirely accurately; (2) if we assume that students at different levels of proficiency use

different learning strategies which are appropriate to each level, A1's high ASAVE may reflect the use of strategies which are inappropriate for his level of proficiency; and (3) as noted in the third chapter, the ASAVE-proviciency correlation was much lower for Arabic speakers and accounted for a much lower percentage of the variance than for the other groups. In this sense, then, the small group still mirrors the large group in that for Arabic speakers, the relationship linking a higher proficiency score with a higher ASAVE is not so strong. Table 7 summarizes information on the interviewees which will be referred to in the discussion of the interview data.

C. Interview Data

1. Language Background

Language learning background varies among ESL students mainly as a function of the requirements for foreign language study in their various countries. In Japan, for example, students must study English for at least six years, through junior high and high school; students who apply for admission to a university are also required to pass a difficult English exam. In addition, university students must take at least one year of a second foreign language. Among the case study subjects, J2 took French, J3 took Spanish, and J1 took both French and Chinese in college. Many

Table 7. Data on Interviewees for All Variables

		Arabic	Japanese	Spanish	Spanish
Lower	Subject ID	A1	J1	S1	
	ASAVE	3.63	3.09	2.59	
	Proficiency	53	54	57	
	Progress	+2	0	+9	
	Age	29	27	20	
	Sex	Male	Male	Female	
	Home Lang.	Arabic	English	Spanish	
	Study Plans	Art Ed.	Business	English	
Intermediate	Subject ID	A2	J2	S2A	S2B
	ASAVE	2.19	3.04	3.27	3.33
	Proficiency	64	60	64	67
	Progress	+4	-3	+10	+5
	Age	28	25	22	30
	Sex	Female	Male	Female	Male
	Home Lang.	Arabic	English	English	(Lives Alone)
	Study Plans	Interior Design	English	English	Math
Advanced	Subject ID	A3	J3	S3A	S3B
	ASAVE	3.23	3.77	3.36	3.72
	Proficiency	87	86	85	80
	Progress	-1	-1	+3	-1
	Age	22	24	33	27
	Sex	Male	Female	Male	Male
	Home Lang.	English	English	Spanish	Spanish
	Study Plans	Civil Eng.	Econ.	Personnel Admin.	Computer Science

European countries, such as Germany, also require several years of English study.

Other countries, however, are much less stringent about language study. All of the Spanish-speaking subjects and two of the Arabic-speaking subjects studied English during high school, usually for about two years with classes meeting for two or three hours a week. None of them were required to pass an English exam to enter the university, and they usually forgot their high school foreign languages as quickly as most Americans forget theirs.

Among the Arabic and the Spanish-speaking students, study of another foreign language in addition to English was the exception rather than the rule. S2A was the only Spanish speaker who studied French in high school for two years, taking one or two classes a week. A3, however, was atypical in that he attended a bilingual French-Arabic school in his childhood and had frequent contact with others who were bilingual in French and Arabic.

2. Type of Language Input and Native Speaker Contact

All four of the advanced level interviewees (A3, J3, S3A and S3B) had in common the fact that the type of linguistic input in English and/or the amount of contact with native speakers was different than that experienced by other members of their language/cultural groups.

S3A and S3B both said that they had studied English for

a year or less while in high school; however, both students had had contact with Americans or the English language after they had started working. In his country, S3A worked in the personnel department of a company which was American before it was nationalized. All employees of the department were native Spanish speakers, but S3A was the only one who didn't know English. The other employees spoke in English occasionally, not often, but it nevertheless seems significant that S3A was exposed to a situation in which English was seen as an important means of communication. In addition, S3A said that his wife had spent two years in Barbados and spoke English well.

S3B had a similar experience when he worked at a National Aeronautics and Space Administration (NASA) station in his country. The facilities there included a language laboratory in which he studied English by himself during the last year he worked there. He also had a sister who knew English, although he said she did not make any efforts to help him learn the language.

When he came to the United States with his wife, he studied English on his own while his wife began formal classes at the English Language Center. After three months of independent study, he placed into a high-intermediate class at the ELC, and progressed to the high-advanced level only three months later.

A3 was the only subject who claimed to have studied no English at all in his home country, with the exception of

one month at a special English center, taking one class per day. However, he was also the only interviewee--and one of the few students at the ELC--who was fluent in another language, French. This skill may have given him some advantage, as he was already accustomed to using a foreign language as a means of communication.

When A3 came to the U.S., he first took a three-month intensive English course at another university and then attended a local junior college for two semesters before coming to Michigan State University. He not only took engineering courses at the junior college, but also attended the same English classes that were required of American students.

J3, as mentioned previously, took several years of formal English classes, as do all Japanese. But it is important to note that unlike the other interviewees, she had previously had a great deal of contact with American military personnel. Many of the Americans also attended her church, where she made friends with an American who spoke no Japanese. J3 also had an opportunity to see many English-language television programs which had been transmitted for the military personnel, and to hear English radio programs on the Far East Network (FEN).

The only other subject who had out-of-class contact with Americans was S2A, who had worked for a year at the airport in the capital city of her country. Occasionally,

vacationing Americans passed through, but her contact with them was minimal.

3. Media Influence

Nearly all subjects had the same type of media exposure to English, i.e., primarily through movies shown in English with subtitles in the language of the country where they are being shown. The only exception to this was A1, who said that there are no movies shown in most of his country.

Most subjects were not aware of any English-language radio broadcasts to their countries, except for the Far East Network. American pop music is popular in Latin America, so some of the Spanish speakers mentioned that they had heard English songs on the radio; my own experience living in Venezuela confirms that American music is heard frequently, even though the listeners may not understand the words at all.

A3 said that BBC English courses were sometimes transmitted to his country on the radio, but that he never listened to them. Other than this and the Far East Network, most subjects had never listened to spoken English on the radio, and usually read the subtitles in the movies without paying much attention to the spoken English.

4. Self-Evaluations of Language Learning Ability

Subjects were asked to evaluate their language learning ability in several ways: (1) by stating whether they thought they had a special talent for learning languages; (2) by estimating the extent to which their achievements depended on the teacher or on themselves; (3) by listing the things they felt caused them particular difficulty in learning English; and (4) by assessing their specific ability in understanding, speaking, reading and writing English.

Most subjects were reluctant to admit to any particular talent for language learning; only S2A and S3A felt they were strong in this area, without further qualification or explanation. A3 said he was strong in language learning, but because of hard work rather than ability. He observed, "Learning a language means learning a culture."

Four of the others, S1, S2B, J2 and J3, said their language ability was merely average; the remaining three said they were weak in language learning, but for various reasons. A2 said that her ability was weak, but her interest was strong. S3B's statement that he was weak in language learning came as somewhat of a surprise, since he had made such fast progress at the English Language Center. However, he seemed to think, as A3 did, that he had learned quickly by working hard, and not because of a special talent. Only J1 rated himself an unqualified "weak" in language learning.

The question dealing with the extent to which learners' language learning achievements depended on the teacher or on themselves yielded somewhat interesting results in terms of their progress scores. S1 (+9), A2 (+4), J1 (0) and J3 (-1) said that although their own efforts were important, their teachers had been much more influential in helping them succeed, and the teachers were given a majority of the credit. A3 (-1) divided the credit about evenly between his own work and the teacher's guidance. These progress scores represent a variety typical of those of ELC students.

However, S2A (+10), S2B (+5) and S3A (+3) felt their own contribution to their achievement outweighed that of the teacher. In comparison, S3B (-1) and J2 (-3) do not give their teachers any real credit at all. S3B firmly believes in studying by himself; it is part of his philosophy of learning. J2 did not seem to like his teachers very much; he said they were just there "doing their job" rather than trying to help him learn.

In other words, the students who said their teachers had no real part in their language learning success were also the ones whose proficiency scores had decreased; those who thought their own contribution outweighed that of the teacher were the ones whose proficiency scores had increased; and the students who said the teacher's contribution outweighed their own consisted of both those whose scores had increased and those whose scores had decreased.

The subjects' feelings about what caused them the most

difficulty in learning English reveal an interesting pattern. Some of them (A3, S3A, S2B and J1) could not think of any special problem that was more difficult than others. Of the rest, the lower proficiency students were concerned with grammar (A1 said "grammar", S2A said "past tense verbs," and S1 said "auxiliaries"). The intermediate proficiency students (A2 and J2) both said that "vocabulary" was their biggest difficulty, while advanced students (S3B and J3) both thought their weak point was "speaking." In other words, the interviewees at the beginning level were more concerned with analytical aspects of English, and the advanced students were more concerned with an aspect of English which required that the language be highly internalized.

Finally, the subjects were asked to evaluate their abilities in understanding, speaking, reading and writing English after they heard and read descriptions from the Good Language Learner study of what constituted elementary knowledge, working knowledge and advanced knowledge. Figure 1 illustrates how the subjects ranked themselves on those abilities.

We can see that most subjects thought they had certain strengths and weaknesses in English. J3, for example, gave herself two separate rankings for reading; she said that she was "average" when reading literature in English, but somewhat more advanced when reading books in her field, economics. A2 ranked herself rather low in understanding,

	Elementary Knowledge	Working Knowledge	Advanced Knowledge
Understanding	J1 A2 A1 S1	S2B J2	S3A S3B J3 S2A A3
Speaking	J1 A2 S2B S3B A1	S2A S1 S3A J3 J2	A3
Reading	A1 J1 A2	S2A S2B S1 J2 J3(Lit.)	A3 S3A J3(Econ.)
Writing	J1 A2	S1 J3 S2A A1(except vocab.)	S2B A3 S3A S3B

Figure 2. Subjects' Self-Evaluations of English Ability

speaking and writing, but thought she was stronger in reading.

On the whole, subjects' self-rankings tended to reflect their level of proficiency, i.e., lower level students saw themselves as elementary to average, intermediate students said they were average in all areas, and advanced students usually ranked themselves as "borderline" advanced. Since the descriptions of advanced ability made it clear that this was considered "near-native," most students did not feel confident in choosing this option without some qualification.

A few subjects ranked particular abilities unusually high or low with respect to their proficiency levels. Since S2A is married to an American, she felt that her level of understanding was closer to being native than that of most foreign students. On the other hand, S3B said that his speaking ability was elementary, an evaluation which the interviews tended to confirm.

It is interesting to note that A3, who learned French when he was quite young, now ranks his English ability higher than his ability in French (Figure 3). He expressed concern over "losing" his French because he wasn't using it, whereas he said that his constant daily use of English was improving his ability in that language.

	Elementary Knowledge	Working Knowledge	Advanced Knowledge
Understanding		←F E→	
Speaking		F E	
Reading		F	E
Writing		F	E

Figure 3. A3's Self-Ranking of English and French Ability

5. Approaches to Language Learning

The Language Background Questionnaire (modified Adult Interview Questionnaire) had a number of questions dealing with how students believe the language learning task should be approached, and some specific questions on what they would do to learn a new language.

With the exception of J1, who felt "so-so" about it, all of the interviewees said they would either "look forward to" learning a new language besides English, or would "feel very excited" about it. French was the most popular choice, selected by eight of the eleven interviewees. A1 was interested in Italian or German; A3, who already knew French, said he thought he'd like to learn Spanish; S2B said he would be excited about learning <u>any</u> new language, and gave Japanese and Portuguese as two examples.

Nearly all of the students said they would prefer to learn the new language intensively; J2 was the only one who wanted to proceed "little by little." He also said that the first thing he would do to learn French would be to take a French course in Japan, three times a week for a long period of time, to gain elementary knowledge. The only other subjects who said they would take private lessons in their own countries were S1 and J3.

Most of the interviewees were very much in favor of the method of going to live in a country where the target language is spoken and taking a course there--very much the same thing they have done by coming to the United States to learn English. In some cases, though, they would go beyond that. A1 and A2 specified that they would want to live with a family in the target culture, in addition to taking a course. S3A said that he would study part time, but would want to live in a small town and get most of his language practice "on the street."

Only one subject said that he would "go to the country and immerse himself in the language." Here, the word "immerse" is understood to refer to an out-of-class context, such as people describe when they spend some time in a country and "pick up" the language without formal study. Interestingly, this student (J1) rated himself only "elementary" in all aspects of his English ability. He was also the most difficult to interview, due to his limited abilities in both understanding and expressing himself in English.

One subject, S2B, found he could not give an easy answer to whether he would take private lessons, visit the country, or use other methods to learn a language, saying that it depended on the purpose. If he were interested in the language in order to do business with its speakers, he would take an intensive course such as that in the ELC; but if he just wanted to travel and meet people, he would be likely to take a more intuitive approach, such as going to Japan and immersing himself in the language. S2B was the only interviewee to raise the issue of purpose in language learning; as will be seen later, a student's purpose for doing a language task is crucial and makes a significant difference in the way he/she approaches that task.

When asked to describe their final goal in learning a new language, the interviewees' responses showed how purpose can influence language learning approach. All three of the Japanese students, as well as S1, said that their final goal in learning a new language would be just to speak and understand it, usually for travel purposes. These four people were the same ones who would not choose to take a language course in the target country, but would rather learn it initially at home (S1, J2, J3) or by an "immersion" method (J1). Of the remaining interviewees, Al said that his goal was to read and understand the language; all the rest wanted to gain total communicative skills in speaking, understanding, reading and writing.

6. Specific Learning Strategies

Both the Learning Preference Opinionnaire and the modified Adult Interview Questionnaire asked students to describe their specific learning strategies for dealing with another language. The LPO served as an initial point of discussion in the first interview, and both the subjects' choices on the Analysis/Synthesis scale and the comments they made about specific items generally confirmed the overall pattern, in terms of proficiency level and in terms of culture, shown in the large group data.

The other more open-ended questionnaire asked students to describe what they thought was appropriate at various stages of language learning, especially at the beginning stage. As expected, "understanding" was the need most frequently mentioned. The next most important item was "simple conversation"; obviously, a student's main concern when just beginning to learn a new language is to gain basic skills for "survival" purposes. Other items, chosen from a list, included reading, grammar and pronunciation.

On the whole, the interviewees insisted that there was no one skill which had to come first, but that they needed various combinations of skills; A3 and S2B were particularly firm about this. It was also interesting to note that these two students, along with S2A and J1, said that a new language learner should speak and be active right from the beginning. The rest said that in the early stages they would rather be

more passive and develop their receptive abilities before trying to write and speak in the new language.

Finally, the majority of the interviewees agreed that language learning is an active, conscious process. A few students qualified this statement; S3A said that it was partially conscious, but somewhat more intuitive than conscious; S3B said that it was a conscious process, but that motivation was important; J1, who is lower in proficiency and is a slower learner, said that languages could be learned unconsciously (i.e., "acquired") if the learner had a long enough time in which to do it, but that the process would be more conscious if the learner had only a short time for it. Only S1 said that the language learning process was primarily intuitive.

7. Teacher Evaluations

Brief interviews were held with at least two of each subject's classroom teachers, during which I asked them to characterize their students as learners on the basis of their classroom behavior. The teachers' characterizations generally coincided with the impressions I had formed of each student after interviewing him or her. This was evident even when the teacher and the student were at cross purposes; for example, the student who said his teachers were only there to do a job, not to help him, was described

by his teachers as passive, bored, and generally resistant to class activities.

8. The Reading Task

For the reading task, students were given a simplified newspaper item and asked to read it and do whatever they needed to do to understand it. They were then asked to summarize the item, and were asked a few questions if the summary wasn't clear to me.

The most interesting result of this was that even students who tended to be analytic and said they looked up every word tended to take a rather casual approach to the task. Some of them, including A2 and J2, admitted that they did not try to read it carefully, but just to get the general meaning, as I had told them to do.

These results tend to support previous statements that the purpose of a language task may be an important determinant of a student's approach to the task. In a few cases, they were given a second article to read after being questioned on the details of the first article. Immediately, they changed their attitudes, anticipating that they would again be asked questions about details. Even highly synthetic learners like J3 and S3B began to use their dictionaries and take notes.

D. Conclusions

Results of the interviews with the case study subjects follow the general pattern shown by the large group data; namely, that lower proficiency students tend to be more analytic and higher proficiency students tend to be more synthetic in their learning styles. The interviews also tend to confirm that these variations occur across all cultures; that is, with respect to an analytic or synthetic approach to language learning, a high proficiency Japanese student would tend to have more in common with a high proficiency Arab, for example, than with a low proficiency Japanese.

The most important factor in a student's language learning background appears to be outside contact with speakers of the target language. Here, the subjects who were highest in synthesis were also the ones who had had contact with Americans in their home countries or who saw English as a means of communication.

Many of the other interview questions brought out differences which seemed more related to personal preference than to proficiency or language group as a rule. However, one point on which many of the high synthesis and high proficiency learners tended to agree was that "ability" was less a factor in language learning success than ordinary study and hard work.

Another conclusion drawn from the interview study was

that learning styles and learning strategies vary according to both the purpose of the task and the context of language learning. Students could sometimes be quite analytical, as when they thought they might be quizzed, but when the pressure was off, they tended to be more concerned with communication than with cracking the language code.

E. Relationship of Small Group and Large Group Data

As stated in previous chapters, one of the reasons for collecting data from a small group as well as a large group was to see if the interview data would assist in determining the validity of the Learning Preference Opinionnaire as a measuring instrument. This is the test of the final hypothesis of the study, as stated below:

> H6--Learning style variations among ESL students, as measured by an instrument designed for this study, will be reflected in case study data collected from a small group of students, using interviews, a miniature learning experience and ratings by teachers.

In order to translate the small group data into some sort of independent numerical measure for comparison with the Learning Preference Opinionnaire, I weighted each of the components of the small group investigation as follows: the teacher evaluation, 1; the reading task, 2; the language background interview, 3; and the LPO-based interview, 4. These values represent an ascending order of

importance of the components; the LPO-based interview, of course, ranks highest, since we are attempting to assess the validity of the LPO for the large group.

Each interviewee received a score from one to five for each component, with "one" representing the analysis end of the scale and "five" representing the synthesis end of the scale. The score for each component was then multiplied by the number representing the weight ranking for it; these products were then totaled and divided by ten, to come up with an overall score for each interviewee that could be compared to the Learning Preference Opinionnaire.

Table 8. Overall Learning Style Scores of Interviewees*

Subject	(1) Teacher Eval.	(2) Reading Task	(3) Language Background	(4) LPO-Based Interview	Overall Interview	ASAVE
A1	3.5	4	3.5	4	3.8	3.63
A2	3	3	2.5	2	2.45	2.19
A3	3	4	4	3	3.5	3.23
S1	3	2	3	2.5	2.6	2.59
S2A	5	4	4	3.5	3.9	3.27
S2B	4	4	4	3	3.6	3.33
S3A	4	4	4	3	3.6	3.36
S3B	3	4	3	4	3.6	3.72
J1	2	2	3	2.5	2.5	3.09
J2	3	3	3	2.5	2.8	3.04
J3	3	4	4	4	3.9	3.77

*$\rho = .86$ correlation between overall interview score and ASAVE

While based on subjective criteria, these scores do appear to provide some evidence to support the Analysis/Synthesis Averages produced by the Learning Preference Opinionnaire. Although most of the overall interview scores are somewhat higher--and in a few cases, lower--than the Analysis/Synthesis Averages, it is readily apparent that the independent interview scores follow the same general patterns for the same students as the ASAVE scores. Calculation of a Spearman rank-difference correlation coefficient for the interview scores and the ASAVEs resulted in a correlation of .86. This confirms Hypothesis 6, that learning style variations shown by the Learning Preference Opinionnaire in the large group would be reflected by the case study interview data.

CHAPTER V

SUMMARY, DISCUSSION AND IMPLICATIONS

A. Introduction

This chapter will first present a summary of the results of the study. Some of the findings were unusual or unexpected, and these are discussed in the first section of the chapter, along with some speculations on the possible causes. The remainder of the chapter discusses implications of the present research, with possible classroom applications and suggestions for further research.

B. Summary of Results

Data were gathered on student learning styles in terms of analysis or synthesis by asking them to respond to a list of strategies on the Learning Preference Opinionnaire. Results of the administration of the LPO to a group of 156 adult ESL learners and data gathered during interviews with a group of eleven learners indicated the following with respect to the hypotheses of this study:

Hypothesis 1, that learning style as expressed by the

Analysis/Synthesis Average (ASAVE) on the Learning Preference Opinionnaire would vary along with the student's level of proficiency in English, was confirmed.

Hypothesis 2, that learning style as expressed by ASAVE would vary along with differences in a student's language/cultural background, was not confirmed.

Hypothesis 3, that learning style as expressed by ASAVE would vary along with differences in previous foreign language learning experience, could not be tested in this study due to an insufficient number of cases.

Hypothesis 4, that learning style as expressed by ASAVE would vary along with differences in age, amount of time spent at the ELC, and progress, was not confirmed.

Hypothesis 5, that learning style as expressed by ASAVE would vary along with differences in sex, roommate's language, and study plans, was not confirmed.

Hypothesis 6, that learning style preferences expressed on the Learning Preference Opinionnaire would be reflected in case study data gathered from a small group of eleven students selected to represent a cross section of the large group, was confirmed.

C. Discussion of Limitations

In view of statements by previous researchers that successful language learners take a systematic approach to learning (Naiman, et al. 1978) or else see it as a

problem-solving task (Hosenfeld 1976), the emergence of synthesis as a major factor was somewhat unexpected.

Three possible reasons for this finding were explored: (1) the Learning Preference Opinionnaire may have somehow favored those who had a preference for synthesis, or else the synthesis items might have been more reliable; (2) the context in which students were asked to respond to the items, i.e., the assumption of an "out-of-class" situation, may have influenced their answers; and (3) the particular makeup of the ELC population may have contained more learners who were slightly oriented toward synthesis.

1. Reliability of the Learning Preference Opinionnaire

As stated in the results chapter, the analysis and synthesis dimensions of learning were originally envisioned as being at opposite ends of the same continuum. However, the wide difference in the reliability coefficients for the two scales, analysis and synthesis, suggests that the two halves of the opinionnaire may in fact have been measuring two different types of learning processes, and not two aspects of the same dimension of learning.

To review briefly, the Cronbach's Alpha reliability coefficient for the analysis scale was .43, with the reliability of the synthesis scale at .69, and the overall reliability of the instrument at .48. This low reliability suggests a need for further refinement of the opinionnaire

before definitive conclusions can be drawn regarding learning styles of the type investigated in this study. In fact, with the present instrument, one apparent improvement was easily indicated.

The eleven items for which a positive response indicated a preference for synthesis had a reliability coefficient of .69. One of the items (#16) appeared to be negatively correlated with the other synthesis responses, and eliminating it raised the reliability to .72. While still low, this figure represents surprising stability for so few items. Even so, in view of the relatively low reliability of .48 for the whole instrument, one can probably assume that the positive and significant correlations between ASAVE and proficiency would <u>increase</u> with higher reliability. Other correlations with age, time at the ELC, and progress are so low that they are unlikely ever to be of major importance, though of course further studies need to be conducted with a refined instrument, perhaps with synthesis items only.

The interview studies also offered some data to support the previous suggestion that the instrument may have been measuring two different types of learning styles. For example, the two students with the highest synthesis scores were J3 (3.77) and S3B (3.72). However, J3's high score was the result of <u>positive</u> responses to the <u>synthesis</u> items, while S3B's high score was the result of <u>negative</u> responses to the <u>analysis</u> items. It seems that being pro-synthesis is not necessarily the same as being anti-analysis. Thus,

the Learning Preference Opinionnaire may well be measuring two different dimensions of learning, rather than two aspects of a single dimension of learning.

2. Context of the Learning Situation

The interview data showed that students may take a more analytical approach to a task if they are asked to meet more formal expectations. In anticipation of the possibility that students might take approaches in the classroom which they might not otherwise choose when learning a language outside of class, the LPO asked the large group respondents to assume an out-of-class, informal situation while answering the questionnaire. A student who would "read for meaning" at home might "read for detail" in class.

If students were indeed assuming an informal context while answering the questionnaire, it would make sense for them to favor the synthesis items. In research such as the Good Language Learner study, where learners indicated a high preference for analytical methods of language learning, the results may likewise have been influenced by the possibility of students assuming an in-class situation. It is possible that if the Leraning Preference Opinionnaire were administered again and students were asked to indicate what they found useful for in-class learning, the mean responses might well lean more toward the analysis end of the scale.

3. Makeup of the ELC Population

In view of the positive correlation between ASAVE and proficiency, the ASAVE may have leaned slightly toward synthesis when a high number of the ELC students were at the advanced proficiency level. This in fact was found to be the case, with the mean proficiency score for the population being 71 points out of 100.

D - Implications for Teachers and Learners

The major conclusion that a tendency to synthesize is correlated with higher levels of proficiency in English has several implications for ESL learning. First, it supports the idea that language learning is different in the elementary, intermediate and advanced stages. Research by Naiman, et al. (1978) Stern (1975) and Rubin (1975) suggested this may be the case.

Second, these "stages" of language learning are more likely to be part of a continuum of language learning progress, rather than three separate stages such as beginning, intermediate and advanced. Evidence for this may be seen in the ASAVE rankings and the proficiency rankings for the small group subjects (Table 6), where lower and middle proficiency students' scores tend to overlap. Furthermore, since "proficiency" has been defined in this study as a student's position on a continuum of ability in English,

there is ample reason to describe the language learning process itself in the same way.

Another implication is that in view of the conclusion that we cannot predict a student's learning style on the basis of what country he/she comes from or what language he/she speaks, teachers should be prepared for students to use both analytic and synthetic approaches to learning, according to the context and the student's purpose, and should not assume, for example, that Spanish-speaking students will use a more synthetic approach than Arabic-speaking students.

Finally, it may prove useful for ESL teachers to use a simple opinionnaire, such as a refined version of the LPO, to learn what strategies their students are bringing into the classroom with them. John Nelson (1981) stresses that the ESL instructor needs to learn as much as possible about his/her students' learning strategies--those learned from previous experience--in order to help them develop better ones.

E. Suggestions for Further Research

It must be stressed that this has been a preliminary study, and that much more needs to be done in the area of learning styles and strategies of ESL students. One suggestion, obviously, is the refinement of the Learning Preference Opinionnaire. It would be desirable to further

refine the synthesis items so that a more accurate measure of the dimension of synthesis may be obtained. Furthermore, it may be a good idea to develop two different forms of the opinionnaire--one for analysis, one for synthesis--rather than considering analysis and synthesis as part of a continuum.

Another suggestion is to find other ways to estimate the validity of the Learning Preference Opinionnaire, perhaps by comparison with other instruments that measure analytic and synthetic learning dimensions.

Third, since for the whole group and for one subpopulation, the percentage of the variance accounted for by the ASAVE-proficiency correlation is quite small, it is necessary to explore what other variables may further explain the variance. In particular, it would be desirable to give standardized tests such as Carroll's or Pimsleur's aptitude battery and Gardner and Lambert's battery of tests on attitude and motivation, as well as cognitive style measures such as field dependence/independence and tolerance/intolerance of ambiguity, especially since these measures have been shown to predict language success (Naiman, et al. 1978).

F. A Possible Analysis/Synthesis Model for Language Learning

The preference of a student for analysis or synthesis when learning a language may well be related to what Stephen Krashen (1976) has called language acquisition and language

learning. Krashen has said that when a language is internalized "naturally," as children learn, this may be called "acquisition," as opposed to the quite conscious language "learning" of the adult.

The question here is, just how well does the adult second language learner internalize the target language? In the beginning, not well at all. The learner usually studies the rules, analyzes them, tries to generalize, and monitors his/her own speech carefully when trying to produce the language. The learner constantly asks, "Why?" when deciding how to handle a complex situation, and may depend on the dictionary or translation.

But as the L2 learner progresses toward L2 competence, behaviors such as analysis and monitoring tend to become less and less conscious. They may still be there, but they are gradually internalized and become automatic, i.e., they have become "acquired." Just as a native speaker of a language may "feel" certain uses of language to be correct but may not be able to say why, so a highly proficient non-native speaker may "know" something is right or wrong without knowing exactly why.

The suggestion is that the more advanced an L2 speaker is, the more his/her second language has in common with the native speaker's "acquired" language; and that his/her learning style becomes more synthetic or intuitive because the target language has become more internalized.

APPENDICES

APPENDIX A

Learning Preference Opinionnaire

To the student: You are now taking classes in the English Language Center. Imagine that during the next month you can study English in any way you want, and to do what you, personally, know works best for you. How useful would each of the following study activities be? You may write comments or explanations if you wish, and you may use either English or your own language for this.

(Note for the reader: Analysis items are #1,3,4,5,8,10,11,14,17,18,20; Synthesis items are #2,6,7,9,12,13,15,16,19,21,22)

	Very Useful				Not Useful
1. Memorizing grammar rules (comment)_____	1	2	3	4	5
2. Guessing new words by looking at the whole sentence or paragraph (comment)_____	1	2	3	4	5
3. Doing homework assignments (comment)_____	1	2	3	4	5
4. Writing new words 2 or 3 times (comment)_____	1	2	3	4	5
5. Translating English sentences to my own language (comment)_____	1	2	3	4	5
6. Trying to think in English (comment)_____	1	2	3	4	5
7. Practicing during language lab "open hours" (comment)_____	1	2	3	4	5

	Very Useful				Not Useful
8. Looking up words in a bilingual dictionary (with my language) (comment)_____	1	2	3	4	5
9. Using English word games (examples: "Scrabble" or crossword puzzles) (comment)_____	1	2	3	4	5
10. Reading to get all the words right (comment)_____	1	2	3	4	5
11. Making lists or charts of new words (comment)_____	1	2	3	4	5
12. Watching television and movies (comment)_____	1	2	3	4	5
13. Speaking English without worrying about mistakes (comment)_____	1	2	3	4	5
14. Looking up words in an English-English dictionary (comment)_____	1	2	3	4	5
15. Reading to get the general meaning (comment)_____	1	2	3	4	5
16. Looking up only the <u>most important</u> words I don't know (comment)_____	1	2	3	4	5

	Very Useful				Not Useful
17. Translating my own language to English (comment)_____	1	2	3	4	5
_____					
18. Looking up all the words I don't know (comment)_____	1	2	3	4	5
_____					
19. Speaking English with as many people as possible (comment)_____	1	2	3	4	5
_____					
20. Repeating new words 2 or 3 times (comment)_____	1	2	3	4	5
_____					
21. Reading things like advertisements, restaurant menus, comic strips, etc. (comment)_____	1	2	3	4	5
_____					
22. Reading books in my major or profession (comment)_____	1	2	3	4	5
_____					

****

23. What other things, not mentioned here, do you find useful?

24. What other things, not mentioned here, do you find NOT useful?

APPENDIX B

Language Background Questionnaire

(based on Naiman, et al. 1978, 106-9)

1. You were born in _____ and your native language is _____.
2. Were any other languages spoken in your neighborhood?_____
3. What was the first foreign language you learned?_____
4. When you learned _____, what did you study--mainly grammar, for example?_____
5. Do you remember what kind of textbooks you used?_____
6. Did the teacher speak in English or in your language?_____
7. Did the students speak in in English, or did you read and translate?
   _____
8. Do you remember what kind of homework you had?_____
9. Was there anything that was really difficult for you?_____
10. Did you have any chance to meet Americans, or people who speak English, outside the classroom?_____
11. Did you hear radio programs or see movies in English?_____
12. Have you studied any other foreign languages besides English?_____
    Which ones?_____ How long?_____
13. Please tell me whether you think your English is elementary, average or advanced, according to these descriptions (Naiman, p. 6)

	Elementary	Average	Advanced
Understanding			
Speaking			
Reading			
Writing			

14. Do you think you have a talent for learning languages? that is, are you strong or weak (not strong) in learning languages?_____
    _____

15. Do you think you have a good ear for languages?_____

16. Do you have a good memory?_____

17. Do you like to look at language yourself and analyze it, figure out the rules?_____ Or have the teacher explain it?_____

18. Have you been able to learn English because of the teacher?_____ or the English program?_____ or your <u>own</u> study efforts?_____ or your own personality or attitude?_____

19. If you had the time and the opportunity to learn another language besides English, how would you feel about it? (1) I hate the thought of it (2) It scares me (3) I feel okay (so-so) about it (4) I would like to do it (look forward to it) (5) I am very excited about it. Which language would you choose?_____

20. What would be your final goal in learning _____? (1) To speak and understand (2) To read and write (3) To speak, understand and read (4) To speak, understand, read and write.

21. What is the <u>first</u> thing you would do to learn _____? (1) Travel to _____ and just walk around and absorb the language (2) Travel to _____ and take a language course there (3) Buy a course and study by yourself (4) Go to a teacher or language school for private lessons (5) Take a language class, in the U.S. or in your own country (6) Other _____

22. If you could take as much or as little time as you wanted, would you prefer to learn intensively in a short time--as at the ELC--or just a few times a week for a longer time?

23. Do you think language learning is different at the beginning, middle and advanced levels?_____

24. If you were learning _____, which of the following things would you mainly like to do in the <u>beginning</u>? (1) Understand the spoken language (2) Learn to read (3) Learn pronunciation (4) Learn simple conversations (5) Learn to write (composition) (6) Learn grammar (7) Learn about the cultural background

25. In the beginning of learning a language, would you prefer to be firmly guided by the teacher, or to learn in your own way?_____

26. In the beginning of learning a language, do you prefer to be more active and speak immediately, or to be more passive and just read, listen, etc.?_____

27. We've talked about what you like to do in the beginning. Is there anything that's especially useful to do at the advanced level?_____

_____

28. Do you feel that learning a language is conscious-- that you think about how you do it?_____ or is it unconscious--you don't learn by studying, but by absorbing it, letting it sink in?_____

29. Do you feel that when learning English, you have to "forget about" your native language?_____ or does it help if you compare your language and English?_____ Is it useful to use a bilingual dictionary?_____or to translate?_____

30. Do you feel that it's possible to learn to think in English?_____ How can you learn to do this?_____

31. Have you developed any special study methods that you would find useful in learning another language, as follows:
(1) in learning the sounds (pronunciation)_____
(2) in learning the grammar_____
(3) in learning the vocabulary_____
(4) in improving listening comprehension_____
(5) in learning to speak (conversation)_____
(6) in learning to read_____
(7) in learning to write (composition)_____

32. Have you ever had any bad or negative feelings about language learning, for example, feeling frustrated_____ or impatient _____ or discouraged_____or confused_____?

33. Did you ever feel strange or silly, or as if you sounded ridiculous to yourself when speaking the new language (English)?_____

34. Have you ever felt helpless or inhibited while learning English-- as if you were a child and couldn't do anything?_____

APPENDIX C

Reading Task Checklist

Oral instructions to student: "Read this story and try to understand it as well as possible. If you don't know a word, you may guess, or use an English dictionary, or use your bilingual dictionary. Just do whatever you need to, in order to understand."

Evaluation (based on short retelling or summary)

1.	Use of dictionary	None 1	2	3	4	Much 5
	Comments:					
2.	Speed of reading	Slow 1	2	3	4	Fast 5
	Comments:					
3.	Care in reading	Casual 1	2	3	4	Careful 5
	Comments:					
4.	Difficulty of selection	Easy 1	2	3	4	Hard 5
	Comments:					
5.	Grasp of meaning	Partial 1	2	3	4	Whole 5
	Comments:					
6.	Grasp of details	Random 1	2	3	4	Meaningful 5
	Comments:					
7.	Level of observed comprehension	Low 1	2	3	4	High 5
	Comments:					

Summary:

APPENDIX D

Teacher Evaluation Checklist

1. How would you characterize this student in generel as a learner (e.g., personality, cooperation, motivation, anxiety, etc.)?

2. What kinds of questions does the student ask (e.g., the "why" type vs. the "content" or "what means this" type)?

3. How would you characterize the student's class participation?

None				Much
1	2	3	4	5

4. Is the student's primary concern in English with accuracy or fluency?

Accuracy				Fluency
1	2	3	4	5

5. Does the student attend primarily to form or to meaning in class lessons (especially reading and composition)?

Form				Meaning
1	2	3	4	5

6. How would you characterize the student's dependence on his/her native language?

(thinks in English)	Low				High	(translates almost constantly)
	1	2	3	4	5	

7. How does the student approach the learning of new vocabulary?

   a) bilingual dictionary
   b) English dictionary
   c) guessing from context

APPENDIX E

ANOVA Tables

Table 9. Analysis of Covariance: ASAVE by Culture with Proficiency

Source of Variation	Degrees of Freedom	Mean Square	F	Significance of F
Covariate: Proficiency	1	2.364	24.565	.001
Main Effects: Culture	3	.128	1.332	.266
Explained	4	.687	7.140	.001
Residual	150	.096		
Total	154	.112		

Table 10. Analysis of Variance of Proficiency by Culture Groups

Source of Variation	Degrees of Freedom	Mean Square	F	Significance of F
Main Effects: Culture	3	1046.502	7.157	.001
Residual	151	146.216		
Total	154	163.755		

Table 11. Analysis of Variance of ASAVE by Culture Groups

Source of Variation	Degrees of Freedom	Mean Square	F	Significance of F
Main Effects: Culture	3	.268	2.470	.064
Residual	151	.108		
Total	154	.112		

Table 12. Analysis of Covariance: ASAVE by Sex with Proficiency

Source of Variation	Degrees of Freedom	Mean Square	F	Significance of F
Covariate: Proficiency	1	2.374	24.787	.001
Main Effects: Sex	1	.172	1.796	.182
Explained	2	1.273	13.292	.001
Residual	153	.096		
Total	155	.111		

Table 13. Analysis of Covariance: ASAVE by Roommate with Proficiency

Source of Variation	Degrees of Freedom	Mean Square	F	Significance of F
Covariate: Proficiency	1	2.374	24.347	.001
Main Effects: Roommate	2	.002	.022	.978
Explained	3	.793	8.131	.001
Residual	152	.097		
Total	155	.111		

Table 14. Analysis of Covariance: ASAVE by Study Plans with Proficiency

Source of Variation	Degrees of Freedom	Mean Square	F	Significance of F
Covariate: Proficiency	1	2.374	24.629	.001
Main Effects: Study	1	.078	.806	.371
Explained	2	1.226	12.717	.001
Residual	153	.096		
Total	155	.111		

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