THE UNIVERSITY OF CALGARY

LEARNING STRATEGIES OF ADULT ESL LEARNERS

by

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled "Learning Strategies of Adult ESL Learners", submitted by Dorothy Symington in partial fulfillment of the requirements for the degree of Master of Arts.

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ABSTRACT

The Purpose

The purpose of this study was to identify the learning strategies and beliefs about language learning of a class of intermediate-level adult ESL learners, and to examine the relationship between the learning strategies that the students used, and their beliefs about language learning.

The Study

The study identified the students' language learning beliefs through a questionnaire designed specifically for this research. The questionnaire was based on the findings of a similar study conducted by Wenden (1987b). She identified three belief systems held by second language learners- Use the language, Learn about the Language, and Personal Factors are Important. It was hypothesized that the subjects in this study would have similar belief systems.

The study identified the students' learning strategies through the SILL (Strategy Inventory for Language Learning), developed by Rebecca Oxford (1989) and their use of learning strategies by analyzing videotapes of classroom activities. The strategies were classified according to Oxford's (1990) learning strategy classification system.

The data from the two questionnaires were then compared to look for a relationship between learning strategies and

beliefs about language learning. Spearman Correlation Coefficients were used for the comparison.

The Findings

The subjects' belief systems were similar to those found by Wenden (1987b). It was also found that the students' nationalities affected their beliefs. Eastern-European learners believed more strongly in the importance of learning about the language, whereas the other students believed using the language was the most important way to learn a language.

Analysis of the SILL results showed that the subjects made high use of metacognitive, social, and cognitive strategies, and medium use of compensation, affective, and memory strategies. Observation of strategy use showed that cognitive strategies were used the most, followed by compensation strategies. Other strategies were used infrequently. Patterns of strategy use that were associated with particular language learning tasks were also detected.

Comparison of learning strategies and beliefs about language learning revealed little about the nature of the relationship, thus bringing into question the validity of the assessment measures used, and underscoring the need for future research in this area.

Pedagogic implications resulting from the study were that both questionnaires could be used by teachers as components of learning strategy training.

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This thesis, like all major projects, could not have been accomplished without the help of many. The contributions of the following people were especially significant.

Dr. Terry Piper, my supervisor, offered both guidance and support. I wish to thank her.

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Special thanks to Wayne Symington, my husband, for his tremendous help and support throughout the process of completing this thesis.

DEDICATION

To my students, who have made teaching a rewarding profession, I dedicate this thesis.

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CHAPTER ONE

Introduction

In an effort to capture the complexity of factors that must be considered in formulating a theory of second language learning, Spolsky (1985) formed the central question, "Who learns how much of what language under what conditions?" (p. 269). He notes that this is in fact a set of complex questions. Who includes a number of individual learner differences; such factors as age, ability, intelligence, attitudes toward language, motivation, strategy choice, and personality factors, are some of the variables that he mentions. Learns refers to the process itself. He wonders-how many kinds of learning there are, what is pre-established in the brain, what differences there are between conscious and unconscious knowledge, how transfer works, and how learning varys individually, and culturally. By how much of he wants to know what the criterion is for having learned, and what part of language is learned. What language must also consider variety, mode, or dialect. Under what conditions also raises a multiplicity of questions, including

> Is it amount or kind of exposure that makes the difference? How does exposure lead to learning? Who is the best person to learn from? And how do each of these factors interact with each other? For example, what kind of person prefers what kind of strategy? Who

learns best under what conditions? What kind of person learns what parts of language? (Spolsky, 1985, p. 270).

The challenge of second language acquisition theorists to integrate so many factors into a unified theory is a massive one, and it does not seem possible that it will be accomplished quickly or easily. In the meantime, second language research continues. No one study could possibly investigate all of the questions raised by Spolsky (1985), but this research reported here investigates some of them. The who of this research is adult ESL learners. Attitudes toward learning and choice among strategies is central to this research. Some of the questions that he raised as learns are also addressed. The difference between conscious and unconscious learning is discussed, as is cultural variation of beliefs about learning. Moreover, under what conditions is of interest here. The questions, "What kind of person prefers what kind of strategy?" and "Who learns best under what conditions?", are dealt with in this thesis.

Three Models of Language Knowledge

The types of questions that second language researchers raise in trying to address the broad question posed by Spolsky are strongly influenced by their views of what is to be included within the domains of psycholinguistics and applied linguistics. This depends, in turn, on what a particular researcher's view of language knowledge is. Lewis and Cherry (1977) described three major models for the

study of language. The first, the reductionist model, posits that language and cognitive and social knowledge are independent of each other (see Figure 1).

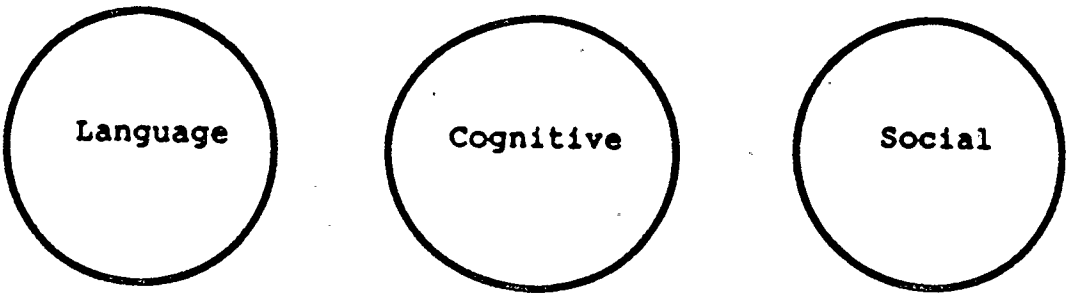


Figure1. Reductionist Model

From this perspective, social and cognitive factors are unrelated to the study of language acquisition, comprehension, and production. Researchers adopting this model might study the order of acquisition of different parts of language. For example, Dulay and Burt conducted a series of studies (1972, 1974a, 1974b, 1976) on the order of morpheme acquisition of children learning English as a second language. They found a common acquisition order similar to that of first language acquisition, and concluded that first and second language learning were highly similar. They used only linguistic data and did not consider cognitive or social factors as part of their explanation of the findings. Reductionists are faced with limitations as to the types of explanations they can give for their findings. Only the learners' existing linguistic system can be used as

a source of explanation. Social and cognitive factors are not possible explanations within this model. According to Lewis and Cherry, those who adopt this model do not communicate with researchers in psychology or sociology.

Lewis and Cherry's second model is an interactionist model. It presupposes that language and social interaction and cognitive knowledge are interrelated in a unidimensional way (see Figure 2).

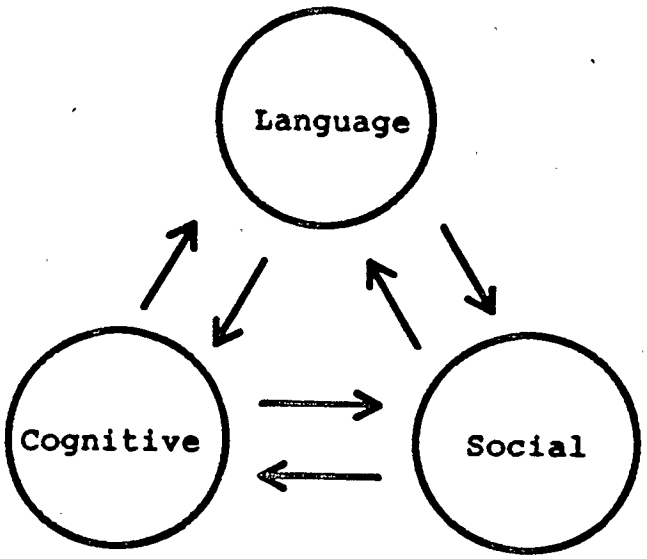


Figure 2. Interaction Model

In this model, language knowledge is seen as derived from, or strongly influenced by, cognitive and social interaction factors. Social and cognitive knowledge are each actively influenced by language factors. Language, social interaction and cognitive knowledge are still discrete, but each affects the others. It is possible, within this model,

to study the cognitive and perceptual conditions that are prerequisites or precursors to acquisition of segments of the language system. The model takes into account that, to some extent, cognition, and/or socialization are causal factors in language learning, there are still limitations. Each field is still considered separate, and the parts of the three systems that do not interact are ignored. One example of research conducted from an interactionist perspective is Naiman and his colleagues (1978) study. They investigated the influence of a cognitive factor, field dependence/independence on English-speaking eighth, tenth, and twelfth grade children learning French as a second language. They concluded that field independence correlated positively and significantly with success in second language learning in classroom environments.

The third, and most salient model for the research reported here, is the unified model (see Figure 3).

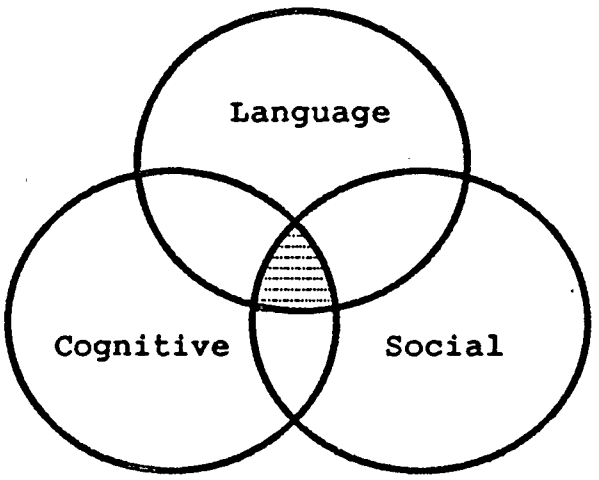


Figure 3. Unified Model

It posits that individuals have a highly unified system of social, cognitive, and language knowledge that is basic, but with age, becomes differentiated and specialized. Researchers who follow this model are concerned primarily with discovering the common basis that makes all communication possible. Hymes, an adherent of this model, has called this common basis "communicative competence" (1971). (The notion of communicative competence and its relevance in this research will be discussed more fully in the second chapter of this study.) Researchers adopting this paradigm or model may focus on a discrete area but see "language learning as a unified development with causal threads moving in and out of the three major areas of knowledge" (Hatch, 1983, p. 237).

Leo Loveday is one researcher whose work is driven by the unified model. His taxonomy for understanding second language sociolinguistics, entitled, "The construction of contextual meaning: the sociolinguistic constituents of communicative competence and some of their contextual determinants producing meaning" (1982, p. 63) is an example of research that may be undertaken within this model.

This research is guided by the unified model. It allows the researcher to investigate the role of language and cognition in understanding how persons become competent members of social groups. More specifically, this research focuses on the role of learning strategies and belief

systems in second language learning. The purpose of second language learning is to allow persons to participate in new social groups. This research is based on the assumptions that learners use learning strategies and that their appropriate use is beneficial. The assumptions that learners have beliefs about language learning, and that those beliefs influence their strategy use are also made.

Defining Belief Systems

According to the Dictionary of Sociology and Related Sciences (Fairchild, 1975) belief is defined as:

> The acceptance of any given proposition as true. Such acceptance is essentially intellectual, although it may be strongly colored by emotion. In any case, it establishes a mental condition in the individual which may serve as the basis for voluntary action. The reality of the belief is not dependent upon the intrinsic, objective truth of the particular proposition. There are false beliefs and true beliefs. A particular belief may be based on sound factual evidence or upon prejudice, intuition, or misleading appearances. People will act just as energetically, determinedly, fanatically upon the basis of false beliefs as of true beliefs. (pp. 28-29)

In this thesis the beliefs studied are those that relate to success in language learning. The aggregate of those beliefs form a system.

Defining Learning Strategies

There is no consensus in the literature on a definition of learning strategies. One general definition of the term given by O'Malley and Chamot (1990) is that learning strategies are "the special thoughts or behaviors that individuals use to help them comprehend, learn, or retain new information" (p. 1). More specifically, with regards to second language learning strategies, they agree with Tarone (1981) that strategies represent attempts to develop linguistic and sociolinguistic knowledge in the target language. They mention that learning strategies are distinct from production and communication strategies. The former refer to unconscious utilization of linguistic knowledge in communication in situations where no communication problems exist. Production strategies operate in casual conversations between native speakers and/or fluent second language learners. When production strategies fail, or are not known, communication strategies are used to communicate meaning. For example, a speaker might coin a new word, airball, for balloon. Motivation underlying the use of the strategy is the means of distinguishing which type of strategy is being used. Ellis (1986) does not differ significantly in his definitions of the terms and notes that learning strategies relate directly to language learning, whereas production and communication strategies relate more closely to language use.

Wenden (1987a) also notes that researchers in the field have not been able to agree on a definition of learning strategies. She avoids giving a definition, but says that learner strategies refer to three phenomena: a) what second language learners do to learn a second language; b) how they manage or self-direct these efforts, and; c) what they know about aspects of their second language learning process other than the strategies they use- for example, general principles to follow to learn a second language successfully. These are assumed to influence strategy choice (pp. 6-7). Although it is not a definition per se, this perspective on learning strategies is less restrictive than that of either O'Malley and Chamot (1990) or Ellis (1986). By not explicitly excluding them, this perspective allows consideration of production and communication strategies within the realm of learning strategies.

This researcher, while acknowledging that varied motivations for strategy use do exist, would argue that the distinction between language learning and language use is not of great pedagogic value, that learning may aid in the use of language, and visa versa. Oxford (1990) has argued in favour of this position. When she talks about language learning she does not exclude language use or communication from her understanding of the term. This view should be taken into consideration in understanding her definition of learning strategies. She has defined the term as "specific

actions taken by the learner to make learning easier, faster, more enjoyable, more self-directed, more effective, and more transferrable to new situations" (p. 8). This researcher recognizes that motivations underlying strategy choice, as described by Tarone (1981), Ellis (1986), O'Malley and Chamot (1990) do exist, but believes that definition of the term learning strategy should not be restricted by this. She therefore allies herself more strongly with the perspective on learning strategies given by Wenden (1987a) and with Oxford's (1990) definition. In a nutshell, learning strategies are actions taken by learners to facilitate their learning.

Features of Learning Strategies

Learning strategies have a number of identifiable features. Wenden (1987a) and Oxford (1990) both list the features of learning strategies. Oxford's list is longer than Wenden's list, which is comprised of six items. The additional features that Oxford lists are, in this researcher's estimation, not exactly features of learning strategies, but rather, in some cases, benefits and/or theoretical underpinnings and assumptions of learner strategy training. These topics will be addressed later in this chapter. Only the six common features identified by Wenden (1987a) and Oxford (1990) will be discussed at this time.

The first feature of learning strategies, according to

Wenden (1987a) and Oxford (1990), is that they have an action basis. Learning strategies refer to specific actions or techniques taken by learners to enhance their learning. They are influenced by more general characteristics of learners and their approach to learning but should not be confused with those characteristics. Wenden and Oxford also note that some learning strategies are observable, while others are not. For example, a compensation strategy, miming, is highly observable, whereas the memory strategies referred to as making mental linkages would almost never be observable.

Third, language learning strategies are tools with a problem orientation. They are used "because there is a problem to solve, a task to accomplish, an objective to meet, or a goal to attain" (Oxford, p. 11). A fourth feature identified by both Wenden and Oxford is that learning strategies contribute directly and indirectly to learning, although they differ on which strategies contribute directly or indirectly to learning. Wenden states that communication or compensation strategies contribute indirectly to learning, while metacognitive and cognitive strategies contribute directly to learning. Oxford's understanding is somewhat different. She says that strategies that contribute directly to accomplishing a particular task, including memory, cognitive, and compensation strategies, directly contribute to learning,

while "other strategies, including metacognitive, affective, and social strategies contribute indirectly but powerfully to learning" (p. 12). The two researchers may differ on classification of strategies, but both agree that learning strategies make both direct and indirect contributions to language learning.

The fifth feature of learning strategies relates to degree of consciousness. They may be used either consciously or unconsciously. They are often used consciously in the initial stages of learning, but may, through time, become fully automated and thus unconscious. This issue will be discussed more fully in the second chapter of this thesis. The last feature of learning strategies is that they are amenable to change. Wenden states that they "can be modified, rejected, and unfamiliar ones can be learned" (p. 8). This feature is significant in that it opens the door for teachers to assist learners in this process of modification, rejection, and learning of strategies.

Theoretical Underpinnings and Assumptions about Learning Strategies

There are a number of theoretical underpinnings and assumptions that support the existence of learning strategies, and no discussion would be complete without them. The work of Rubin (1987) and Oxford (1990) forms an important basis for discussion. Rubin states what is

obvious to many second language teachers, that some language learners are more successful than others. Rubin continues by saying that some of this success can be linked to the "particular sets of cognitive and metacognitive behaviors which learners engage in" (p. 15). Personal learning style will affect the behaviors, and there is no one route to success. On the other hand, some approaches to learning will not be successful for any learners. Furthermore, she assumes that strategies employed by good language learners, once identified, can be used by less effective learners to enhance their learning.

Rubin also assumes that both conscious and unconscious knowledge can contribute to the learning process, that information learned consciously can eventually become automatic, and that for some tasks "conscious attention to the learning process is the first step to making language automatic" (p. 16). She also believes that all learners can become better at learning by raising their consciousness about the learning strategies they use and the learning decisions that they make. By becoming conscious of the strategies they use, learners may be better able to evaluate their own learning.

Both Rubin and Oxford assume that teachers can promote strategy use, that teachers should "provide an environment which facilitates the identification by students of those strategies which work best for them" (p. 16), and also be

able to "suggest alternative strategies for organizing and storing information and encourage students to consider which strategies work best for them" (pp. 16-17). Moreover, Rubin assumes that, once teachers have done this, learners are capable of evaluating their own learning and deciding how to approach learning. This ability enables them to become more self-directed, not only within the classroom, but also outside of it.

Yet another assumption that Rubin makes is that language learning is like other kinds of learning. Learning is best accomplished by helping students to build on what they already know. Second language learners already have significant knowledge about language and communication. Teachers need to help students to assess this knowledge and build on it. Furthermore, learning is best achieved when students play an active role in the process. They need to have opportunities to "internalize" new information. This can be done through problem-solving activities. Rubin gives an example which clarifies what this means to second language learning.

> For example, often the meaning of a word or phrase (a problem) is only clarified by its use in a specific sentence or social situation. The only real way to understand a speaker's message or intention is to properly infer the meaning. By making inferences (a form of problem-solving) students are able to confirm

> their understanding of a conversation. Inferencing requires active involvement on the part of the student so that he/she may ascertain appropriate relationships among the words, phrases, and social interactions, and thereby determine the meaning of a social event. (p. 18)

As can be seen from the above example, problem-solving involves using learning strategies.

Hatch (1983) disagrees with the view that language learning is like other kinds of learning. She points out that some severely retarded children are able to speak at linguistic levels far superior to their cognitive abilities. However, this researcher would argue that this type of exception does not mean that the general population does not use generalized cognitive strategies to learn language. Vygotsky (1962) and Piaget (1963) have both argued that cognitive factors not only modify language acquisition, but that language acquisition in turn modifies the development of cognitive skills. They argue that cognitive and linguistic variables are interactive. Piaget (1963) states that language acquisition results from cognitive maturation. In fact, Jordan (1967) estimates that the vast majority of moderately and severely mentally retarded children will demonstrate severe language problems, and that even mildly retarded children may still experience language difficulty. Perhaps future research into the nature of mental

retardation will uncover why certain mentally retarded individuals are able to learn language more quickly and successfully than the majority.

The last assumption that Rubin makes is that monitoring is essential to language learning. She draws on the work of Morrison and Low (1983) to describe the monitoring process. She says that in this process learners will

(1) identify a problem

(2) make some sort of decision about the nature and the seriousness of the problem

(3) decide whether to correct the problem and if they decide to do so

(4) correct the error and

(5) notice any feedback on whether their correction was acceptable, permitting learning to take place. (p. 19)

This is not unlike the way in which learners create "approximative systems" in interlanguage. (Interlanguage will be more fully discussed in the following chapter). However, Morrison and Low's (1983) description of monitoring is quite different from, and should not be confused with Steven Krashen's (1981) Monitor Model, a theory of second language acquisition.

Benefits of Learning Strategy Training

If one accepts that information gained consciously can become automatic, then the role of learning strategy

training in enabling learners to acquire information consciously is significant. Learning strategy training assists learners to initially pay conscious attention to the learning process. Through practice, skills learned consciously eventually become automatic. This view is congruent with Anderson's (1985) conception of learning, as described by O'Malley and Chamot (1990). The following chapter will discuss this in detail.

Closely associated with the notion that information gained consciously can aid learning, is the belief that consciousness-raising aids learning. Learning strategy training seeks to raise learners' levels of consciousness with respect to their awareness of learning strategies. By increasing their awareness of the strategies that they are using and could potentially use, students are better able to make informed decisions about their learning.

Strategy training can be particularly effective for less able learners. Their ability to learn may be influenced by a number of factors, including aptitude and motivation, but both can, to some extent, be addressed through strategy training. It may not be that less able students lack language learning aptitude, but rather that they are unable to select and use appropriate learning strategies. Moreover, low motivation levels of these students is exacerbated by their lack of success in language learning. Assisting such students through learning strategy

training should result in making them more effective and more motivated learners.

For many teachers, the role change required by instituting learning strategy training will be viewed as a benefit. Teachers who employ learning strategy training in their classrooms do not see themselves as the sole possessors of knowledge that they pour into their students. They believe that their students already possess considerable knowledge about language and communication, and that it is their job as teachers to facilitate language learning by helping students to access this knowledge, to assess it, and build upon it, in part through the use of appropriate learning strategies. This view of teaching also fits in well with the communicative approach, an approach to second language teaching which is currently very popular. (The relation of the communicative approach to learning strategy training will be expanded on in the following chapter).

The last two benefits of learning strategy training enable students to take responsibility for their own learning, the students themselves are able to direct their learning, and this in turn promotes life-long learning, one of the goals of education. Rubin (1987) stated that "once trained students become the best judge of how to approach the learning task" (p. 17), that is , they become self-directed. She went on to state that "self-direction

promotes learning both inside and outside the classroom" (p. 17). This means that students can become life-long learners. These benefits may also be summarized as learner autonomy, and are perhaps the most significant contribution that learning strategy training can make to second language learning. In view of its significance, the concept of learner autonomy will now be more fully discussed.

Learner Autonomy

The topic of learner autonomy has been dealt with most extensively in the field of adult education. Since the subjects of the present research were adults, the notion of learner autonomy has particular relevance in this study. Wenden's (1987a) presentation of the topic will guide the present discussion.

Research by Penland (1978) showed that 80 per cent of adults in the United States are involved in some kind of formal, conscious learning each year, and that 75 per cent of them plan their own learning. This indicates that self-directed learning is highly popular. In fact, Brookfield (1985) has called self-directed learning the "distinctive paradigm of thought and education" of the seventies. According to Knowles (1976), another adult education researcher, "one mission of the adult educator ... can be stated positively as helping individuals to develop the attitude that learning is a lifelong process and to acquire the skills of self-directed learning" (p. 23). The rapidity

of technological change in contemporary society has forced a change in the traditional role of educators. Their purpose can no longer be restricted to solely transmitting knowledge which may quickly be rendered obsolete, but must also equip students to carry on with learning on their own, and adapt to technological and sociological changes. Educators should be evaluated in terms of their ability to accomplish this.

In the field of second language learning it is not true that learners' prior knowledge of language will become obsolete. However, Knowles' position has significant ramifications for second language teaching and learning. Individual differences of learners make it impossible for formal language programs, even those with curricula designed to respond to particular groups of students' needs, to be tailored exactly to any one students' particular needs. Also, the time constraints of most courses make it impossible for most students to reach their language learning objectives. Therefore students need to develop the skills necessary not only to maximize their learning potential within the classroom environment, but also to be able to continue their language learning once their formal training has ended. Through learning strategy training this need can be addressed.

The psychological characteristics of adult learners also predispose them to favour self-directed learning. Knowles (1976) believes that adults conceive themselves as

self-directing people, able to make their own decisions, and capable of managing their own lives, and that they bring a wealth of life experiences to the learning situation that should be capitalized on by instructors. If their prior experience is not recognized, or is rejected, adult learners may feel rejected. Furthermore, adults have a problem-centered approach to learning. They see it as a means of achieving a goal. For many adult ESL learners this means learning enough English to get a job and participate in their new society.

Charles Curran, a counseling psychologist, and second language educator, has acknowledged this desire of the adult learner for self-direction in his counseling-learning approach (1976). In this approach, learners progress from initial dependence on the counselor/instructor to the independence they exercise in other aspects of their adult lives. There are five stages in this approach. In the first stage the clients are totally dependent on their counselors to translate their ideas, word for word, to the group. Next, clients begin to make some attempts to speak in the foreign language. In the intermediate stage clients show growing independence, but still make many mistakes which counselors correct. In the fourth stage the counselor is only needed to provide idioms, subtle nuances of meaning, and more complex grammar corrections. In the final stage clients are independent, and the counselor's role is

restricted to giving tacit reinforcement of the clients' ability to communicate in the foreign language. To emphasize the sense of self-direction learners gain from this approach Curran quoted a Latin counselor's comment that, "One of the most striking phenomena was the amount of responsibility the students assumed for their own learning" (Curran, 1976, p. 71).

Wenden (1987a) also cites Stevick's (1976) recognition that learners' needs and experiences should be included as an aspect of second language learning. He cites research that demonstrates that surface language use alone is insufficient, that learning is enhanced when it is made meaningful for learners by relating it to their needs and goals. As Wenden puts it, "this capability and desire for autonomy which is at the heart of much adult striving, must be nurtured and developed. In this way language learners, themselves, may be enabled to better utilize the experience they bring to their language learning" (p. 10).

Wenden (1987a) quotes from Holec (1981) to elucidate what self-direction means for adult learners. Holec says:

> Let us remind ourselves that with total self-direction, action by the learner is concerned with:
>
> -fixing objectives
>
> -defining the contents and progression
>
> -selecting the methods and techniques to be used
>
> -monitoring the acquisition procedure

-evaluating what has been acquired. (p. 9)

At this point a note of caution is in order. This researcher's personal practical knowledge is that even though adults may be self-directing in most aspects of their lives, this is not always reflected when they return to formal educational settings. Perhaps because of cultural influences, or previous learning experiences, not all second language learners are, at least initially, willing to be fully autonomous or self-directed. In order to become self-directed they may need to critically re-examine their beliefs about the nature of education in general, and more specifically, their beliefs about the role they play in second language learning. If learners have not accepted that they can be responsible for their own learning then learning strategy training has the danger of becoming the presentation of a set of mechanistic tools for learning, devoid of personal significance to learners, and they will most likely resist it. Therefore, as Wenden (1987a) put it

> together with the training in the use of strategies, the fostering of learner autonomy will require that learners become critically reflective of the conceptual context of their learning. They must be led to clarify, refine and expand their view of what language learning entails. They should also understand the purpose for which they need to learn a second language. To add a more active meaning to Holec's term, critical

> reflection will lead to "self-deconditioning". However, even this will be insufficient, if critical reflection does not take into account the fact that learner will also need to learn to believe in their potential to learn and to manage their learning and to be willing to assume a more responsible role in the process. (p. 12)

The Present Research

This researcher believes that the potential benefits of learning strategy training are enormous. However, in order to design effective learning strategy training programs we first need to be able to identify and describe the actual learning strategies that learners use. Furthermore, we must not ignore the "critical reflection" component of learning strategy training. Including this component requires developing an awareness of the beliefs about language learning that learners bring with them to formal educational environments. The purpose of this research is to identify and describe the language learning strategies and beliefs of one class of adult ESL learners, and to try to identify the nature of the relationship between the two. In this way this research hopes to make a positive contribution to the field of learning strategy research.

In the next chapter we will review studies which have contributed to an understanding of these two issues, and out of which the present study grew.

CHAPTER TWO

A Review of the Literature

There are two pertinent areas of literature to be reviewed. The first addresses the theoretical underpinnings of the study. In this section a theoretical framework for understanding learning and communication strategies as they pertain to learning a second language will be outlined. Relevant literature on second language learning theory and cognitive learning theory will be reviewed. The second area of literature examines previous studies of communication and learning strategies with particular emphasis on those most pertinent to the present research.

Theoretical Background

The questions which concern us here are: What is meant by the terms learning and communication strategies? What is their role in second language acquisition? What factors affect their use? In this section, research literature that elucidates the opening questions will be examined. Answers to these questions necessitate a detailed discussion of theories of second language acquisition and of cognitive learning theory. It was in Selinker's (1972) Interlanguage hypothesis that the first mention of learning and communication strategies in an integrated theory of second language was made. Since then, Tarone (1977, 1981) and Faerch and Kasper (1984) have been particularly interested in these notions. Their interpretations of learning and

communication strategies will also be presented.

Communicative competence is a notion which is central to the present study. It is also one that has had a tremendous impact both in second language research and in second language teaching. Communicative competence is comprised of individuals' working or operative knowledge of linguistic rules and of their knowledge of how these rules are used to communicate meaning. Achieving communicative competence by means of the communicative approach has become widely endorsed in second language teaching. The curricula of many courses, including the course in which subjects in the present study were enrolled, have adopted the communicative approach. The theory of communicative competence which underlies the communicative approach encourages learners to take responsibility for their own learning. One way of doing this is by using learning strategies effectively. Therefore, communicative competence and its relation to language learning strategies will be elaborated. No description or discussion of second language theory is possible without reference to a general learning theory, in this case cognitive theory will be shown to be applicable and discussion will focus on its relationship to second language acquisition theory.

INTERLANGUAGE THEORY

Interlanguage theory provides a partial theoretical framework for this discussion. It treats language as a rule-governed system that learners acquire through a process of hypothesis-testing and rule modification. As learners strive to acquire a new language or target language (TL) they create rules about the TL, test them, receive feedback, and then modify their rules as a result of the feedback received. In this way, they pass through a series of approximative systems, or interlanguages (IL) before reaching the fully formed target language. Interlanguage is conceptualized as a continuum that learners progress through by creatively re-structuring the language. However, not all learners come to the end of the continuum, that is not all learners achieve full mastery of the target language. When learners stop progressing through this continuum they are said to have fossilized at a particular stage of interlanguage.

The assumptions that underlie interlanguage theory were stated by Nemser (1971). They were: (1) the approximative systems used by the learners are not the same as either the native language or the target language; (2) the approximative systems constitute an evolving series; and (3) that in a similar context, the approximative systems of learners at the same stage of proficiency are almost the same.

There are three principal features or essential characteristics of interlanguage. Ellis (1986) stated that the second language learner's interlanguage system is permeable. This mean's that the learner's rules at any stage of learning may be changed. Furthermore, this change is constant. Ellis (1986) used the word dynamic to capture the constant nature of this change. However, changes in learners' rule systems occur slowly. First a new rule is used in one context only, and then another and another, until it has been applied to all possible contexts. A third feature of interlanguage is that it is systematic. Learners base their performance plans on the rule-systems that they possess at that time. They do not operate in a haphazard fashion.

Selinker (1972) listed five processes of interlanguage which underlie its features: language transfer, transfer of training, strategies of second language communication, and overgeneralization of target language linguistic material. A student's native language (NL) and cultural background directly affect three of these processes: language transfer, strategies of second language learning, and strategies of second language communication. These three processes are not entirely mutually exclusive. There is some overlap between them. Selinker clarifies these terms by describing them in the following way:

> If it can be experimentally demonstrated that fossilizable items, rules, and subsystems which occur in IL performance are the result of the NL, then we are dealing with the process of language transfer; . . . if they are a result of an identifiable approach by the learner to the material to be learned, then we are dealing with strategies of second-language learning; if they are the result of an identifiable approach by the learner to communication with native speakers of the TL, then we are dealing with strategies of second-language communication. (pp. 216-217)

Tarone (1977, 1981) is one researcher who has built upon Selinker's notion of communication and learning strategies. The following are her definitions of these strategies and the criteria for their identification:

> Communication Strategy- a mutual attempt of two interlocutors to agree on a meaning in situations where requisite meaning structures do not seem to be shared. (Meaning structures include both linguistic and sociolinguistic structure). Necessary criteria:
>
> (1) a speaker desires to communicate meaning X to a listener;
> (2) the speaker believes the linguistic or sociolinguistic structure desired to communicate

meaning X is unavailable, or is not shared with the listener; thus

(3) the speaker chooses to:

(a) avoid - not attempt to communicate meaning X

or

(b) attempt alternate means to communicate meaning X. The speaker stops trying alternatives when it seems clear to the speaker that there is shared meaning.

Learning Strategy - an attempt to develop linguistic and sociolinguistic competence in the target language. Criteria (1) is not necessary for LS; basic motivation is not to communicate but to learn (pp. 294-295).

Both CS and LS are present in the second language classroom. It is not always easy to distinguish which is which. Although Tarone has used Criterion 1 (the motivation underlying the use of the strategy) as the basis for distinction, she admits that:

(1) we have no way of measuring that motivation;

(2) it may be that one's motivation is both to learn and to communicate; and

(3) one may unconsciously acquire language even if one is using a strategy solely to communicate a meaning (p. 290).

In light of these problems, this discussion will not always clearly differentiate between CS and LS, for in

practice this is not always possible. Sociopsychological and cultural factors all affect the students perception of, and behaviour in the second language classroom. In combination these are reflected in his use of CS and LS. The notion of communication strategy as defined by Tarone (1981) has been challenged by Faerch and Kasper (1984) as too narrow. Her conception was given in interactment terms, whereas they defined the term psycholinguistically. They clarified what they meant by this with the following diagram. The hatched area represents Tarone's conception.

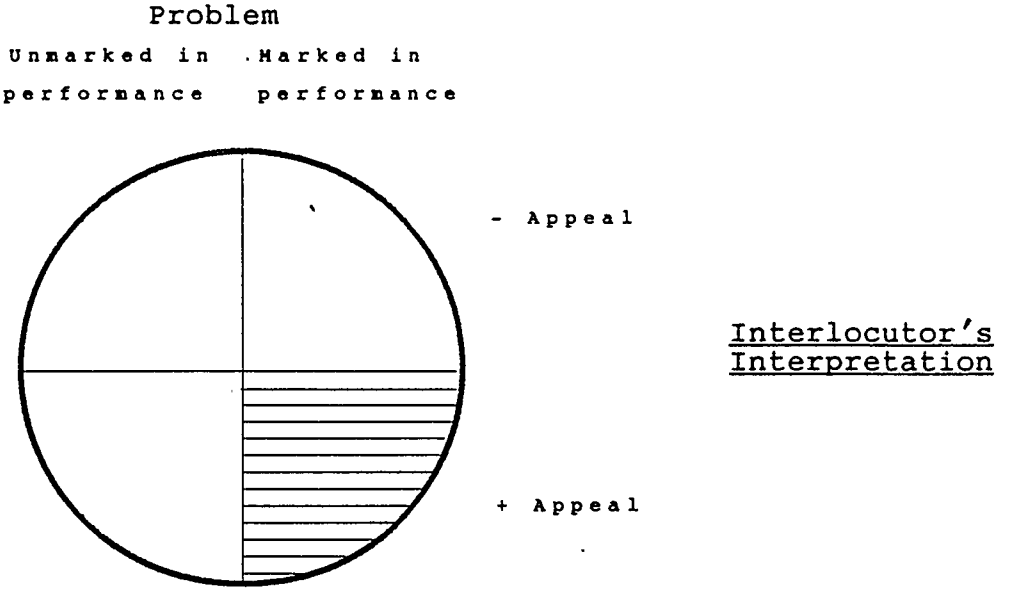


Figure 4. Manifestation of Communication Strategies and their Interactional Function

Note. Adapted from "Two ways of defining communication strategies" by Claus Faerch and Gabriele Kasper, 1984, Language Learning, 34, p. 60.

This expanded version of communication strategy is much more difficult to deal with. What is unobservable and at

times unconscious is included in the term. Standard empirical research practices cannot deal with such complexities. However, the validity of their argument is apparent. Tarone's view of CS is incomplete. Therefore, Ellis' (1986) definition will be used: "Communication strategies are psycholinguistic plans which exist as part of the language user's communicative competence. They are potentially conscious and serve as substitutes for production plans which the learner is unable to implement" (Ellis, 1986, p. 182).

COMMUNICATIVE COMPETENCE AND THE COMMUNICATIVE APPROACH

The term "communicative competence" was first used by Hymes (1971); it's attainment has become the main goal of the communicative approach to language learning. Communicative competence broadens the idea of competence beyond the limits of grammatical knowledge to include appropriateness of usage. A communicatively competent speaker is able to consider the context, the participants, register and style, in formulating and understanding language. Canale and Swain (1980) state that communicative competence has at least four components. They are: grammatical competence, sociolinguistic competence, discourse competence, and strategic competence. Grammatical competence is concerned with the forms of the language- the ability to recognize and use the syntactic, lexical, morphological, and phonological aspects of a language. Sociolinguistic competence means the ability to use the language appropriately in different social contexts.

Discourse competence refers to the coherence and cohesion of expression above the level of the single sentence. In this way a series of utterances comes together to form a meaningful whole. Finally, strategic competence is the ability to use techniques or strategies to overcome limitations in language knowledge that might otherwise result in communication breakdown. A person who possesses all four competencies will be able to function effectively in a language in a variety of social contexts. Such a person has achieved communicative competence. The notion of communicative competence is central to the communicative approach. In fact, Oxford, Lavine, and Crookall (1989) identified it as the first of four principles of the approach, which are:

1. the attainment of communicative competence as the main goal;
2. dealing communicatively with forms and errors;
3. an orientation which integrates the four language skills; and
4. a focus on meaning, context, and authentic language. (p.33)

This approach encourages learners to take responsibility for their own learning and to become active participants in the learning process. It recognizes that learners create approximative systems or interlanguages, and that this is an active process on their parts'. The teacher's role is one of learning facilitator rather than omnipotent director in the

classroom. Teachers encourage learners to use a great number of learning strategies. This makes sense when one reconsiders the four elements of communicative competence. Indeed, strategic competence specifically refers to strategy use. Some strategies such as metacognitive strategies are useful for language learning in general, whereas certain cognitive strategies facilitate learning of more specific aspects of competence. For example, the keyword method is a cognitive strategy used in learning vocabulary. This strategy addresses one area of grammatical competence, lexical proficiency. According to O'Malley and Chamot's (1990) definition, the keyword method is

> a mnemonic device in which individuals form a native-like homophone (the keyword) for the target word in the second language. The individual then imagines a scene in which the homophone and the referent object of the target word are interacting in some manner. Memory retrieval of the meaning of the target word consists of recalling the homophone,then recalling the imagined scene in which the homophone and the referent object are interacting. (p. 230)

(An in depth explanation and analysis of language learning strategies will appear later on in this thesis.) Thus, effective and appropriate strategy use is an integral part of the communicative approach. Students who can utilize

appropriate learning strategies can be expected to take responsibility for their own learning more effectively and efficiently.

COGNITIVE LEARNING THEORY

A study of learning strategies would be incomplete without a discussion of the role of cognition. Cognitive science seeks to discover how our minds work. It includes what happens in the mind between input and output, and includes learning and memory. Second language processes are described in similar terms to the way in which complex cognitive skills are described in cognitive theory. The theory can also be used to describe learning strategies as complex cognitive skills. In order to be useful the theory must be able to describe what learning strategies are, how information about learning strategies is stored in memory, how learning strategies are learned and may become automatic, and why they influence learning in a positive way. O'Malley and Chamot (1990), relying mainly on Anderson's (1980, 1983, 1985) mode of representing complex cognitive skills as production systems, have addressed these issues. They state that although some second language acquisition researchers (McLaughlin, Rossman, and McLeod, 1983; Spolsky, 1985) have made use of cognitive theory, none has given a precise description of the role of strategic processing in second language learning. At this point O'Malley and Chamot (1990) did not discuss Ellis'

(1986) Variable Competence Model of second language acquisition. This model does take strategic processing into account, but does not fully describe those processes. However, when O'Malley and Chamot described language production they included Ellis' (1986) strategies of semantic and linguistic simplification, a part of his model. In any case, by first explaining Anderson's (1980, 1983, 1985) interpretation of cognitive theory, and subsequently relating it to second language acquisition, O'Malley and Chamot have given a very detailed description of the role of strategic processing in second language learning. Their work will be summarized in the next section of this paper.

Explanation of the System Types of Knowledge

Anderson's (1983) model divides knowledge into two types, declarative and procedural. The former is what we know about, while the later is what we know how to do. Facts and rules would be examples of declarative knowledge, whereas the ability to speak a language would be considered procedural knowledge.

Declarative knowledge.

This is factual knowledge that can be verbalized. It is stored in long term memory in propositional representations. It is the meaning of these representations that is important, not the details. Propositional representations are composed of relations and arguments; verbs, adjectives, and other relational terms make up the

relations, while nouns are the arguments. These representations combine to form propositional networks. Still larger units are called schema. A schema is a configuration of interrelated features that define a concept. The value of schemata is that they facilitate making inferences about concepts and enable us to organize and understand new information.

Procedural knowledge.

Procedural knowledge is the knowledge of how to do something. It is acquired slowly and is represented in memory as condition/action, or if/then pairs. Anderson (1983, 1985) calls these pairs production systems. An example of a simple production system is:

If the kettle is whistling, THEN pour the water into the teapot.

Initially, this knowledge is declarative and the rules must be referred to every time the action is carried out, but after many repetitions, the rules are forgotten and the procedure becomes automatic.

Stages of Skill Acquisition

There are three stages involved in learning a complex cognitive skill. They are called the cognitive, associative and autonomous stages. When a learner has reached the third stage he has converted his declarative knowledge of a subject to procedural knowledge. Skill acquisition begins with the cognitive stage. Here the learning is conscious,

and in declarative form. The learner may receive instruction, observe a skill being executed, or attempt to figure it out on his own.

In the next stage, the associative stage, errors in the declarative knowledge of the previous stage are slowly detected and eliminated, connections among elements are strengthened, and the knowledge is changed to procedural knowledge, although declarative knowledge may co-exist at this time. Performance of the skill is slower than normal.

The third and final stage, the autonomous stage, is marked by automatic, unconscious performance of the task. There is no demand on working memory. Skilled performance improves gradually.

This theory assumes individuals must learn rules underlying performance of a complex skill before being able to perform that skill. This is called knowledge compilation, and has two components, proceduralization and composition. In the former, a learner creates a propositional representation of a series of actions and then converts it into production systems. The latter, composition, involves combining several productions that have become automatic into one production.

Two other aspects of this three stage system are controlled and automatic processing. In controlled processing, short term memory is used, and the process is conscious. On the other hand, automatic processing takes

place in long term memory, and as the name implies, is unconscious.

Discussion of the Three Stage System

The reliance on learning by formal rules, if interpreted too strictly, is problematic when one attempts to use this theory to explain second language acquisition. Not all of the rules of a language are explicitly known; even if they were, they would not all be taught in a second language classroom. Furthermore, many people learn to speak second languages without rule instruction, often without attending classes. However, this theoretical difficulty may be overcome if we think of rules in interlanguage terms, as rules that individuals generate about a language and that guide their performance in that language. As O'Malley and Chamot (1990) put it:

> The rules followed by a beginning learner may not be the easily identifiable rules of "grammar" but may emerge out of the individuals experiences, and thus represent an ad hoc usage rule. . . Individuals generate their own rules for language formations, whether learning takes place within or outside formal classroom environments and they use these rules in language comprehension or production whenever they are needed. (p.28)

This description of rule formation is compatible with the way in which interlanguge theory describes how

hypotheses are formed and used. The pedagogic implications of learning by formal rules are significant. Requiring students to learn rules as declarative knowledge is boring and time-consuming for the student. The second language could not be the medium of instruction, at least initially, for the students would be unable to understand the rules in the second language. A more efficient way of teaching complex skill acquisition, suggested by Gagné (1985) is by cued performance or modeling of the skill desired, coupled with repeated opportunities for practice. This is how the communicative approach teaches a second language. Modeling helps the learner at the hypothesis formulation stage, by restricting the possible number of hypotheses that he could choose from. Opportunities for practice are also useful. They enable the learner to formulate rules about the language, test them, and amend them based on the feedback received. Anderson doesn't talk about modeling as a way to learn per se, but essentially, the processes involved in comprehending modeling are the same as those involved in listening comprehension. Cognitive theory does discuss listening comprehension and will be elaborated on in the next section of this study.

Language Comprehension

Language comprehension is an active, constructive process that applies both to reading and to listening. It is characterized by three overlapping and recursive stages:

perceptual processing, parsing, and utilization of meaning. Each stage contains processing and analysis. In the first phase, attention is paid to the text, and portions of it enter short term memory. In parsing, words and phrases are decoded by matching them with their representations as declarative knowledge in long term memory. This is analogous to using a mental dictionary. During utilization, we relate a mental representation of the text meaning to declarative knowledge in long term memory. There are two types of declarative knowledge that help to identify the meaning of a text; real-world, and linguistic. Processing of the text using real-world knowledge is called top-down processing, whereas using linguistic knowledge is called bottom-up processing. Both types of processing are necessary, but more proficient readers and listeners rely more on top-down processing. Second language learners tend to focus on bottom-up processing more than natives. Perhaps they are aware of their linguistic limitations and focus attention on trying to overcome them, at the expense of top-down processing.

Language Production

Language production is also an active, constructive, meaning-based process. It applies to speaking and writing. Like language comprehension, it consists of three stages that are also recursive and overlapping. However, the stages themselves are not the same as those used in language

comprehension. Anderson calls them; construction, transformation and execution. During construction, first the communication goals are set, then the facts to be expressed are selected by searching through declarative knowledge; and finally, a decision is made about how to structure the information selected. The speaker or writer uses several types of knowledge in order to structure the information he wishes to express. These types of knowledge correspond to the four competencies of communicative competence. Discourse knowledge or competence involves calling up different types of schemata. Certain schemata are culture based. (This will be discussed in more detail later.) Thus, the second language learner may need to modify his script, even though his goal may remain the same. In the next stage, transformation, language rules are applied to transform intended meanings into the form of the message. This is done by invoking production systems. More proficient writers, at this stage, focus on the meaning they are attempting to convey, while less proficient writers concentrate more on grammatical forms and spelling. This has significant implications for the second language learner, for his knowledge of forms has not yet become proceduralized. Therefore he must direct conscious attention to this aspect of his writing. Finally, execution occurs. At this point the message is expressed in its audible or observable form. This stage is almost automatic

and unconscious for a native. The second language learner may have to concentrate on pronunciation. Writers accustomed to a different graphic system would need to pay careful attention to handwriting skills. At all three stages of language production the second language learner has increased demands on his cognitive capacities. Ellis (1986) suggests that the learner attempts to overcome this by means of semantic and linguistic simplification. These are features of interlanguage. At the execution stage, the second language learner receives feedback, and may, on the basis of this feedback, go back and forth between the processes of construction, transformation, and execution, making changes. This is called monitoring.

Learning Strategies as Cognitive Skills

According to O'Malley and Chamot's (1990) interpretation of Anderson's (1980, 1983, 1985) work, strategies are no different than any other complex cognitive skill. They may be described as a series of productions that become proceduralized over time. There are three categories of learner strategies; metacognitive, cognitive, and social/affective. A metacognitive strategy involves thinking about or knowledge of the learning process; planning, monitoring, and self-evaluation of learning are examples of metacognitive strategies. A cognitive strategy is one that involves mentally manipulating or changing tasks or materials in order to improve understanding, acquisition,

or retention. The third type, social/affective, uses either social interaction or self-control over affect to promote learning. Since strategies are procedural knowledge, they are acquired by passing through the three stages of procedural skill acquisition previously described. The nature of procedural knowledge enables prediction of the circumstances under which it is likely that a new strategy will be used. It is unlikely that one would use a new strategy to learn material perceived as very difficult because the effort involved in using a new strategy with an already cognitively demanding task would seem overwhelming. Similarly, it would not seem worth the energy to use a new strategy on an extremely easy task which could be effectively accomplished using familiar, already proceduralized strategies. Also, if a new task is seen as similar to one that has been done before, the learning strategies previously used will again be used to accomplish the new task.

Second Language Acquisition and Cognitive Theory

Declarative knowledge.

The nodes of declarative knowledge are meaning based; they are not a direct representation of language. Transfer from a first to a second language, according to Anderson's model,is hypothesized to occur by going through three steps. In the first step, the second language is chosen for use. In the second step, information originally stored through

the first language, but now stored as non-language- specific declarative knowledge is obtained. Third, the information is connected to the second language forms needed. The first and third steps use short-term memory, while the second step uses long term memory.

Some kinds of declarative knowledge are easier to transfer than others. There are two kinds of schemata or organizational frameworks, organization by natural categories and organization by events. The former is scientific knowledge, while the latter consists of personal recollections, story scripts, and social cognition. Events schemata are culture specific, and as such are more difficult to transfer.

Metalinguistic knowledge may be considered declarative knowledge. It most often comes about as a result of schema induction, but may also result from patterned generation. Schema induction occurs when an individual sees the resemblance between areas of two languages when they occur at the same time or shortly after one another. Patterned generation occurs when a teacher provides the model for the comparison between the two languages. However, metalinguistic knowledge cannot be formed unless the learner has achieved facility in his first language and has had sufficient exposure to the second language. For example, very young children might not have sufficient first language mastery to form metalinguistic knowledge.

Procedural knowledge.

Communicative competence cannot be reached with declarative knowledge alone. It is essential that declarative knowledge be supplemented by procedural knowledge. This means that instruction should focus on language as a skill not as an object of study. The rules of communicative competence may be represented by production systems.

At this point, a re-examination of the stages of skill acquisition as they relate to second language acquisition further illustrates the utility of cognitive learning theory. The cognitive stage is marked by intensive attention to and deliberate efforts to make sense of the second language. This is when the silent period as described by Krashen (1980) occurs. During the silent period, the learner is focusing on comprehension, deliberately postponing the more difficult process of production. The next stage, the associative stage, parallels interlanguage. Because effort is directed towards language learning, it is difficult to learn new tasks at this time. In the final autonomous stage, communicative competence has been achieved. The learner's language comprehension and production are native-like. He is able to learn new information in the second language.

This model disagrees with the distinction between acquisition and learning made by Krashen (1981). Initial

learning does not necessarily happen without conscious awareness, even though the learner may not be able to express the rules he uses. Awareness and conscious control depend on the familiarity of the skill and the nature of the information. The model also comments on the rate and type of language skill acquisition. Perceived relative difficulty can affect "chunking". Difficult chunks will be processed at the cognitive stage of acquisition, whereas easier chunks would be processed at the associative or autonomous stages. Perception depends on a number of factors, including: age, context of learning, learning style, affective considerations, prior declarative and procedural knowledge, and the ability to deploy effective learning strategies.

Retention and Attrition of Knowledge

In order to be fully-descriptive cognitive learning theory must also address the issues of retention and attrition of knowledge. Cognitive theory predicts that procedural knowledge that is still in the cognitive stage and is declarative in representation would be lost first. This would include vocabulary and socioliguistic competence. Grammatical competence should be retained. At the present time no studies have investigated this area.

Research on Learning and Communication Strategies in Second Language Acquisition

Studies of learning strategies have investigated a number of aspects of the topic. There have been numerous

attempts to identify and classify strategies. Researchers have also tried to discover which strategies are more successful with which tasks at which levels of second language proficiency. They have also looked at the extent and use of strategies in terms of who uses them, considering the effects of sex, profession, ethnicity, motivation, psychological type, and beliefs about language learning. How successful and unsuccessful language learners use learning strategies has also been the subject of investigation. Types and effects of strategy training also appear in the research literature. These studies have used a multiplicity of research methods to collect their data.

Carton was the first researcher to report an investigation of learning strategies (1966, 1971) interested in the influence of inference in foreign language learning, he noted that some learners made more and better inferences than others. Those learners who used more and better inferences than the others saw language learning as a problem-solving process and invoked their prior experience and knowledge to assist in the process.

Rubin was the next pioneer in learning strategy research. She tried to identify the strategies used by successful language learners (1975). She identified these strategies through her own observations and through observations of other teachers and learners. She identified the following variables: learner psychological

characteristics, learner communication strategies, learner social strategies, and learner cognitive strategies. Rubin subsequently (1981) divided the strategies into those which contribute directly and indirectly to learning. She advised (1981) that the best method of collecting data for this type of research was by prolonged observation combined with directed diary use. In directed diary use, learners are made aware of learning strategies and then asked to keep a diary commenting on their use of the strategies for various tasks.

The first large-scale study of learner strategies was conducted by Naiman et al (1978). One part of the study involved interviewing thirty-four adults who had successfully learned a second language. They identified five Strategies of Good Language Learners (GLL's). They are:

1. GLL's actively involve themselves in the language learning task . . .
2. GLL's develop or exploit an awareness of language as a system . . .
3. GLL's develop and exploit an awareness of language as a means of communication . . .
4. GLL's realize initially or with time that they must cope with the affective demands made upon them by language learning and succeed in doing so . . .
5. GLL's constantly revise their L2 systems (pp. 13-15).

They also identified a number of techniques which focussed on specific aspects of language learning. Those aspects were: sound acquisition, grammar, vocabulary, listening comprehension, learning to talk, learning to write, and learning to read. An example of a technique to aid sound acquisition is repetition after a model. Later classification schemes (O'Malley et al.,1985; Oxford, 1990) would not make the distinction between strategies and techniques; nor would they specify the aspect of language learning associated with a particular strategy.

Bialystok and Frolich (1978) examined two functional strategies, inferencing and functional practice, and two formal strategies, monitoring and formal practice. In functional strategies, the focus is on language use, whereas in formal strategies the focus is on language form. High school students who were studying French as a second language, filled out a questionnaire on their use of these strategies. They then correlated their reports with independent measures of attitude, motivation, language aptitude, and French achievement. All four strategies had positive effects on certain kinds of tests, and functional strategy use significantly modified performance for all skills.

Reading strategies of foreign language learners have been studied extensively by Hosenfeld (1977, 1978, 1979, 1981). She began attempting to identify reading strategies

by using the "think aloud" type of introspection (1977). In studies that employ the think aloud method of data collection subjects are first given training in the method, and are then asked to complete a task and verbalize their thoughts while doing so. This process is tape recorded for later analysis by the researcher. Hosenfeld found that successful readers use some form of contextual guessing that is based upon inductive reasoning. They also evaluate the appropriateness and logic of their guesses. Hosenfeld was also one of the first to wonder to what extent a learner's selection of strategies was influenced by his "mini-theory of second language" (1978). In her 1979 and 1981 articles, she reported on the first efforts to provide strategy training to learners. The recipients of this training were learning French as a foreign language. The skill focussed on was reading comprehension. She first identified the strategies the students were currently using by collecting think aloud data. She then explained the importance of strategies and helped the students to identify their own strategies in English reading. She then encouraged them to transfer those strategies to reading French material, and also provided direct strategy use instruction, mainly by explanation and practice. She did not do pre- and post-testing, so it is difficult to assess the outcome of the training.

Cohen and Apek have been interested in vocabulary learning strategies (1980, 1981). The subjects of their research were English- speaking students learning Hebrew abroad. They usually tried to memorize words, but they did use other strategies that sometimes helped in their retention of the words. The most successful students used elaboration and association strategies. The researchers also noted some strategies that interfered with vocabulary learning: poor memory techniques, poor inductive inferencing strategies, and poor deductive reasoning. They came to the tentative conclusion that use of certain strategies can be helpful in vocabulary learning. They also remarked that data collection by classroom observation alone was not an efficient way to collect data on strategies, for there was little talk and most of it was teacher directed. They got more information through anecdotal student reports.

Politzer (1983) conducted a study similar to Bialystok and Frolich's (1978). Ninety undergraduate students enrolled in foreign language courses in French, Spanish, and German were asked to respond to a questionnaire concerning their engagement in certain selected learning behaviours. Three general complexes of items were used: general behaviours, classroom behaviours, and interactions with others outside of class. He correlated these with the learner's grades, and teacher evaluations of their progress, effort, and participation. The classroom behaviour scale

items gave the highest correlation. However, the researcher felt that course level, and methodology also influenced the results.

When Politzer and McGroarty (1985) conducted another study in this vein, they did not find the same correlation. The subjects of this study were taking an ESL course designed to prepare them for graduate work at the university level in the United States. Roughly half of the students were Asians while the other half were Hispanics. Politzer and McGroarty did find that ethnic group differences were significant on some items. Even though Asian subjects engaged in fewer of the assumed "good" learning behaviours than Hispanics, they made greater gains in linguistic and communicative competence. The results of this research are confusing. The authors suggested that "good behaviours may be differentially appropriate for various types of skills..."(p.118). Also, certain complexes of strategies may be more appropriate for linguistic competence while others relate more to communicative competence. They suggest that certain learning strategies may be culturally specific and warn that caution in prescribing good learning behaviours is warranted.

The notion of cultural specificity of learning strategies has been challenged by the results of a study conducted by Willing (1985) reported by Chaudron (1988). He found no difference in strategy use with any ethnic group,

age, or sex. This was a particularly large sample consisting of 517 adult ESL students in Australia.

The focus of a study by Chesterfield and Chesterfield (1985) was on identification of, and longitudinal use of learning strategies. The subjects of the study were young Spanish children learning English. They were observed four times in two years. Chesterfield and Chesterfield identified 12 strategies and noted their frequency of occurrence. Their method of data collection restricted them to reporting on observable learning strategies only. However, they did find a sequence in strategy use. Initially, the students chose receptive strategies such as repetition and memorization. Later on, they increased their repertoire of strategies to include more interactive ones such as requests for clarification. The researchers suggest structuring classroom activities so that they coincide with the developmental tendencies of the children.

Two papers by O'Malley and his colleagues report on a two phase study of learner strategies (O'Malley et al. 1985a, 1985b). The objectives of the first phase of the study were: to identify the range and variety of learning strategies used by good language learners, to classify the information into a usable framework, to discover which strategies were associated with which tasks, and to see if there were different patterns of strategy use between beginning and intermediate students. The subjects were 70

high school ESL students who had been judged as good by their teachers. The majority of the students were Hispanics, a few were Asians, and the rest came from several other ethnic groups. The researchers collected their data by classroom observation and through interviews with students and teachers. They found that student interviews were the most useful. They remarked that observation was not helpful because strategies occurred either infrequently or not at all. Teachers tended to confuse teaching and learning strategies, and spoke mostly about the former. As a result of their findings, the researchers grouped strategies into three broad categories - metacognitive, cognitive, and social mediating. They accounted for 30, 53, and 17 percent of strategy usage respectively. Differences were found between beginning and intermediate level students' use of learning strategies. Metacognitive strategies used by intermediate level students were mainly self-management, advance preparation, and self-monitoring strategies, whereas beginning level students relied heavily on metacognitive strategies such as selective attention and delayed production. The quantity of metacognitive strategies used by intermediate learners was greater, which suggests that a certain level of exposure to the second language must occur before students are able to reflect on their own learning style, plan for learning opportunities, and compare their own output to a native speaker's. There

were similarities and differences between cognitive and social-affective strategies used by beginning and intermediate students. Common to both groups were repetition, note-taking, questioning for clarification, and cooperation. Beginners used translation and imagery more than intermediates, while intermediates used more contextualization. On the whole, they found that strategies were used most frequently for the least complex, non-integrative language learning tasks, for example, vocabulary learning, and that the strategies used were often ones that required little cognitive processing of the learning materials. For example, the incidence of repetition was much higher than that of inferencing.

In the second phase of the project the students received training in the use of selected learning strategies. The students involved in this phase of the study were 75 high school ESL students from three different schools. They were all at the intermediate level and were mainly Hispanic and South-East Asian. The purposes of the study were: to determine the effect of strategy training on strategy use; to see if it could improve learning of both integrative and discrete tasks; to see if there were differences in the effectiveness of strategy training for different students. Strategies to aid vocabulary learning, listening comprehension, and speaking ability were taught. In each school the students were divided into three groups.

One group received metacognitive and cognitive strategy training, another group received cognitive strategy training, and the third group, the control group, received no strategy training. The training took place over eight days, one fifty minute period a day. The students received instruction in two of the three areas in one period. Pre- and post-tests were administered. The results of the tests were significant for speaking. The post-test showed no difference for listening; however the results of the daily tests on topics that the students had expressed interest in were significant. The researchers felt that the lack of significance of the post-test results on listening could be explained by the increased difficulty and decreased interest level of the test. Strategy training made no significant difference in vocabulary learning. O'Malley et al claim that ethnicity was a factor here. South-East Asians resisted the strategy training (imagery). They preferred rote repetition. This is the predominant method of learning in Asian school systems. The results of strategy training in vocabulary were significant if only the Hispanic students were counted. The authors concluded that strategy training in a natural classroom environment can be effective for integrative language tasks such as speaking, and that listening effectiveness depends on task difficulty.

Cohen (1987) focussed on a very specific area of learning strategies. He was concerned with how students

processed the feedback they received from writing assignments. He surveyed 217 university students. They were in writing, ESL, French, German, and Hebrew classes, and rated themselves as from poor to excellent students. They answered a questionnaire about what they did with teacher feedback on their writing assignments. Monitoring, a metacognitive strategy, could be discerned by the percentage of students who read over their papers. Forty-seven per cent of the students read all of it, 34 percent read most of it, 17 percent read some of it, and 2 percent read none of it. The self-reported poorer students tended to only read some, if any of their paper over. Cohen noted that the teachers' comments were mainly restricted to grammar and mechanics, and that the students paid the most attention to comments of this nature. The significance of this is that students are being encouraged to do bottom-up processing. Poorer students evidenced less monitoring by not attending as carefully to the teachers' comments as the better students did. The most popular cognitive strategy used to process teacher feedback was summarizing information in the form of making mental notes. The least popular strategy, but most used by the poorer students who had re-read all of their assignments, was repetition. They re-wrote their papers. All students showed a limited repertoire of learning strategies in this particular area.

In their 1987 study, Abraham and Vann chose to compare the learning strategies of a good learner and a poor learner. These learners were chosen from a class of fifteen students who were taking an intensive ESL program designed to help them pass the TOEFL (Test of English as a Foreign Language). They collected data from all of the students, but chose to report on these two particular students because, although they shared similar background characteristics (native language, educational/professional background, motivation, cognitive style, and intelligence), one was considerably more successful than the other. Success was judged by their final TOEFL mark, and their teacher's assessment of their ability to function in a university environment. Strategies were elicited in two ways. The students were interviewed to obtain background knowledge about them, and also to ask them about their strategy use. These interviews were taped. Analysis of the interviews included observations of the strategies the students were actually using during the interview, as well as those that they reported using. The students also provided think-aloud data on four tasks: a verb tense exercise, an article usage exercise, a cloze test, and a composition. Strategies were classified using Rubin's (1975) taxonomy. Gerardo and Pedro were the names of the good and poor learners respectively. Gerardo was much more concerned with grammatical form than was Pedro. In the

interview, he asked for and practiced the correct form more frequently than Pedro; in the think-alouds, he frequently monitored his work. He used a greater range of strategies than Pedro. Pedro did everything as quickly and simply as possible. Their language learning philosophies may have guided their strategy choices. Gerardo took a broad view of language learning; he was concerned with both form and function. He wanted to know how the forms could enable him to communicate. Pedro saw language as vocabulary. If he could learn enough words then he would be able to communicate. Abraham and Vann also speculate that background factors were important in explaining the difference between the two men. Gerardo had a university education, and had worked as a college instructor, whereas Pedro had neither post-secondary education nor work experience. Gerardo was also more intelligent than Pedro. Raven's measure of intelligence was used to assess the subjects' intelligence. Gerardo was field independent; this may have helped him to analyse and monitor. On the other hand, Pedro's field dependence may have limited his analytical ability. A personality characteristic of Pedro may also have been salient. Pedro seemed to value haste. He completed everything as quickly as possible, and never reviewed his work. Abraham and Vann conclude by identifying several problem areas in learning strategy research. They say that tools for assessing background variables are

lacking, and that this is compounded by the cross-cultural nature of second language learning. They comment that current methods of collecting learning strategy data are cumbersome and that classification systems of strategies need further development and standardization.

Wenden (1987b) is another researcher who has taken an interest in language learning philosophies and how they affect learning strategy choice. She conducted semi-structured interviews with 25 very advanced level ESL students who were attending a part-time ESL class at a university. During the interviews she asked them about the contexts where they used English, and the language learning activities they engaged in. The students fell into three groups that she called: use the language; learn about the language; and, personal factors are important. If we apply cognitive learning theory here, it seems probable that the first group would want to acquire procedural knowledge while the second group would be most interested in declarative knowledge. Wenden found that the first group used many communication strategies while the second group relied heavily on cognitive strategies. The third group did not show any particular pattern. There was also a difference in metacognitive strategy use among the groups. They all used selected attention, but what they attended to was not the same. The first group focussed on meaning of the language, the second group on form of the language, and the third

group on the feelings they were experiencing at the time. Self-management strategies also differed. The language use group sought out contexts that could facilitate understanding (e.g.TV), and opportunities for "real" practice. The second group preferred contexts that provided "good" input at "appropriate" levels. The third group used affective criteria in choosing contexts for second language use. Wenden concluded by asking three questions. She wanted to know if there were more than three major categories of beliefs, how beliefs are formed, and how they affect strategy choice.

Wenden (1987c) has also experimented with learner training. The subjects of the study were the members of two advanced ESL classes at Columbia University. They were taking a seven-week, twenty hour a week program. At the outset of the program they were informed that the topic of their two-hour weekly discussion fluency class would be language learning. The program was designed to be informed training, focusing on the development and refinement of metacognitive awareness. The materials consisted of short lectures and readings about the nature of language and language learning. The tasks included comprehension exercises, discussions based on the readings and lectures, contact assignments, and directed diary writing. The experiment was not successful. One class refused to continue with the training and it had to be dropped after

only three weeks, and the class that continued did so unenthusiastically. Less than half of the students in this class agreed that the training tasks had been useful. Wenden had to conclude that learner training was not considered relevant in its own right.

Porte (1988) examined the learning strategies utilized by fifteen under-achieving ESL learners in private language schools in London, and found that they used strategies for dealing with new vocabulary similar to those found in Naiman's (1978) study of the good language learner. He speculated that these students may not have had much language learning aptitude and/or the extent and frequency of their use of strategies may have been insufficient.

Tran (1988) specifically studied sex differences in learning strategy use among Vietnamese adults over aged 40 in the United States. The classification system that he used for strategies only included what Rubin (1981) called "creates opportunity for practice." For example, two of his strategies are, watching TV, and practicing with American friends. In considering his results, one should be aware of Tran's narrow interpretation of strategies. He found that men made more extensive and more varied use of learning strategies than did women. He attributed these differences to the differing roles males and females have played in traditional Vietnamese society.

Padron and Waxman (1988) looked at the correspondence between self-reported strategy use and performance on reading comprehension. This was a study of Hispanic ESL students from grades three to five. They answered a Likert-type questionnaire about their use of 14 reading comprehension strategies. (Once again, a unique strategy system was used.) The authors believed that half of the items would have a positive effect on reading comprehension while the other half would have the opposite effect. They did pre-and post-testing of reading comprehension. They found that six of the seven most commonly used strategies were positive but that there were no significant correlations between their use and achievement on reading comprehension. The only significant correlations that they found were two negative ones. They were "thinking about something else" and "repeating the main idea again and again." In this instance, it seemed that negative strategies may have interfered with learning, while positive strategies were not influential. It is possible that when they answered the questionnaire, the students were thinking about the strategies they use in reading Spanish and that they had not yet transferred them to reading in English.

Chamot and Kupper (1989) completed a three year study of American high school students learning Spanish. The study had three components: (a) a Descriptive Study, which identified learning strategies used in studying foreign

languages, (b) a Longitudinal Study, which identified differences in the strategy use of effective and ineffective language learners and analyzed changes in strategy use over time, and (c) a Course Development Study, in which foreign language instructors taught students how to apply learning strategies.

The descriptive study was a partial replication of O'Malley and his colleagues' previous (1985a) study. Interviews were held with groups of three to four students. The interviewers described types of learning tasks the students would be familiar with, and asked them about tricks and techniques they used to complete those tasks, about task preparation and management, and about checking and revision. The foreign language learners used all of the strategies that the ESL learners had employed, with the exception of one cognitive strategy, keyword. They also identified several more strategies than the ESL learners had mentioned. These strategies related to reading and writing tasks which had not been included in the ESL student interviews. There were similar patterns of use. Both ESL and EFL students use more cognitive than metacognitive strategies. The metacognitive strategy most used is planning. Beginning students relied more on repetition, translation, and transfer, while more advanced students used inferencing. All ability levels used strategies, but higher levels used more of them.

In the longitudinal study, effective and ineffective students at the beginning, intermediate, and advanced levels were studied for four semesters. The attrition rate was high, especially for the ineffective students. Unfortunately, Chamot and Kupper do not comment on the attrition. Think-aloud data were gathered during tasks. The authors noted that very easy tasks were completed quickly and didn't elicit much strategy use; similarly, very difficult tasks did not elicit strategy use either. The students would say "I don't know," and give up. After analyzing these data, the researchers further refined the strategy classification system. They did not detect any pattern of strategy shift over time. Strategy choice seemed to be related to the type of task. Good students used a greater range of strategies, and used them more frequently. They were more adept at problem identification and called upon prior knowledge to help them. Affective factors influenced novice learners. They tended to be scared by problems and abandon them. Chamot and Kupper also cited motivation as a factor in success, although they did not elaborate on what they meant by this.

In the third phase of this study, instructors taught strategy training to students for listening, reading, and speaking tasks. The researchers observed the instruction. It was direct. The students were informed of the purpose and value of the strategies. The instruction was given in the

students' first language. The researchers said that the students seemed to enjoy the classes, and some of them commented that they intended to use the strategies learned on future tasks. The importance of this study is that it shows that teachers themselves can do learning strategy training. Previously only researchers had implemented strategy training (Hosenfeld, 1979, 1981; Cohen and Apek, 1981; O'Malley et al., 1985b). Chamot and Kupper note that success is dependent on teacher interest, ability, and planning time available. It's also important that the teacher be able to convince her students of the value of the training. One teacher dropped out of the training for this reason. Wenden (1987c) also experienced difficulty on this count.

Learning strategies used in listening comprehension have also been studied (O'Malley, Chamot, and Kupper, 1989). They wanted to know if there were particular strategies that would be associated with Anderson's (1983, 1985) three stages of listening comprehension. Five effective and three ineffective high school, intermediate level, Hispanic ESL learners participated in the study. Their effectiveness was identified by their teachers based on the following criteria: attentiveness in class, ability to follow directions without asking for clarification, and willingness to guess unknown meanings. The students listened to three passages that had been taped with pauses. In the pauses

they gave think aloud responses. They chose to speak in Spanish while doing this. The researchers found that there were particular strategies associated with each phase, and that good listeners not only used more strategies, but also used them more frequently. Good listeners combined bottom-up and top-down processing, while poor listeners relied almost completely on bottom-up processing.

In this last learning strategy study to be reported on, Ehrman and Oxford (1989) using a highly sophisticated group of foreign language learners, studied the effects of sex differences, career choice, and psychological type on adult language learning strategies. They found that women and professional language trainers reported greater use of language learning strategies. Professional language trainers are presumably also successful language learners; and based on the research thusfar it appears that success in language learning may be associated with increased strategy use. Therefore, this finding is not surprising. Psychological type, which was determined by using the Myers-Briggs Type indicator which describes four types, also influenced use of learning strategies. Intuitive-feelers, used the most strategies. Many women are intuitive-feelers. This may account for the greater use of learning strategies by women. The participants all completed the "Strategy Inventory for Language Learning". The SILL is a 121 item, Likert-scaled, self-report instrument which assesses the

frequency with which the respondents use a variety of different techniques for second or foreign language learning. Items included in the scale are based on a combination of previous researchers' taxonomies, primarily Rubin's (1975, 1981) and O'Malley and his colleagues (1985 a, 1985b).

SUMMARY OF LEARNING STRATEGY RESEARCH

Research in learning strategies is still in its infancy. The methodology and descriptive framework for observing or eliciting learning strategies is not well developed. Numerous taxonomics have been utilized, some using the same terms with different definitions of them, making comparison of studies difficult and at times impossible. The categories developed thusfar are not necessarily mutually exclusive or exhaustive. Furthermore, many strategies are not overtly observable or only occur very infrequently. This casts doubt on the reliability of observation only studies, especially those where the length of observation has been short. The degree of conscious and unconscious use of strategies by the learner is also problematic for the researcher to capture. Studies that rely on self-report only may miss these unconscious strategies. Students cannot be expected to report on strategies that they are unaware of. Students may forget to report particular strategies or may report using strategies which they in fact do not use. They may report that they

use strategies which they think they should use rather than the ones they actually use. Also, because a number of variables interact in learning environments; it is simplistic to try to attribute a cause effect relationship to use of various strategies and degree of success in language learning.

Communication Strategies Research

Although communication strategies are being reported separately here, there is considerable doubt over the wisdom of considering them apart from learning strategies. Even the definition of communication strategies is problematic. Researchers (Tarone, 1977, 1980; Tarone, Cohen and Dumas, 1983; Faerch and Kasper, 1983; Ellis, 1986) have differed over the meaning of the term itself. Tarone defined the term from an interactionist perspective whereas Faerch and Kasper, and Ellis gave it a wider psycholinguistic definition. Tarone's definition includes only strategies that compensate for missing knowledge during conversation, whereas Faerch and Kasper and Ellis argue that these strategies are also applicable to reading and writing. They also emphasize that they may be either conscious or unconscious. The main distinction between learning and communication strategies is the motivation behind their use. Learning strategies are used with the primary purpose of learning the language, whereas communication strategies are used to communicate in the language. Tarone herself has

stated that it is not always possible to discern motivation. Furthermore, the distinction between learning and communication is not justified, for "Learning takes place through communication" (Faerch and Kasper, 1983, p. xvii). "Communication, learning, and instruction interact and influence each other" (Candlin, 1983, p. x). The split between communication strategies and learning strategies appears to be an unnecessary one. In fact, in Oxford's (1990) taxonomy of learning strategies the distinction has not been made, but has included what Tarone (1981) defined as communication strategies as compensation strategies. In Oxford's (1989) article she stated that compensation strategies are useful in developing discourse competence, one aspect of communicative competence. (It has previously been stated that the attainment of communicative competence is that goal of the communicative approach.) Therefore, the use of communication/compensation strategies is entirely appropriate in a second language classroom that uses this approach. It would be preferable to consider communication strategies as a sub-set of learning strategies but most of the authors of research on learning and communication strategies have maintained the distinction. For this reason, but with serious reservations, the present research reviews communication strategies literature separately. However, because communication strategies are really a sub-

set of learning strategies, the literature reviewed in this section is shorter than in the previous section.

Most of the research on communication strategies has been theoretical rather than empirical. Different methods have been used. Some researchers (e.g. Varadi, 1980; Tarone, 1977) have compared learners' performance on story-telling tasks in their first and second languages. A similar approach involved comparing native speakers' and second language speakers' performance of the same task (Hamayan and Tucker, 1980; Ellis, 1984). Focus of study has also been on particular lexical items (Bialystok, 1983; Paribakht, 1985), either by embedding them in a picture story re-construction task or by asking students to label pictures and translate them from their first language. The least contrived of the studies video-taped conversations between second language and native speakers (Haastrup and Phillipson, 1983). To date, no examination of communication strategies in the classroom environment has been reported in the mainstream literature. Given the paucity of research in the field and the unresolved theoretical and methodological problems, research findings are not extremely reliable. Ellis (1986) has summarized them in terms of the effects of different variables on the use of communication strategies.

1. Effects of proficiency level

The proficiency level of the learner influences his choice of strategy. Tarone (1977) notes that the less

able students whom she investigated preferred reduction to achievement strategies. Ellis (1983) also found that one of the learners in his longitudinal study opted for reduction-type behaviour in the earlier stages, but increasingly turned to achievement-type behaviour as he progressed. Ellis (1984), not surprisingly, found quantitative but not qualitative differences between the strategy use of ESL children and native-speaking English children. The former relied more on avoidance, and the latter more on paraphrase, Bialystok (1983) found that advanced learners used significantly more L2-based strategies and significantly fewer L1-based strategies than less advanced learners. In general, therefore, L2 learners of limited proficiency prefer either reduction strategies or L1-based achievement strategies while the more advanced learners prefer L2-based achievement strategies such as paraphrase.

2. Effects of the problem-source

There is less evidence to demonstrate that strategy choice is influenced by the specific nature of the problem, but this would seem likely. Tarone (1977) notes that code-switching is more likely when the first and second language have close cognates. Hamayan and Tucker (1980) found the extent to which L2 child

learners displayed avoidance depended on the grammatical structures involved.

3. Effects of personality

Tarone (1977) observed definite differences in her learners' overall approach to story telling. One learner spoke quickly and provided little detail in either L1 or L2 performance, whereas another elaborated and frequently appealed for assistance. She suggests that personality factors may correlate highly with strategy preference.

4. Effects of the learning situation

It would seem probable that learners' use of communication strategies is affected by the situation of use. For instance, learners may use fewer strategies in a classroom environment than in natural environment, particularly if the pedagogic focus is on correct L2 use, rather than on fluent communication. The situation may also influence the type of strategy used. Piranian (1979) found that American university students learning Russian relied more on avoidance, whereas learners with natural exposure used paraphrases too (pp. 185-186).

Summary and Rationale

SUMMARY

Theory tells us that language learning is a complex cognitive skill. Cognitive theory and interlanguage theory

suggest how communicative competence can be reached. Learning and communication strategies are used to reach this goal. These strategies are also complex cognitive skills. The research has identified a number of those strategies, what type of tasks they are commonly used with, and who they are used by. Cognitive theory also suggests that strategies could be taught. Some researchers have, with mixed success thusfar, instituted strategy training programs. The potential pedagogic value of this type of training is immense. Oxford and her colleagues (1989) have argued convincingly that the principles of the currently popular communicative approach to language learning and teaching foster the use of learning strategies. However, researchers have also identified other variables that affect the language learning process: age, sex, cultural background, and "mini-theories" of language learning, are but a few of those variables. Perhaps their influence, at least in part, accounts for the mixed results of previous strategy training initiatives. For example, O'Malley and his colleagues (1985a) found that Asian students resisted learning imagery as a strategy to improve vocabulary learning. They suggested that this might be explained by their previous educational experience which had emphasized repetition and rote learning as appropriate learning strategies for that type of learning. In essence, their belief systems about language learning impeded their acceptance of a new

strategy. Other researchers have discussed students' "mini-theories" of language learning. Wenden (1987b) found that the students she studied had belief systems about language learning that seemed to influence the learning strategies that they preferred. She pointed out the need for more research in this area.

RATIONALE

The present research seeks to discover if similar belief systems to those found by Wenden exist in a class of adult ESL learners in Calgary, and if those beliefs affect their practice in terms of strategy use. If a relationship exists there are implications for strategy training programs. Altering belief systems so that students are more receptive to learning new strategies may need to be accomplished either before, or in conjunction with such programs.

CHAPTER THREE

Design, Procedure, and Hypotheses

This study was designed to uncover students' "mini-theories" of second language learning, and the relationship between those theories and the types of learning strategies students choose. The following questions were asked: How accurately do the three belief systems identified by Wenden (1987b) characterize those of a class of adult ESL students? What language learning strategies will the students in this class use? Will there be a relationship between the students' belief systems and the learning strategies that they use? The present research was designed to address these questions.

Subjects

The subjects in this study were the members of an adult class of ESL students attending the Alberta Vocational Centre in Calgary. They were in the first semester of a twenty-week, full-time (22 class hours a week) program that began in November of 1989. They were intermediate level, academic track students. Academic track means that they had received a minimum of eight years of education in their native countries, and that they were able to express clear future goals in their initial entrance interviews. An intermediate level class was chosen so that the students would have enough proficiency in English to answer the questionnaires without their being translated into their

first languages. Initially, there were sixteen students in the class. After four weeks, the number dropped to fifteen when one student had to terminate his studies for medical reasons. Data collected from this student were disregarded. The students had varied ethnic backgrounds. There were seven East-Europeans, four South-East Asians, three Hispanics, and one Ethiopian. The researcher was the teacher.

Procedure

Two kinds of data were collected -data on learning strategies and data on beliefs about language learning. Data on learning strategy use were collected in three ways. First, students completed a questionnaire on their use of learning strategies; second, they were video-taped to observe their use of learning strategies in the classroom, and third, they were encouraged to write about learning strategies in their journals.

The students completed Version 7.0 of the Strategy Inventory for Language Learning (SILL). This is the version designed for speakers of other languages learning English. The SILL was developed in the United States by Rebecca Oxford for the Army Research Institute and the Defense Language Institute. This original version consisted of 121 items. It had a five-point scale ranging from "never or almost never" to "always or almost always". The items included in the survey were based on Oxford's own taxonomy

of language learning strategies (see Table 1). Oxford credits the work of O'Malley, Chamot, and Rubin in helping her to construct this classification system. Psychometric testing has been done on this version. Oxford and Ehrman (1989) state that: Internal consistency reliability using Cronbach"s

> alpha is .96 based on a 1,200-person Purdue University sample and .95 based on a 483-person Defense Language Institute sample. Content validity is .95 using classificatory agreement between two independent raters who matched each of the SILL items with strategies in the comprehensive taxonomy. Construct validity is based on strong relationships between SILL factors and self-ratings of language proficiency and language motivation.
>
> Social desirability response bias was empirically checked with three samples . . . No statistical or ethnographic evidence for such bias appeared. (p. 12)

Version 7.0 of the SILL is a structured survey based on Oxford's strategy system. It is currently being field tested and psychometric data on it are not yet available. This version contains 50 items and has very simplified language. It takes about 30 minutes to complete. It has the same 5-point scale as the original version. The overall average indicates how often the learner tends to use learning strategies in general, while averages for each part

Table 1

Strategy System for Language Learning

Direct Strategies

(Memory, Cognitive, and Compensaation Strategies

I. Memory strategies	A. Creating mental linkages	1. Grouping
		2. Association/elaborating
		3. Placing new words into a context
	B. Applying images and sounds	1. Using imagery
		2. Semantic mapping
		3. Using keywords
		4. Representing sounds in memory
	C. Reviewing well	1. Structured reviewing
	D. Employing action	1. Using physical response or sensation
		2. Using mechanical techniques

	A. Practicing	1. Repeating
		2. Formally practicing with sounds and writing systems
		3. Recognizing and using formulas and patterns
		4. Recombining
		5. Practicing naturalistically
	B. Receiving and sending messages	1. Getting the idea quickly
		2. Using resources for receiving and sending messages
II. Cognitive strategies		
	C. Analyzing and reasoning	1. Reasoning deductively
		2. Analyzing expressions
		3. Analyzing contrastively (across languages)
		4. Translating
		5. Transferring
	D. Creating structure for input and output	1. Taking notes
		2. Summarizing
		3. Highlighting

(Table 1 continued)

III. Compensation strategies	A. Guessing Intelligently	1. Using linguistic clues
		2. Using other clues
	B. Overcoming limitations in speaking and writing	1. Switching to the mother tongue
		2. Getting help
		3. Using mime or gesture
		4. Avoiding communication partially or totally
		5. Selecting the topic
		6. Adjusting or approximating the message
		7. Coining words
		8. Using a circumlocution or synonym

Note: Adapted from Language Learning Strategies (pp. 18-21) by Rebecca L. Oxford, 1990, New York: Newbury House Publishers.

(Table 1 continued)

of the SILL indicate which strategy groups the learner tends to use most frequently.

Strategy data were also collected by videotaping the class on three occasions. The last hour and a half of the afternoon was taped. The tapes were made near the beginning, middle, and end of the ten-week term. They were transcribed and classified as described later in this chapter. A media-aide employed by the Alberta Vocational Centre operated the audio-visual equipment.

A third method of collecting data on strategy use was also tried. The students were encouraged to report on their use of learning strategies in their journals. Journal writing took place once or twice a week for about half an hour. The students were aware of the researcher's interest in learning strategies. In the first week of the course they signed consent forms which explained the purpose of the study and included the fact that the researcher would be examining their journals for their comments on learning strategies. When she distributed the consent forms the teacher/researcher elaborated on the study and explained learning strategies. Also, prior to completing the SILL, which was done early in the course, the students were given Oxford's taxonomy and worked in groups on an exercise devised by Oxford (1990) to help participants become acquainted with language learning strategies. This exercise is called the "Embedded Strategies Game". The students were

given a list of language activities, asked to choose several activities, and decide which of Oxford's strategies would help them to do those activities. Each group presented its findings to the rest of the class. A class discussion on learning strategies resulted from this activity. The purpose of the exercise was to increase the students' awareness of and interest in learning strategies. It was also hoped that by increasing their awareness of and interest in learning strategies, they would be more likely to write about them in their journals.

The data on language learning beliefs were collected by using a Likert-style questionnaire (see Appendix A). Students were asked to state their agreement or disagreement with 23 statements. The items contained in the questionnaire were designed to correspond to the 12 statements that Wenden (1987b) used to characterize the three belief systems that she found. In addition, one item was designed to capture the meaning of each group heading. The items were randomly arranged so that the students would not detect a pattern. Table 2 indicates the correspondence between the questionnaire items and Wenden's groups and statements.

Many of the items included in this questionnaire were taken from the Beliefs About Language Learning Inventory (BALLI). The BALLI is a 34-item, Likert-style questionnaire designed to assess student opinion on a variety of issues

Table 2

Correspondence Between Belief Questionnaire Items and Wenden's Belief Statements

	Wenden's Belief Statements	Questionnaire Items
	Overall Statement - Use the language	9
Group 1	1. Learn the natural way	1
	2. Practice	14
	3. Think in your second language	17
	4. Live and study in an environment where the language is spoken	15, 21, 5
	5. Don't worry about mistakes	16, 2, 10
	Overall Statement - Learn about the language	11
Group 2	1. Learn grammar and vocabulary	18, 4
	2. Take a formal course	6
	3. Learn from mistakes	10
	4. Be mentally active	12
	Overall Statement - Personal factors are important	8
Group 3	1. The emotional aspect is important	20
	2. Self-concept can also facilitate or inhibit learning	22, 3
	3. Aptitude for learning is necessary	23, 13, 7

and controversies related to language learning. It was developed by Horowitz (1987). Initially she gave 4 groups of 25 language teachers a free-recall task. She asked them to: list their beliefs about language learning; list others' beliefs about language learning; and, list their students' beliefs on the subject. She obtained a list of 30 items from this process. This list was then examined by a group of foreign language teacher educators who added to the list. The researcher also added items that arose when she discussed the list with groups of ESL and foreign language students. The resultant questionnaire is written in easy English and addresses five areas of interest in language learning: Foreign Language Aptitude; The Difficulty of Language Learning; The Nature of Language Learning; Learning and Communication Strategies; and, Motivations. These areas of interest do not correspond directly with the belief system groups that Wenden found; however certain BALLI items do capture the meaning of the statements that Wenden's subjects made. Therefore, 14 BALLI items were incorporated into the questionnaire formulated for the present research. Table 3 indicates which BALLI items were used in the present questionnaire. In addition to the BALLI items, six items were formulated by the researcher to correspond to statements where appropriate BALLI items did not exist. The questionnaire was piloted with two classes of intermediate level students at the Alberta Vocational Centre in Calgary.

Table 3

Items in the Belief System Questionnaire Taken from the BALLI

Belief System Questionnaire Item Number	BALLI Item Number
1	13
2	14
4	23
5	12
7	6
10	22
13	16
14	18
15	4
16	2
17	28
18	17
21	8
23	2

They did not indicate any problems with comprehension of the items. One minor change in the wording of an item was made as a result of their feedback.

Classification of the Data

The SILL was scored according to Oxford's directions. Answers received a score between one to five, one for "never or almost never true of me" to five for "always or almost always true of me". Scores for each of the six categories were then summed; next the sums were divided by the number of members of each category. This yielded an average score for each category of learning strategies.

The researcher watched and transcribed the videotapes. All of the audible dialogue was transcribed. Only approximately the first 20 minutes of the third tape was usable, the rest of the tape was defective. For some portions of the videotapes descriptions of what the students were doing were also made. The tapes and transcriptions were then reviewed to detect evidence of learning strategy use. Oxford's (1990) taxonomy was used as a guide. This classification system was chosen because it was the most up-to-date and comprehensive taxonomy available and was based on previous findings by other researchers (O'Malley et al., 1985a, 1985b; Rubin, 1981).

The researcher read the students' journals. Unfortunately, the students chose not to write about their

learning strategies. Most of the entries were autobiographical in nature. Therefore, the researcher decided not to use them as a source of data.

The belief system questionnaire was also scored. With the exception of items 10, 16, and 17; "strongly agree" responses received a score of five, "agree" four, "neutral" three, "disagree" two, and "strongly disagree" one. Items 10, 16, and 17 were scored in the opposite direction. The items were also grouped according to which of the three belief systems they related to. Scores for each group were summed and then divided by the number of items in the group. The result was an average score for each of the three belief systems.

Hypotheses

This study focused on the belief systems and learning strategies of a class of adult ESL learners. It is based on the assumptions that students use learning strategies and that they have belief systems about language learning. Part of the purpose of the present study was to identify the students' learning strategies and belief systems about language learning. It looked for a relationship between students' belief systems and their learning strategy use. Previous research had not been done in this area, so if a relationship was found to exist, no prediction could be made about the nature of that relationship. Accordingly, the

following null hypotheses were tested using the procedures described.

1. The students' belief systems do not correspond to the three belief systems found by Wenden (1987b).
2. There is no relationship between the learning strategies the students use and their language learning belief systems.

CHAPTER FOUR

Analysis and Results

The data were analyzed to identify the language learning belief systems and strategies of a class of ESL students and to look for relationships between students' belief systems and their use of learning strategies. Belief systems were identified by analyzing questionnaire results. Descriptive statistics for each of the three belief systems were generated and compared and Wilcoxon Signed Ranks Tests used to determine the differences between belief systems. Two kinds of learning strategy data were analyzed. Descriptive statistics were used to analyze questionnaire results to identify reported use of language learning strategies. Data on observed strategy use were analyzed by coding transcribed class videotapes according to Oxford's classification system. Frequencies of strategies observed were then tabulated. Data on belief systems were then compared with data on reported learning strategy use to determine relationships between the two. Spearman Correlation Coefficients were used in this comparison.

Belief Systems

First, the results of the belief system questionnaire were tabulated using a 5-point Likert scoring method as described in the previous chapter. The results appear in Table 4 and are also presented in histogram format in Figure 5. Then descriptive statistics were generated for

each belief system. They are found in Table 5. The mean for Belief System A (4.18) was the highest. The mean for Belief System B (4.07) was only slightly smaller. These results indicate that the students believe that it is important both to use the language and to learn about it. The mean for Belief System C (3.507) was the lowest; however, it still indicates some agreement that personal factors are important in second language learning. The standard deviation and variance of Belief System C (.122 and .015 respectively) were also the smallest of all, indicating that most of the students opinions were similar. The standard deviation and variance of Belief System A (.276 and .076 respectively) were also small. Standard deviation and variance of Belief System B (.558 and .311 respectively) were the greatest. The range for belief system B was also the greatest. This means that there was less agreement among the students with regards to the importance of this category.

The belief data were also analyzed to determine if the differences between the three categories were significant. The Wilcoxon Signed Ranks Test was used for this. The results appear in Tables 6, 7, 8, 9 and 10. No difference was found between Belief systems A and B. Superficial examination of the data showed that about half of the differences were negative while the other half of the differences were positive and that it was the European

students who ranked Belief System B higher than Belief System A. The researcher then decided to separate the students results into European and Non-European groups and repeat the test. The results for both groups were significant at the .05 level. This finding indicates that culture may influence language learning beliefs. The differences between Belief Systems A and C, and B and C were also significant and similar to those found by Wenden (1987b). These findings give support to the first hypothesis in this study; students' belief systems correspond to the three belief systems found by Wenden (1987 a).

Reported Strategy Use

The results of the SILL were tabulated and are shown in Table 11 and in histogram form in Figures 6, 7 and 8. Like the belief data, they were also scored using a 5-point Likert scale. Descriptive statistics were then tabulated for each of the strategies and the averages of direct and indirect strategies. They appear in Tables 12, 13, and 14. Comparing the means of each strategy showed that use of metacognitive strategies (mean 4.04) was reported most often, followed closely by social strategies (mean 4.02). The other results from greatest to smallest were as follows: cognitive strategies (mean 3.653), compensation strategies (mean 3.313), affective strategies (mean 3.28), and memory strategies (mean 3.087). The means were all greater than

3.0 which indicates that all of the strategies were used at least some of the time, and that metacognitive and social strategies were used frequently. The greatest standard deviation and variance occurred in the social strategies category (.603 and .363 respectively). An examination of the histogram shows that 12 of the students gave this category a rating of 4 or more, and that three students rated it from 2.8 to 3.2. No students' averages for this category were between 3.2 and 4. A comparison of the means of average direct and average indirect strategy use showed little difference between them. The mean for the average direct category was 3.347, slightly lower than the mean of 3.787 found for the average indirect category. All of the other descriptive statistics were similar for the direct and indirect categories. The figures indicate that there was little difference between reported use of direct and indirect language learning strategies.

Observed Strategy Use

Videotapes of classroom activity were analyzed to identify observable learning strategies. Every audible utterance was coded using Oxford's classification system. Table 15 shows the number of utterances that were coded. It is evident that some students took many more turns than others. Oxford stated that the categories were not mutually exclusive and the researcher found that many responses needed multiple coding. Several examples of items that have

been given more than one code will clarify this. When a classmate asked Lidia if she thought men or women changed their minds more often she replied, "Is relative." This turn is an example of a direct cognitive strategy, "practicing naturalistically". It is also an example of a direct compensation strategy "adjusting or approximating the message", which means making the message simpler or less precise. When Malgorzata explained why she thought the word roomy meant "little room" she said, "If you have name Dan you can say Danny, is little Danny". This turn was given four codes. She was using the same compensation strategy that Lidia had used and she was also using the cognitive strategy "practicing naturalistically". In addition she was using two other cognitive strategies, "recognizing and using formulas and patterns" and "reasoning deductively". Next the researcher tabulated the frequencies of the coded strategies. They appear in Table 16. Many more direct than indirect strategies were observed. Cognitive strategy use was particularly high. Of the indirect strategies, social strategies were used most frequently. The frequencies were converted to percentages which are reported in Table 17. From this table we can see that cognitive strategy use at 70.05 per cent was the highest. It was followed by compensation, social, metacognitive, affective, and memory strategy use. The high frequency count for cognitive strategy use is, in part, attributable to double coding.

Every time that the cognitive strategy A-3 (recognizing and using formulas and patterns) was used, the cognitive strategy A-5 (practicing naturalistically) was also used. When cognitive strategy A-3 was excluded from the frequency counts (on the basis of its predictability from A-5 use) the pattern of strategy use changed somewhat. Table 18 shows what happened to the figures for the percentage of strategy use when the observation of this strategy was removed. The greatest change occurred in the cognitive category, where the frequency changed from 70.05 percent to 63.53 per cent, a difference of 6.52 per cent.

The data were also presented as percentages of student use of each strategy in Table 19. Finally, to give another indication of overall strategy use the difference between the percentage of the total utterances and the percentage of the total number of strategies coded per student was tabulated. The results are in Table 20.

The Relationship Between Learning Strategies and Belief Systems

The Spearman Correlation Coefficient was used to determine the relationships between each of the reported language learning strategies including the averages of direct and indirect strategies and each of the belief systems. The results appear in Table 21. Only three correlations were significant at the .05 level. Metacognitive strategies correlated positively with Belief

System A. The Spearman Rho was .66. Memory strategies and the average of direct strategies both correlated negatively with Belief System B. The Spearman Rhos were -.769 and -.67 respectively. These correlations give very limited support to the second hypothesis that there would be a relationship between the learning strategies students use and their belief systems.

Summary of Results

The students' language learning belief systems and strategies for language learning were identified. Hypothesis One was supported. The students' belief systems did correspond to those found by Wenden. The researcher also found that beliefs appeared to be influenced by culture. Only very limited support for Hypothesis Two was found. Out of a total of 24 Spearman Correlation Coefficients only three were significant at the .05 level. This indicates almost no relationship between the language learning strategies students use and their beliefs about language learning as measured in this study.

Table 4

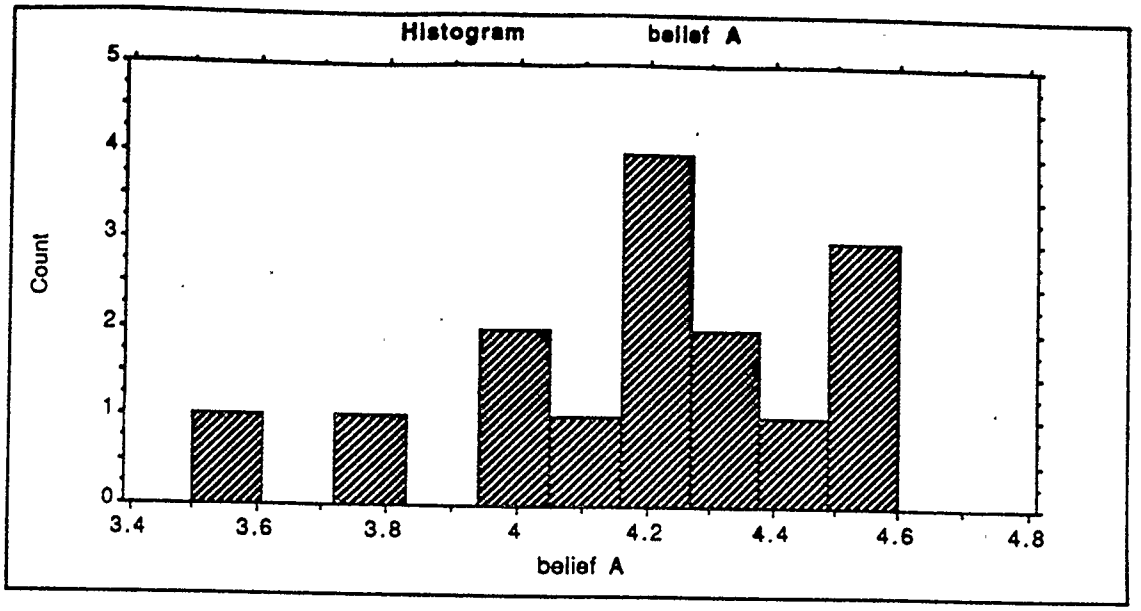
Belief System Questionnaire Results

*S	belief A	belief B	belief C
1	4.1	4.1	3.4
2	4.5	4.4	3.5
3	4.5	4.0	3.6
4	4.5	3.8	3.5
5	4.2	3.1	3.5
6	4.0	3.1	3.5
7	4.2	3.7	3.3
8	4.2	4.3	3.6
9	3.8	4.6	3.5
10	4.3	4.2	3.5
11	4.2	4.7	3.6
12	4.0	4.6	3.8
13	3.5	4.7	3.5
14	4.3	3.4	3.3
15	4.4	4.6	3.5

*S - Subject

Key:

belief A = Use the language to communicate
belief B = Learn about the language
belief C = Personal factors are important



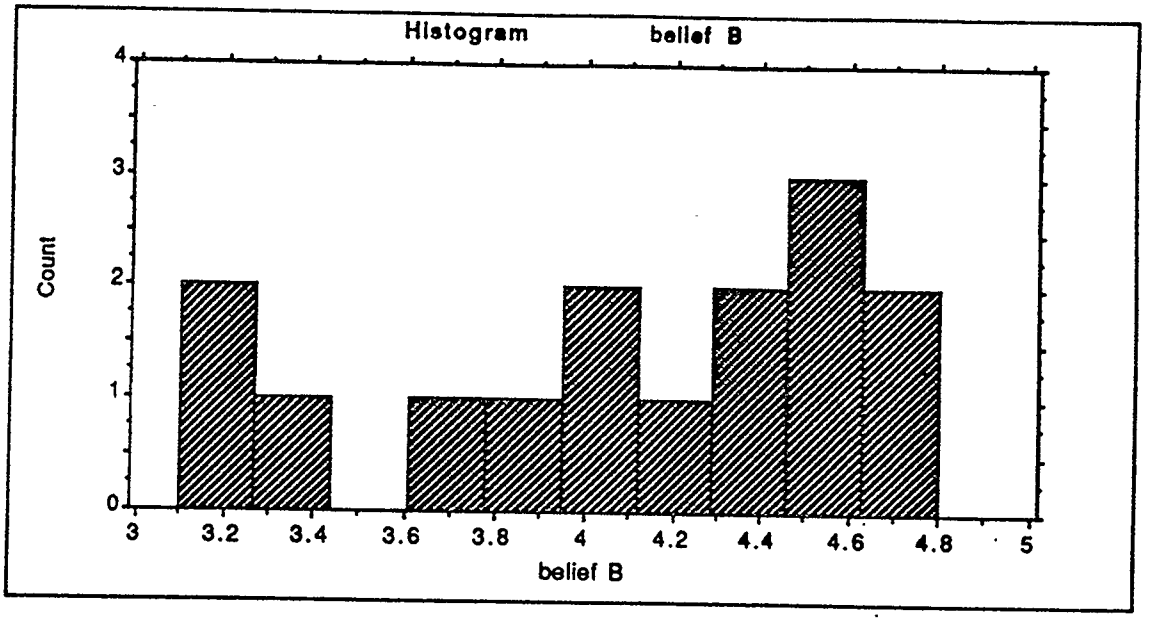
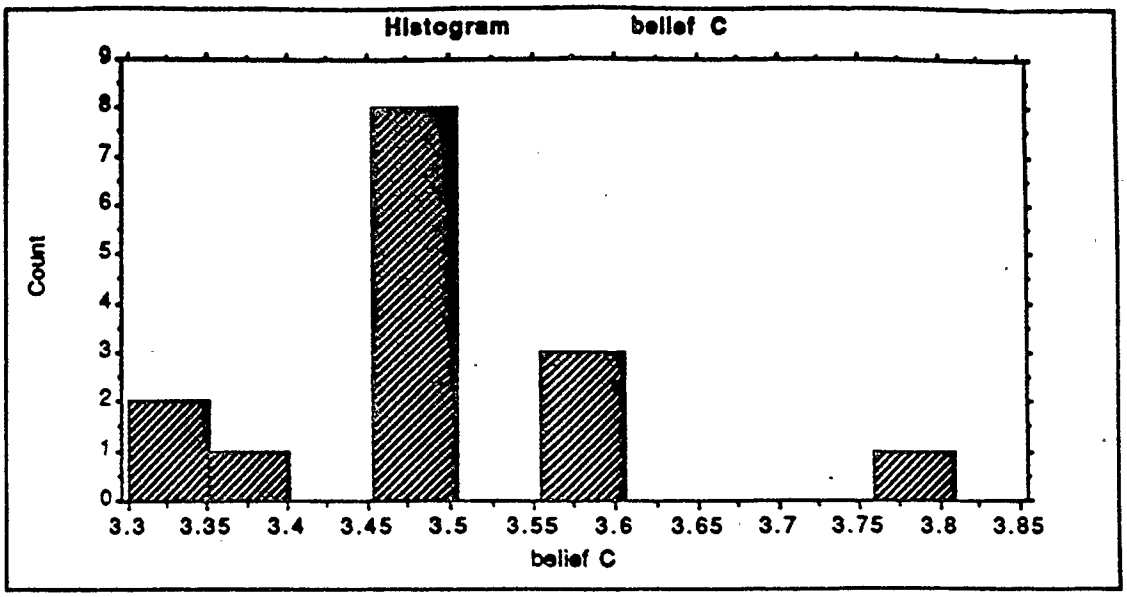


Figure 5. Histograms of Belief Systems Descriptive Statistics



(Figure 5 continued)

Table 5

Belief Systems Descriptive Statistics

belief A

Mean:	Std. Dev.:	Std. Error:	Variance:	Coef. Var.:	Count:
4.18	.276	.071	.076	6.595	15
Minimum:	**Maximum:**	**Range:**	**Sum:**	**Sum Squared:**	**# Missing:**
3.5	4.5	1	62.7	263.15	0

belief B

Mean:	Std. Dev.:	Std. Error:	Variance:	Coef. Var.:	Count:
4.087	.558	.144	.311	13.651	15
Minimum:	**Maximum:**	**Range:**	**Sum:**	**Sum Squared:**	**# Missing:**
3.1	4.7	1.6	61.3	254.87	0

belief C

Mean:	Std. Dev.:	Std. Error:	Variance:	Coef. Var.:	Count:
3.507	.122	.032	.015	3.487	15
Minimum:	**Maximum:**	**Range:**	**Sum:**	**Sum Squared:**	**# Missing:**
3.3	3.8	.5	52.6	184.66	0

Table 6

Wilcoxon Signed Ranks Test for Belief Systems A and B

Subject	A	B	d	Rank of d
2	4.5	4.4	- .1	- 2
3	4.5	4.0	- .5	- 7
4	4.5	3.8	- .7	-10
5	4.2	3.1	-1.1	-13
6	4.0	4.4	.4	5
7	4.2	3.7	- .5	- 7
8	4.2	4.3	.1	2
9	3.8	4.6	.8	11
10	4.3	4.2	- .1	- 2
11	4.2	4.7	.5	7
12	4.0	4.6	.6	9
13	3.5	4.7	1.2	14
14	4.3	3.4	- .9	-12
15	4.4	4.6	.2	4

N = 14 P (observed pattern of no change) $\leq$ 1

Table 7

Wilcoxon Signed Ranks Test for Belief Systems A and C

Subject	A	C	d	Rank of d
1	4.1	3.4	- .7	- 6.5
2	4.5	3.5	-1.0	-12
3	4.5	3.6	- .9	-10
4	4.5	3.5	-1.0	-13
5	4.2	3.5	- .7	- 6.5
6	4.0	3.6	- .4	- 3
7	4.2	3.3	- .9	-10
8	4.2	3.6	- .6	- 4.5
9	3.8	3.5	- .3	- 2
10	4.3	3.5	- .8	- 8
11	4.2	3.6	- .6	- 4.5
12	4.0	3.8	- .2	- 1
14	4.3	3.3	-1.0	-13
15	4.4	3.5	- .9	-10

N = 14 P (observed pattern of no change) $\leq$ .0002

Table 8

Wilcoxon Signed Ranks Test for Belief Systems B and C

Subject	B	C	d	Rank of d
1	4.1	3.4	- .7	- 7
2	4.4	3.5	- .9	-11
3	4.0	3.6	- .4	- 4
4	3.8	3.5	- .3	- 2
5	3.1	3.5	.4	4
6	4.4	3.6	- .8	- 9.5
7	3.7	3.3	- .4	- 4
8	4.3	3.6	- .7	- 7
9	4.6	3.5	-1.1	-13
10	4.2	3.5	- .7	- 7
11	4.7	3.6	-1.1	-13
12	4.6	3.8	- .8	- 9.5
13	4.7	3.5	-1.2	-15
14	3.4	3.3	.1	1
15	4.6	3.5	-1.1	-13

N = 15 P (observed pattern of no change) $\leq$ .0006

Table 9

Wilcoxon Signed Ranks Test for Belief Systems A and B Non-European Students

Subject	A	B	d	Rank of d
2	4.5	4.4	- .1	- 1
3	4.5	4.0	- .5	- 3.5
4	4.5	3.8	- .7	- 5
5	4.2	3.1	-1.1	- 7
6	4.0	4.4	.4	2
7	4.2	3.7	- .5	- 3.5
14	4.3	3.4	- .9	- 6

N = 7 P (observed pattern of no change) ≤ .0468

Table 10

Wilcoxon Signed Ranks Test for Belief Systems A and B European Students

Subject	A	B	d	Rank of d
8	4.2	4.3	.1	1.5
9	3.8	4.6	.8	6
10	4.3	4.2	- .1	- 1.5
11	4.2	4.7	.5	4
12	4.0	4.6	.6	5
13	3.5	4.7	1.2	7
15	4.4	4.6	.2	3

N = 7 P (observed pattern of no change) ≤ .0390

Table 11

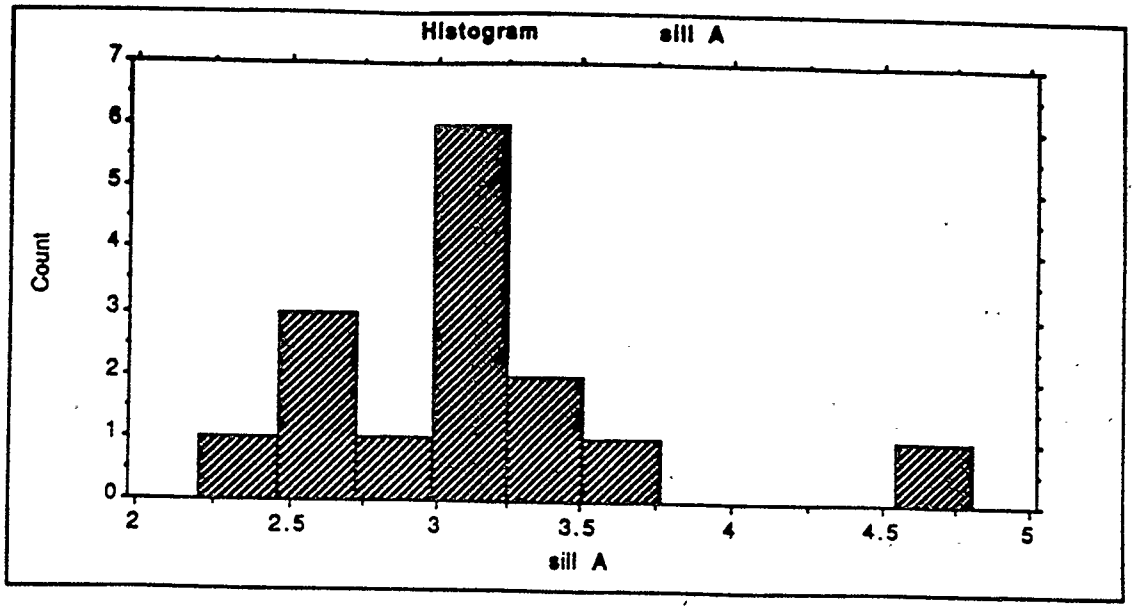
SILL Results

*S	sill avg direct	sill avg ind	sill A	sill B	sill C	sill D	sill E	sill F
1	3.3	3.6	3.3	3.2	3.5	3.6	4.1	3.0
2	2.9	3.8	2.7	3.0	3.0	4.1	2.8	4.5
3	3.4	3.8	3.1	4.1	3.1	4.6	3.5	4.2
4	3.6	4.2	3.0	3.3	4.2	4.6	3.3	4.6
5	4.1	4.4	4.7	4.5	3.2	4.7	4.0	4.7
6	3.5	3.8	3.4	4.2	3.0	3.7	3.3	4.5
7	3.3	3.8	3.5	3.3	3.1	4.2	3.3	4.0
8	3.2	4.0	3.0	3.6	3.0	4.4	3.3	4.3
9	3.0	4.0	2.2	3.3	3.5	3.6	3.1	4.0
10	3.6	3.7	3.2	3.8	3.7	4.1	3.1	4.0
11	3.2	3.5	2.7	3.7	3.1	3.5	2.3	4.6
12	3.5	3.4	2.6	4.1	4.0	3.4	3.7	3.1
13	3.0	3.7	3.0	3.7	2.3	3.7	3.3	4.0
14	3.4	3.3	3.0	3.7	3.5	3.9	3.3	2.8
15	3.2	3.8	2.9	3.3	3.5	4.5	2.8	4.0

Key:

SILL A = Memory Strategies
SILL B = Cognitive Strategies — Direct Strategies
SILL C = Compensation Strategies

SILL D = Metacognitive Strategies
SILL E = Affective Strategies — Indirect Strategies
SILL F = Social Strategies



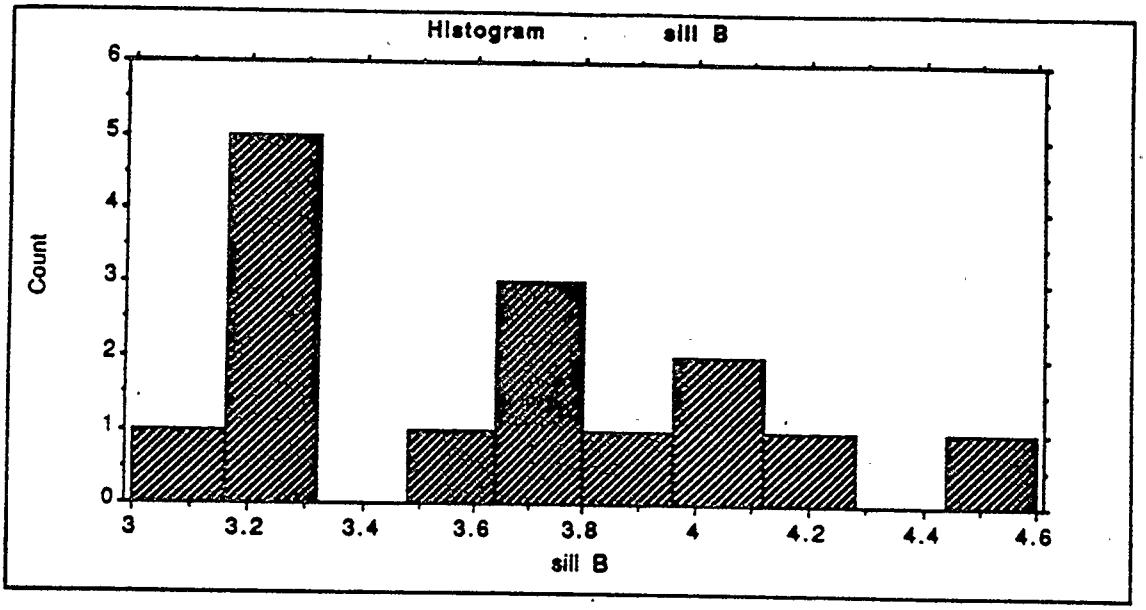
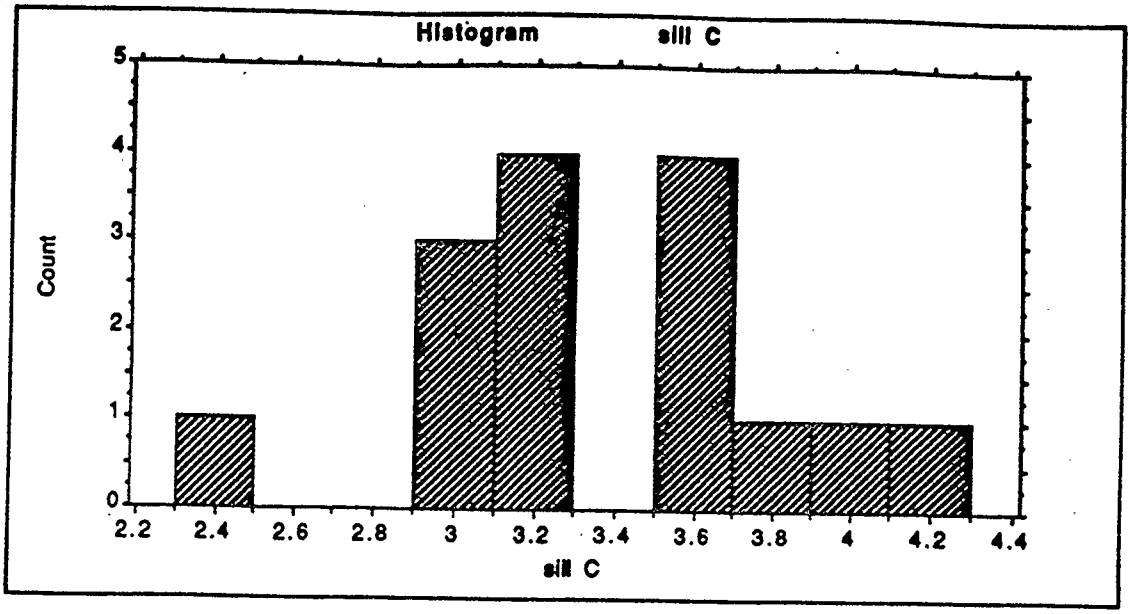


Figure 6. Histograms of SILL Descriptive Statistics - Direct Strategies



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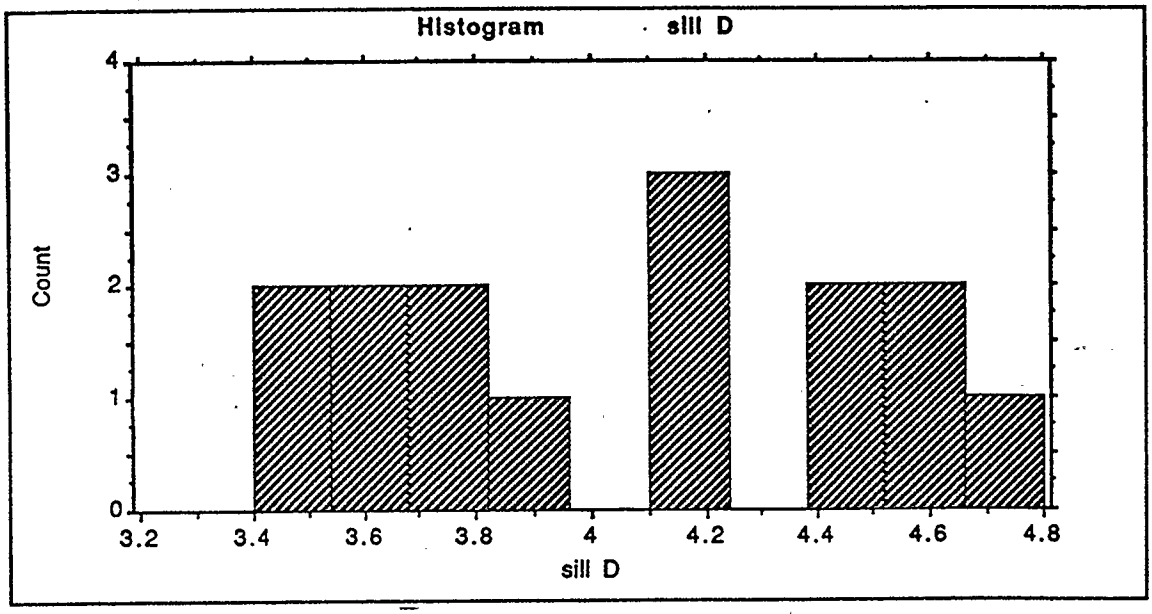


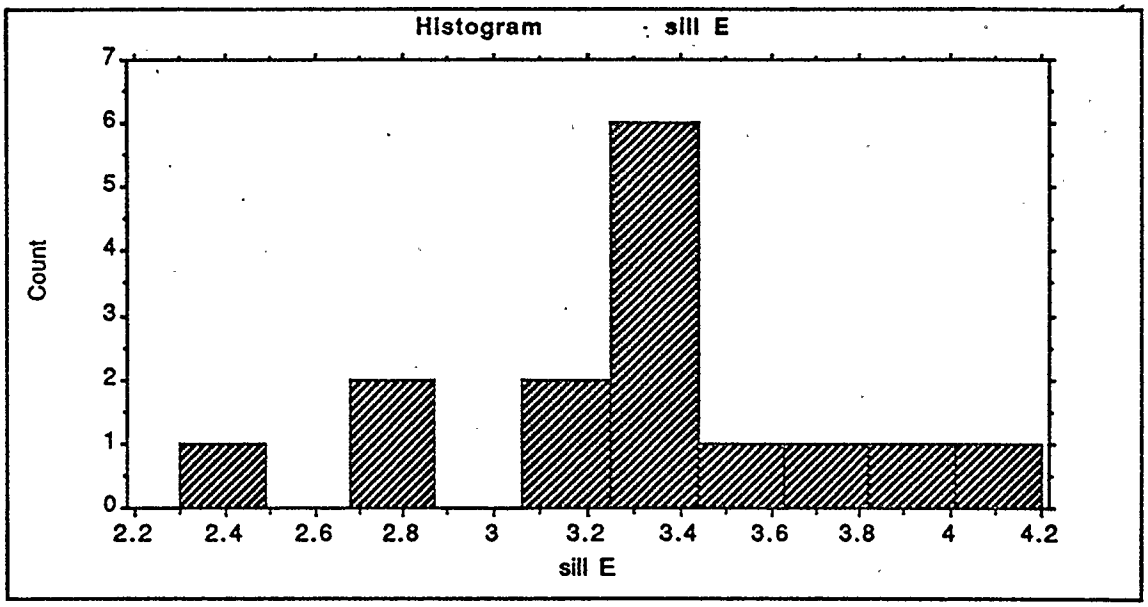
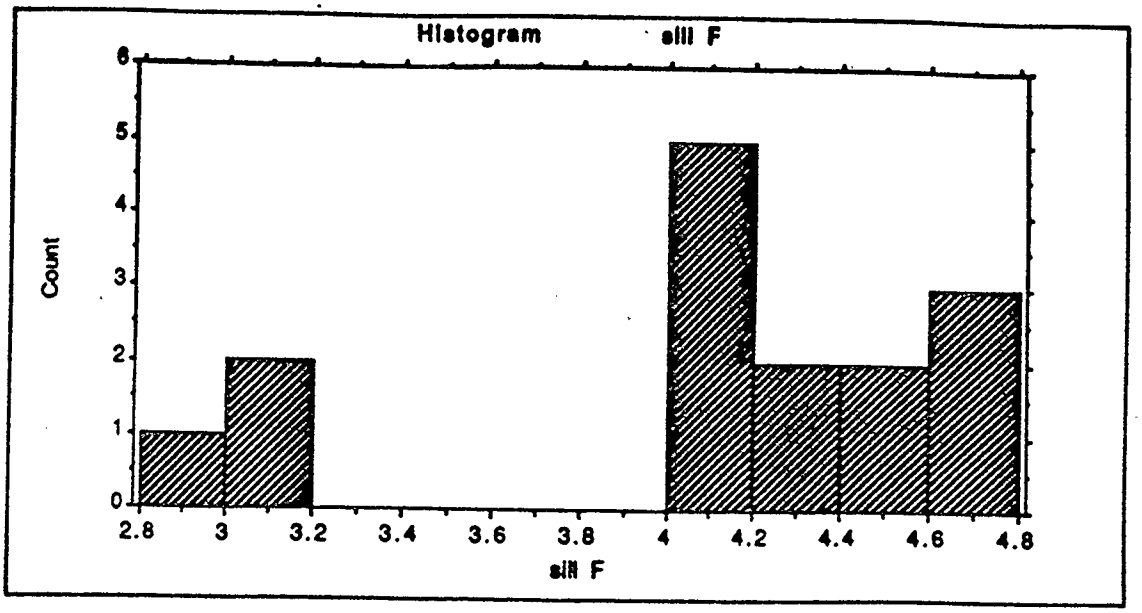


Figure 7. Histograms of SILL Descriptive Statistics - Indirect Strategies



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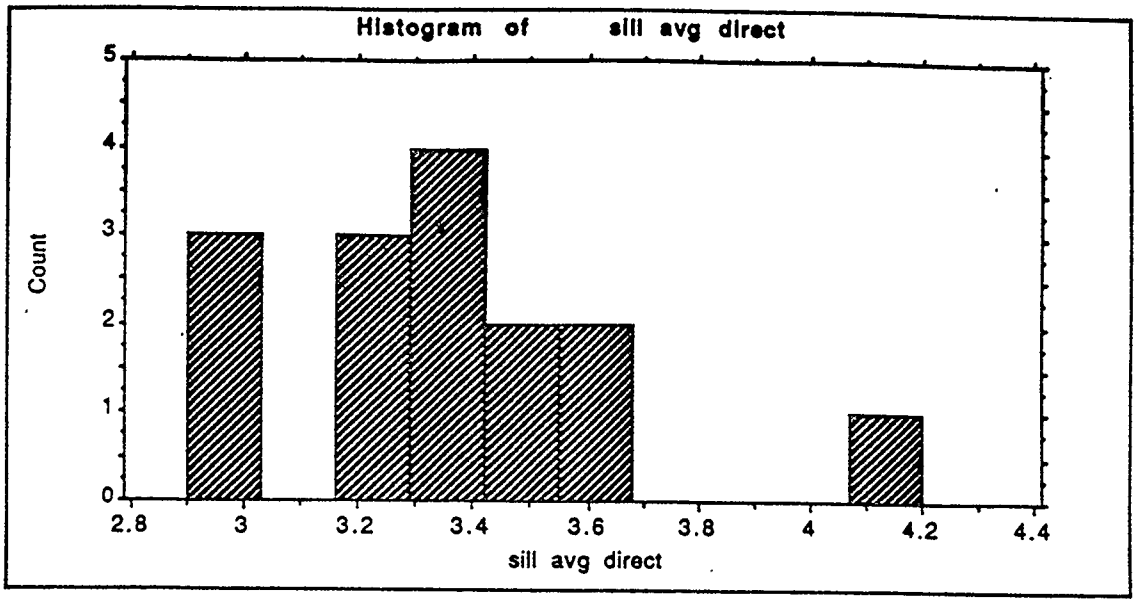

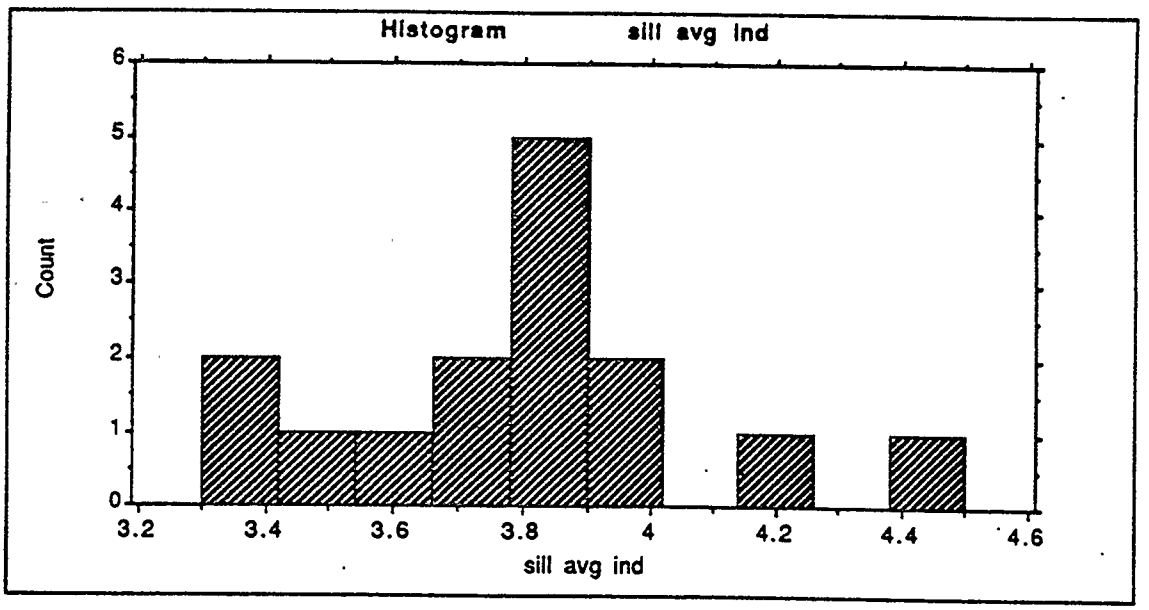

Figure 8. Histograms of SILL Descriptive Statistics - Average Indirect and Average Direct Strategies

Table 12

SILL Descriptive Statistic - Direct Strategies

sill A

Mean:	Std. Dev.:	Std. Error:	Variance:	Coef. Var.:	Count:
3.087	.555	.143	.308	17.991	15
Minimum:	**Maximum:**	**Range:**	**Sum:**	**Sum Squared:**	**# Missing:**
2.2	4.7	2.5	46.3	147.23	0

sill B

Mean:	Std. Dev.:	Std. Error:	Variance:	Coef. Var.:	Count:
3.653	.429	.111	.184	11.744	15
Minimum:	**Maximum:**	**Range:**	**Sum:**	**Sum Squared:**	**# Missing:**
3	4.5	1.5	54.8	202.78	0

sill C

Mean:	Std. Dev.:	Std. Error:	Variance:	Coef. Var.:	Count:
3.313	.464	.12	.216	14.011	15
Minimum:	**Maximum:**	**Range:**	**Sum:**	**Sum Squared:**	**# Missing:**
2.3	4.2	1.9	49.7	167.69	0

Table 13

SILL Descriptive Statistics - Indirect Strategies

sill D

Mean:	Std. Dev.:	Std. Error:	Variance:	Coef. Var.:	Count:
4.04	.445	.115	.198	11.022	15
Minimum:	**Maximum:**	**Range:**	**Sum:**	**Sum Squared:**	**# Missing:**
3.4	4.7	1.3	60.6	247.6	0

sill E

Mean:	Std. Dev.:	Std. Error:	Variance:	Coef. Var.:	Count:
3.28	.455	.118	.207	13.885	15
Minimum:	**Maximum:**	**Range:**	**Sum:**	**Sum Squared:**	**# Missing:**
2.3	4.1	1.8	49.2	164.28	0

sill F

Mean:	Std. Dev.:	Std. Error:	Variance:	Coef. Var.:	Count:
4.02	.603	.156	.363	14.99	15
Minimum:	**Maximum:**	**Range:**	**Sum:**	**Sum Squared:**	**# Missing:**
2.8	4.7	1.9	60.3	247.49	0

Table 14

SILL Descriptive Statistics - Average Indirect and Average Direct Strategies

sill avg ind

Mean:	Std. Dev.:	Std. Error:	Variance:	Coef. Var.:	Count:
3.787	.288	.074	.083	7.593	15
Minimum:	**Maximum:**	**Range:**	**Sum:**	**Sum Squared:**	**# Missing:**
3.3	4.4	1.1	56.8	216.24	0

sill avg direct

Mean:	Std. Dev.:	Std. Error:	Variance:	Coef. Var.:	Count:
3.347	.3	.077	.09	8.955	15
Minimum:	**Maximum:**	**Range:**	**Sum:**	**Sum Squared:**	**# Missing:**
2.9	4.1	1.2	50.2	169.26	0

Table 15

Number of Student Utterances Coded

Subject	Tape 1	Tape 2	Tape 3	Total	%
1	30	28	17	75	9.27
2	40	55	37	132	16.32
3	38	60	44	142	17.55
4	9	3	2	14	1.73
5	11	10	2	23	2.84
6	26	12	absent	38	4.70
7	20	59	8	87	10.75
8	9	absent	1	10	1.24
9	3	4	1	8	.99
10	3	15	4	22	2.72
11	26	13	4	43	5.32
12	26	24	16	66	8.16
13	14	8	1	23	2.84
14	8	-	2	18	2.22
15	6	13	absent	19	2.35
Unidentified	43	19	27	89	11.00
Total	312	331	166	809	

Table 16

Frequency of Strategies Observed

Subject	A	B	C	Total Direct	D	E	F	Total Indirect	Total Direct & Indirect
1	1	113	26	140	3	6	2	11	151
2	1	215	47	263	4	1	17	22	285
3	4	224	72	300	8	2	14	24	324
4	-	20	9	29	2	1	1	4	33
5	-	24	6	30	3	-	3	6	36
6	-	39	13	52	-	-	3	3	55
7	2	127	21	150	4	5	10	19	169
8	-	14	6	20	-	-	1	1	21
9	-	11	4	15	1	-	2	3	18
10	-	23	6	29	3	2	3	8	37
11	-	48	10	58	2	3	7	12	70
12	2	95	36	133	3	3	13	19	152
13	-	32	13	45	3	-	2	5	50
14	1	27	10	38	-	1	-	1	39
15	-	26	7	33	1	-	4	5	38
Unidentified	-	94	18	112	-	-	26	26	138
Total	11	1132	304	1447	37	24	108	169	1616

Key:

A = Memory
B = Cognitive
C = Compensation
D = Metacognitive
E = Affective
F = Social

Table 17

Percentage of Total Strategies Used by Each Student

Subject	A	B	C	T1	D	E	F	T2	T3
1	.66	74.83	17.22	92.72	1.99	3.97	1.32	7.28	100
2	.35	75.44	16.49	92.28	1.40	.35	5.96	7.72	100
3	1.23	69.14	22.22	92.59	2.47	.62	4.32	7.41	100
4	-	60.61	27.27	87.88	6.06	3.03	3.03	12.12	100
5	-	66.67	16.67	83.33	8.33	-	8.33	16.67	100
6	-	70.91	23.64	94.55	-	-	5.45	5.45	100
7	1.18	75.15	12.43	88.76	2.37	2.96	5.92	11.24	100
8	-	66.67	28.51	95.24	-	-	4.76	4.76	100
9	-	61.11	22.22	83.33	5.56	-	11.11	16.67	100
10	-	62.16	16.22	78.38	8.11	5.41	8.11	21.62	100
11	-	68.57	14.29	82.86	2.86	4.29	10.00	17.14	100
12	1.32	62.50	23.68	87.50	1.97	1.97	8.55	12.50	100
13	-	64.00	26.00	90.00	6.00	-	4.00	10.00	100
14	2.56	69.23	25.64	97.44	-	2.56	-	2.56	100
15	-	68.42	18.42	86.84	2.63	-	10.53	13.16	100
Unidentified	-	68.12	13.04	81.16	-	-	18.84	18.84	100
Total	.68	70.05	18.81	89.54	2.29	1.49	6.68	10.46	100

Key:

A = Memory
B = Cognitive
C = Compensation
T1 = Total Direct
D = Metacognitive
E = Affective
F = Social
T2 = Total Indirect
T3 = Total Direct and Indirect

Table 18

A Comparison of Strategy Use When Cognitive Strategy A-3 is Omitted From the Totals

Strategy	Percentange of Strategy Use Including Cognitive A-3	Percentage of Strategy Use Excluding Cognitive A-3	Difference
Memory	.68	.83	.15
Cognitive	70.05	63.53	-6.52
Compensation	18.81	22.91	4.10
Direct Total	89.54	87.26	2.28
Metacognitive	2.29	2.79	.50
Affective	1.49	1.81	.32
Social	6.68	8.14	1.46
Indirect	10.46	12.74	3.74

Table 19

Percentage of Student Use of Each Strategy

Subject	A	B	C	T1	D	E	F	T2	T3
1	9.09	9.98	8.55	9.68	8.11	25.00	1.85	6.51	9.34
2	9.09	18.99	15.46	18.18	10.81	4.17	15.74	13.02	17.64
3	36.36	19.79	23.68	20.73	21.62	8.33	12.96	14.02	20.05
4	-	1.77	2.96	2.00	5.41	4.17	.93	2.37	2.04
5	-	2.12	1.97	2.07	8.11	-	2.78	3.55	2.23
6	-	3.45	4.28	3.59	-	-	2.78	1.78	3.40
7	18.18	11.22	6.91	10.37	10.81	20.83	9.26	11.24	10.46
8	-	1.24	1.97	1.38	-	-	.93	.59	1.30
9	-	.97	1.32	1.04	2.70	-	1.85	1.78	1.11
10	-	2.03	1.97	2.00	8.11	8.33	2.78	4.73	2.29
11	-	4.24	3.29	4.01	5.41	12.50	6.48	7.10	4.33
12	18.18	8.39	11.84	9.19	8.11	12.50	12.04	11.24	9.41
13	-	2.83	4.28	3.11	8.11	-	1.85	2.96	3.09
14	9.09	2.39	3.29	2.63	-	4.17	-	.59	2.41
15	-	2.30	2.30	2.28	2.70	-	3.70	2.96	2.35
Unidentified	-	8.30	5.92	7.74	-	-	24.07	15.38	8.54
Total	100	100	100	100	100	100	100	100	100

Key:

A = Memory
B = Cognitive
C = Compensation
T1 = Total Direct
D = Metacognitive
E = Affective
F = Social
T2 = Total Indirect
T3 - Total Direct and Indirect

Table 20

Difference Between Percentage of Total Utterances and Total Strategies Coded per Student

Subject	% Total Utterances	% Total Strategies	Difference
1	9.26	9.34	.08
2	16.32	17.64	1.32
3	17.55	20.05	2.50
4	1.73	2.04	.31
5	2.84	2.23	- .61
6	4.70	3.40	-1.30
7	10.75	10.46	- .29
8	1.24	1.30	.06
9	.99	1.11	.12
10	2.72	2.29	- .43
11	5.32	4.33	- .99
12	8.16	9.41	1.25
13	2.84	3.09	.25
14	2.22	2.41	.19
15	2.35	2.35	-
Unidentified	11.00	8.54	-2.46

Table 21

Spearman Rho SILL vs. Belief System

	SILL	Belief System	Rho corrected for ties	Z corrected for ties
	Memory		.038	.14
	Cognitive		-.209	- .783
Direct	Compensation		.203	.761
	Average		.171	.639
		A		
	Metacognitive		.66*	2.47*
	Affective		-.239	- .894
Indirect	Social		.274	1.024
	Average			
	Memory		-.769*	-2.877*
	Cognitive		-.291	-1.09
Direct	Compensation		-.077	-.287
	Average		-.67*	-2.506*
		B		
	Metacognitive		-.492	-1.84
	Affective		-.49	-1.835
Indirect	Social		-.154	- .576
	Average		-.298	-1.114
	Memory		-.442	-1.656
	Cognitive		.397	1.484
Direct	Compensation		-.074	- .278
	Average		-.009	- .003
		C		
	Metacognitive		-.096	- .358
	Affective		-.055	- .207
Indirect	Social		.359	1.342
	Average		.047	.175

N = 15
*P (Rho observed for p = 0) < .05

CHAPTER FIVE

Discussion and Implications

Analysis of the data revealed the belief systems about language learning held by the subjects in this study. In addition, it identified the reported and observed language learning strategies used by this group of learners, and showed the relationship between the student's beliefs and the strategies that they used. The purpose of this chapter is to interpret these findings in order to achieve a fuller, richer understanding of the students' beliefs and learning strategies.

Belief Systems

Wenden's (1987b) method of eliciting belief systems was different from the one used in the present study. Wenden used semi-structured interviews. Several days before their interviews the students completed grids of their weekly activities mentioning which ones were conducted in English. During the interview Wenden asked them specific questions about those activities, and also more general questions about language learning. She then transcribed the interviews and analyzed the transcripts to identify belief statements made and learning strategies used. This method was not used in the present study for two reasons. First, it was considered too time-consuming; and second, the researcher did not believe that the students in this study had sufficient English skills to express themselves fluently

enough to provide the required data. To cope with these limitations, the researcher developed a questionnaire based on Wenden's findings.

It is possible that the two methods are not comparable. The questionnaire forced the students to consider all of the belief statements, whereas Wenden's interviews allowed the students to produce the statements themselves. However, the results, as were indicated in Table 4 in the previous chapter, were very similar. This indicates that these belief systems are real and suggests that the questionnaire does have validity.

Wenden did not address the relationship between culture and belief systems in her study. She listed the nationalities of the 25 students she interviewed, but she did not specify the nationalities of the 14 who gave belief statements. There is no way of knowing what, if any, relationship existed between the students' nationalities and their belief systems. Cultural background was significant in this study. Eastern-Europeans most strongly affiliated themselves with Belief System B, "learn about the language". The focus of Belief System B is on formal, traditionally-structured language learning situations in which students learn vocabulary lists, grammatical rules, and the "correct" way to speak.

There are a number of possible explanations of this finding. Age, and length of time in Canada was similar in

the Eastern-European and non-Eastern-European students, so neither of these factors could have contributed to the difference.

Explanations relating to education were considered next. It was postulated that years of previous education might account for the difference. If the Eastern-European students were more highly educated than the others they might have developed a preference for more formally structured learning resulting in higher scores for Belief System B. An examination of the difference in years of education between the two groups shows only minimal a difference. Table 22 compares years of education of the two groups. There is little credence for this explanation.

A second possible explanation relating to education concerned the nature of education and the educational systems in the students' native countries. O'Malley et al (1985b), in their research described in Chapter Two of this study, offered the nature of previous education as an explanation of the poorer performance of Asian students with imagery strategy training. If the Eastern-European educational system were more structured and rigorous than the systems that the other students came from, then the Eastern-Europeans might favour Belief System B more than the other students. However, although access to education is not equal in all of the students' native countries, the educational systems themselves have similarities that are

Table 22

Years of Previous Education

	Subject	Years of Education
Eastern European Students	8	16
	9	12
	10	15
	11	17
	12	14
	13	16
	15	13
Other Students	*1	8
	2	12
	*3	8
	4	12
	5	19
	6	12
	7	12
	14	12

*The figures for these two subjects are misleading. They were not allowed to continue their formal educations because of their families' political backgrounds. However, they both showed that they had received extensive education outside of the formal educational system.

salient. Eastern-European, Asian, and Latin-American educational systems are all reputed to be highly-structured and rigorous. Education is valued highly in all of these cultures, particularly in Asia. Therefore, it is not likely that the nature of their educational backgrounds accounted for the difference in the students belief systems.

A final explanation relating to previous educational experience was examined. All of the Eastern-European students had received mandatory Russian instruction in their native countries. The method of teaching was the traditional grammar-translation approach. This method is highly-structured and emphasizes rule-learning. Its conception of language learning is congruent with Belief System B. It seems highly probable that the previous language learning experience of the Eastern-European students affected their responses on the present questionnaire, that this experience influenced them to affiliate themselves most strongly with Belief System B. On the other hand, most of the other students had not received foreign language training in the educational systems of their native countries, and therefore their responses would not have been subject to the same influences as the Eastern-Europeans. They had received little or no formal second language instruction before starting the program they were enrolled in at the time of the study. That program used the

communicative approach, which is most closely associated with Belief System A, "use the language". Thus, it is not surprising that these students scored more highly on Belief System A. It seems probable that the nature of the students' previous language learning experience influenced their language learning belief systems.

Identification of Learning Strategies

REPORTED STRATEGY USE

At the present time, no results of Version 7.0 of the SILL have been reported in the mainstream literature, therefore the results found in this study cannot be compared with previous findings. Moreover, as was stated in Chapter Three, psychometric statistics are not yet available for this version of the SILL, so we cannot be sure of how adequately it identifies the learning strategies of ESL students. In administering this inventory, the researcher noticed that the students did not find the English used in it particularly easy for them to understand. They asked numerous questions to verify their comprehension of the items, and the researcher speculates that difficulties with comprehension may have led to the students' misunderstanding of some of the items. For example, in Part A, item 4, "I remember a new English word by making a mental picture of a situation in which the word might be used," the grammatical complexity of this statement may have impeded at least some of the students' understanding of it. In the same section

item 6, "I use flashcards to remember new English words," the word flashcards was lexically difficult for the students. "Clear goals" and "skills" were also lexically difficult for some students in Part D, item 37, "I have clear goals for improving my English skills". These are not the only examples of items that presented difficulties for the students. Furthermore, as with all self-report measures of this kind, there is always a danger that the students reported what they thought they should do rather than what they did.

To interpret the results, Oxford identifies scores of from 3.5 to 4:4 as high, from 2.5 to 3.4 as medium, and less than 2.5 as low. This class scored high in two indirect strategies, metacognitive (mean 4.04), and social (mean 3.63); and in one indirect strategy, cognitive (mean 3.63). They received medium scores in the other strategies, compensation (mean 3.13), affective (mean 3.28), and memory (mean 3.087). Compensation and memory strategies are considered direct strategies while affective strategies are indirect. None of the means indicated low strategy usage. The researcher speculates that the students' scores in metacognitive and cognitive strategies may have been affected by their previous educational experience. Most of the students in this study had completed high school, and many of them had post-secondary education. Many of the metacognitive and cognitive skills are skills that are used

not only in language learning, but in many academic learning situations. For example, the three broad categories covered by metacognitive strategies, centering, arranging and planning, and evaluating learning, may be applied beyond the scope of language learning. Similarly, cognitive strategies for practicing, receiving and sending messages, analyzing and reasoning, and coding structure for input and output, would not be unfamiliar to well-educated students. Their previous educational success would have, to some extent, been dependent on their ability to utilize these types of strategies. The high scores in social strategies are not as easily accounted for. In part, they may be attributable to the personality characteristics of this particular class. The researcher found them to be an outgoing group. In addition, the teacher/researcher actively encouraged them to use social strategies through the type of activities that she used in class. Previous educational experience may also, to some extent, account for the lower scores that the students received in compensation, affective, and memory strategies. Compensation strategies relate more specifically to language use, particularly to communicative language use. With the exception of the Eastern-European students, the members of this class did not have previous language learning experience, and therefore could not have had the opportunity to acquire or use these strategies. The Eastern-European students were not different from the other

students in that their language learning experience had not emphasized communicative language use. Therefore, they too, would not have developed compensation strategies. Like compensation strategies, many of the memory strategies relate specifically to language learning, i.e., using imagery, semantic mapping, and using keywords. These strategies had not been introduced in class, and the students, especially those with no prior language learning experience, were probably unfamiliar with them. In the case of affective strategies, since all the students came from traditionally structured educational backgrounds, it is unlikely that they were familiar with this group of strategies. For example, the researcher doubts they used anxiety reduction strategies such as deep-breathing, meditating, or listening to music. Even if they were familiar with the strategies, they probably didn't associate them with use in educational environments. Given their scores, this class might have benefited most from memory strategy training, followed by affective strategy training, and possibly training in compensation strategies. The results of this test may have pedagogic utility in that they gave the teacher an indication of what type of strategy training her class might benefit from the most. Pedagogic implications will be discussed at length later in this chapter.

OBSERVED STRATEGY USE

The researcher found that the identification of strategy use through observation was not a good index of overall strategy use. There are several reasons why this was so. First, many strategies are not observable at all, or may only infrequently be detectable through observation even though they are being heavily used. This happens because many strategies are mental processes without overt manifestations. Most of the memory strategies are unobservable. Similarly, cognitive strategies dealing with analyzing and reasoning are difficult to detect through observation alone. For example, it is difficult to see evidence of the compensation strategy avoiding communication. It is usually impossible to state categorically that learners have avoided communication because they anticipate language difficulties. Other compensation strategies that are difficult to classify with observable data are those for guessing intelligently in reading and writing. It is only when the student verbalizes those guesses that they can be detected. Metacognitive strategies are also all but impossible to detect using observable data. Occasionally, verbal representations of self-monitoring occur, but this strategy may be used without being verbalized. Affective and social strategies, with the exception of asking questions, are also inaccessible to the researcher who uses observable data only. A second problem

with this type of data is that certain strategies that were used and were observable were not amenable to frequency counts. In one of the tapes, while two students were giving an oral presentation the other students were taking notes, a cognitive strategy. Throughout all of the tapes the students were using a metacognitive strategy, paying attention. Furthermore, during many of the activities they were engaged in, they were using a social strategy, co-operating with peers. None of these strategies could be meaningfully coded with frequency counts.

As a result of these first two difficulties the frequency of compensation and cognitive strategies used appears unusually high. It may be that these strategies were used more, but certainly not to the extent that the frequencies for these strategies indicated. Furthermore, the high frequency count for cognitive strategies was affected by double coding, especially double coding of the cognitive strategy A-3 (recognizing and using formulas and patterns), and the cognitive strategy A-5 (practicing naturalistically).

These difficulties indicate that strategy classification is not a simple task. Some strategies are prerequisites for other strategies. Several examples of this emerged from the data. The most obvious of these was the relationship between the cognitive strategies A-3 and A-5. Whenever learners use formulas and patterns to

communicate, they are also practicing naturalistically. Another strategy that is frequently coupled with other strategies is paying attention. For example, students need to pay attention in order to write notes. Furthermore, certain strategies are artifacts of particular situations. In the second tape, when the students were given a picture to use as a resource, they used a cognitive strategy, using resources for receiving and sending messages. They did not choose this strategy themselves, for there was no other way to complete the task, other than by referring to the picture. This was also true when the students used the social strategy, co-operating with peers, to assemble strip stories. The situation required that they co-operate with their classmates in order to do the activity. In actual fact, at least one of the students stated that she did not enjoy working with the other students in this way, and that she felt she learned nothing from the experience.

The question arises as to whether this should really be classified as a learning strategy, since the student did not choose it. Perhaps it was really a teaching strategy. The student's resistance to co-operating with her peers also serves to highlight the significance of "critical reflection" as a component of strategy training. If her beliefs about language learning, particularly with respect to co-operating with her peers, had been discussed, and she had been convinced of the value of this strategy, she would

not have resisted it, and might have felt that she had learned from the experience.

Regardless of the classification difficulties that have been discussed, it was possible to detect patterns of strategy use that were associated with particular activities that were recorded on the video-tapes.

At the beginning of the first tape the answers to a cloze exercise that the students had been working on in the language laboratory just before the taping began were being taken up. The most frequent strategies used during this activity, a listening comprehension exercise, were direct compensation strategies for guessing intelligently in listening and reading. The students used linguistic clues and other clues such as context to guess what the missing words were. They also used a direct cognitive strategy, repeating, frequently. In addition there was some use of other direct cognitive strategies, recognizing and using formulas and patterns, and practicing naturalistically. They used these strategies when they gave their opinions about the song that was used for the cloze, and again in discussing two of the idioms in the song. Although they were not coded because of the difficulties already mentioned, the students used a metacognitive strategy (paying attention), and a social strategy (co-operating with peers), throughout the activity.

The next activity that the students engaged in on the first video-tape was putting a strip story together. They continued to use the metacognitive strategy of paying attention in this exercise and also made extensive use of the social strategy co-operating with peers. In fact, the activity was selected to force the use of this strategy. The students also had to use the compensation strategies for guessing intelligently in listening and reading. They had to read and understand their own parts as well as listen to and understand the other students' parts. They also used a social strategy, asking for clarification or verification. Many cognitive practicing strategies were also used in this activity. In addition, the students frequently used a compensation strategy, adjusting or approximating the message. This includes simplification. In order to communicate, they frequently, either consciously or unconsciously, simplified their messages. This is an integral process in interlanguage and it is not surprising that it was frequently used.

The tape concluded with a discussion of what the students were planning to do on the weekend. Three strategies predominated in the discussion. They were two cognitive strategies, recognizing and using formulas and patterns, and practicing naturalistically; and one compensation strategy, adjusting or approximating the message.

The second tape opened with the students looking at an overhead transparancy depicting some people waiting at a bus stop. The students discussed what they saw in the picture. Once again they predominantly used two cognitive strategies, recognizing and using formulas and patterns, and practicing naturalistically. Thy also occasionally used another cognitive practicing strategy, repeating, and occasionally used an indirect social strategy, asking for clarification or verification. By referring to the picture as a resource they used a cognitive strategy, using resources for receiving and sending messages. This is an example of how strategy use can be an artifact of a particular situation. As in the previous activities, they were observed to be paying attention and co-operating with their peers.

In the next part of this lesson, the students worked in pairs. Each student in each pair had a picture that contained eight differences from his or her partner's. They had to ask each other questions about the pictures to find the differences without looking at their partners' pictures. This, of course, involved the social strategy, co-operating with peers. By referring to their pictures they continued to use the cognitive strategy, using resources for receiving and sending messages. They used the same cognitive strategies that they had initially used to discuss the picture in the whole class activity. They also asked questions for clarification or verification. Their lack of

facility with English also resulted in frequent use of the compensation strategy, adjusting or approximating the message. After most of the pairs had found the eight differences, the whole class was brought together again to go over their findings. The students used the same strategies, with the exception of asking questions for clarification, that they had used while working in pairs.

Next, the students engaged in a grammar exercise. Statements based on the pictures were given and the students were required to transform them to yes-no questions. Several examples were done with the whole class and then the students continued the exercise working in pairs. The strategy that they used the most during this activity was a cognitive analyzing and reasoning strategy, reasoning deductively. Initially, as the examples were being given, a few instances of asking for clarification or verification occurred. There was also some use of the cognitive strategies recognizing and using formulas and patterns, and practicing naturalistically when they discussed the verb tenses used in the sentences and the use of the word downtown without a preposition. When they were working in pairs they again needed to use the social strategy, co-operating with peers.

The class ended with a short game. The class was divided into two teams. The teacher gave the first student one word to begin a sentence. The first student added a

word to this and the next student added another word and so on until a word was added that could not be construed to be appropriately a part of the sentence. The object of the game was to make the longest sentence possible. The most predominant strategy used in this activity was a cognitive strategy, reasoning deductively. Cognitive practicing strategies were also used when the students discussed their scores.

The third tape began with an oral presentation given by two students. The students used cognitive strategies for receiving and sending messages extensively. They also used cognitive practicing strategies, recognizing and using formulas and patterns, and practicing naturalistically. Again, the students' lack of mastery of English was evidenced by frequent use of the compensation strategy adjusting or approximating the message. The other students made extensive use of a cognitive strategy, note-taking. Their comments were classified as cognitive practicing strategies and their questions were examples of the social strategy, asking for clarification or verification.

After the presentation there was a short discussion about the upcoming final written examination. As with other discussions, cognitive practicing strategies were used here. Another strategy that overall, was used only rarely, was used here. It was the affective strategy of using laughter

to lower anxiety. Several jokes about the test were made and laughed at.

Following the discussion about the examination, the answers to the previous day's homework were reviewed. In actual fact, most of the students hadn't completed it and were not reviewing it, but were doing it for the first time. The predominant strategy needed and used to complete this task (a grammatical practice of the structure "so that") was a cognitive one, reasoning deductively. There were also several instances of self-monitoring, a metacognitive strategy.

Finally, the students completed a strip story similar to the one they had done in the first tape. At this point, the quality of the video-tape became increasingly poor, until it was useless to attempt to analyze it. However, from what could be detected, the students used the same strategies as they had in the previous strip story exercise.

Based on the previous description, it is possible to reach some conclusions about what types of strategies were used most frequently with particular activities. In oral discussions the cognitive strategies, practicing naturalistically, recognizing and using formulas and patterns, and repeating were used, in that order of frequency. Compensation strategies, especially adjusting or approximating the message, were also used. When the students worked in pairs or groups they used the social

strategy co-operating with peers. As has been previously stated, this may really be a teaching strategy, since it was the teacher's idea, not the students'. However, it might also be considered an example of embedded learner strategy training. Embedded training involves learners using particular strategies as a component of completing particular tasks. The strategies are not explicitly identified to the learner. Grammar practice activities most often involved the cognitive strategy reasoning deductively, while activities focussed on listening and reading elicited compensation guessing strategies. Oral presentations involved using cognitive strategies for giving and receiving messages on the part of the presenters, and paying attention, note-taking, and asking for clarification on the part of the audience.

These patterns give some insight into strategy use, but because of the limitations previously mentioned, they probably represent only the tip of the iceberg. Another method of data collection might have revealed more of the iceberg. This method, the think-aloud method, has been used by previous researchers (Hosenfeld, 1977 and 1978; O'Malley et al., 1985a, 1985b; Abraham and Vann, 1987; Chamot and Kupper, 1989; O'Malley, Chamot, and Kupper, 1989), and elicited rich data. In this method learners recount their thoughts while they are engaged in language learning tasks. The researcher records and transcribes this information for

subsequent analysis. Usually the students give their thoughts in their first languages. This type of data was not collected for several reasons. First, for many of the activities that the students were doing, especially the whole class activities, it would have been technically impossible to record the students thoughts while they were engaged in them. Furthermore, recording their thoughts would have interfered with the flow of the lessons. Another reason think-alouds were not used was because of the difficulty of translating data gathered in many different languages. Finally, the time needed to transcribe this type of data was judged to be too great for the purposes of the present research.

The Relationship Between Learning Strategies and Belief Systems

Out of a total of 24 Spearman correlations that were tabulated, only three were significant. This finding does not support the existence of a relationship between learning strategies and belief systems. An examination of the three significant correlations does not help to clarify the situation.

There was a significant positive correlation between reported metacognitive strategy use and Belief System A, (Spearman Rho .66). With the exception of the strategy "seeking practice opportunities", metacognitive strategies would seem to be more naturally associated with Belief

System B. Therefore, this correlation is puzzling.

Reported use of memory strategies and the average of direct strategies both correlated negatively with Belief System B. (The Spearman Rhos were -.769 and -.67 respectively). One possible explanation of the negative correlation of memory strategies with Belief System B is that the students were probably unfamiliar with many of the strategies in this category. However, this explanation seems unlikely because if this were the case, then similar negative correlations should have been found with Belief Systems A and C. Most likely the negative correlation found between the average direct strategies reported and Belief System B was caused by the inclusion of memory strategies in the average.

These findings are puzzling. They lead to the conclusion that there is no relationship between language learning strategies and language belief systems, common sense leads to rejection of this conclusion. It seems unlikely that strategy use would be entirely random. Even though they might not be able to explain why they used particular strategies, the students probably did have reasons for using them, and one possible reason would be their beliefs about language learning. Perhaps the subjects did not report what they believed, but rather what they thought they should believe. Additionally, they might have reported the strategies that they thought they should use

rather than the strategies they actually used. Furthermore, their awareness of their beliefs and strategies may be, to some extent, below conscious level. The questionnaires may not have been able to reach this level. Perhaps the measures themselves are invalid and/or unreliable. This is entirely possible. They are both untested. Psychometric data are not yet available for Version 7.0 of the SILL, and the belief system questionnaire was designed specifically for use in this study. Future research needs to be done to test the reliability and validity of these measures.

Limitations

This study showed that adult ESL students do have beliefs about language learning and that they do use learning strategies. It identified their beliefs and learning strategies and attempted to find a relationship between them. However, there are several limitations as to the generalizability of the findings of the present study. First, the sample chosen was not random. The subjects in this study were intermediate-level, well-educated ESL learners. The profile of learning strategies that they used might differ according to level. Previous research supports this speculation (O'Malley et al, 1985a, 1985b; Chesterfield and Chesterfield, 1985; Chamot and Kupper, 1989). Also, the belief systems of this group of students were affected by the cultural composition of the group. Similar belief

systems results might not be found with classes of differing proportions of cultural composition.

This research also contains design limitations. The reliability and validity of the measures used to identify belief systems and reported learning strategies are not known. Furthermore, the identification of learning strategies by observation did not reveal a complete inventory of the learning strategies that the students used. The findings should not be interpreted as an indication of overall strategy use, only as the observable strategies used by a particular population engaged in specific tasks.

Pedagogic Implications

Educational research may be entirely theoretical or it may seek to inform practice. This study is an example of the latter type. As such, there are a number of pedagogical implications pertaining to ESL learners belief systems and learning strategies that arise from the present study. This section will also address more general pedagogical considerations relating to learning strategy training.

The belief system questionnaire designed for this study could easily be used in ESL classrooms. Even though the lack of correspondence between reported belief systems and strategies used indicates that there may be problems with the validity of the measure for research purposes, it retains some pedagogic utility. The correspondence between Wenden's (1987b) findings and those of the present study are

similar enough to suggest that the questionnaire may have some validity. However, teachers should exercise caution by not interpreting the results too literally. The results may give teachers a tentative profile of their students' beliefs about language learning. With such a profile teachers may gain increased understanding of their students' actions in the classroom. Students with high scores in Belief System A might be expected to participate willingly in many of the language learning activities engaged in when using the communicative approach and might be more resistant to activities that stress rule-learning and accuracy. Students with high scores in Belief System B would tend to have the opposite reaction to these activities. Students scoring highly in Belief System C might evaluate language learning activities in relation to their personal experience and feelings. Teachers who are aware of the tendencies of their students can include a variety of language learning activities designed to appeal to the students' preferences. At the same time teachers can discuss the students' belief systems with them and attempt to convince them of the values of the belief systems that they may not agree with. Class or group discussions based on the students' results on the belief system questionnaire could serve as an excellent opening for the topic. This is the primary pedagogical contribution of the belief system questionnaire. The belief system questionnaire can be used to stimulate discussion and

begin consciousness-raising on the subject of language learning beliefs. Oxford would probably advocate this use of the belief system questionnaire. She seems to be alluding to beliefs about language learning with one of her metacognitive strategies for arranging and planning learning called "finding out about language learning" (1990, p. 156). She says that this strategy means uncovering what is involved in language learning and that "taking class time to talk about the learning process will reap rewards for the students" (p. 156). Moreover, she states that:

> The best strategy training not only teaches language learning strategies but also deals with feelings and beliefs about taking on more responsibility and about the role change implied by the use of learning strategies. Unless learners alter some of their old beliefs about learning, they will not be able to take advantage of the strategies they acquire in strategy training. (p. 201).

The SILL can also serve as a useful tool for teachers. As they did in this study, the results can be used as an indication of which types of learning strategy training might be most beneficial. Teachers can plan learning strategy training based on this assessment of their students. Also, like the belief system questionnaire, the SILL may be used as a vehicle to stimulate awareness of and discussion of learning strategies. It might serve as an

introduction to learning strategy training. It might also be useful to have students repeat the SILL at the end of their language training as a way of assessing how their use of learning strategies changed over the duration of the course.

The researcher would not encourage teachers to collect observable data on their students' use of learning strategies in the manner employed by the present study. The time needed is prohibitive, and the utility of the findings are not great enough to warrant it. As has already been stated, observation alone is not a good index of overall strategy use. However, the results of this part of the study did show that certain strategies are used more for particular language learning tasks. For example, putting strip stories together requires use of the social strategy, co-operating with peers. Teachers should be aware of this and should plan their lessons accordingly.

The implications of the present research have certain limitations of pedagogic applicability. These relate to the students' level of second language ability and also to the first language composition of the class. The belief system questionnaire and the SILL are both written in English. Beginning students would not be able to complete them, and even lower-intermediate level students would have difficulty understanding a number of the items. Furthermore, discussion of beliefs and learning strategies in ones'

second language requires a reasonably high level of fluency in the language. This might be overcome by allowing the students to discuss these issues in their first languages. However, this is only possible when the students share a common language other than English, and the teacher must also know that language in order to participate in the discussion. In reality, the majority of ESL classes, at least in Calgary, are composed of students with a variety of native languages. ESL teachers are frequently unilingual, sometimes bilingual, and only rarely multi-lingual. They are almost never fluent in all of their students' native languages. This makes the discussion of beliefs and learning strategies impossible for most beginning and lower intermediate ESL classes. Classes using Curran's Counseling-Learning method of language learning are ideally suited for learning strategy training. In counseling-learning students initially speak in their first languages and the teacher/counselor translates for them. Counseling-learning, or some adaptation of it, may provide a suitable environment for strategy training.

These observations highlight the difficulties of learning strategy training but do not discount its importance. The potential contribution of learner strategy training as a component of language learning programs, especially with respect to adult education, has already been discussed at length in the first chapter of this research.

The compatibility of strategy training with the communicative approach has also been recounted in the second chapter of this thesis. Let it suffice to say here, that in spite of its implementation difficulties learner strategy training is a worthwhile component of adult second language training programs in that it is a means of enabling students to take responsibility for their own learning, one of the goals of adult education.

The difficulty of implementation of learning strategy training due to the factors just discussed is but one of the issues involved in a consideration of this type of training in second language classrooms. There are also issues that relate to teachers' preparedness. Before teachers can be expected to institute learner training they need to be informed about language learning strategies and convinced of their utility in aiding language learning. Furthermore, teachers need to reconsider their roles as teachers. Teachers who adopt learning strategy training need to envisage their roles as facilitators rather than directors of learning.

Other issues regarding learning strategy training are addressed by Oxford (1990) in her model for strategy training. There are eight steps in this model which can be used after teachers have assessed students' current strategy use. The first step requires determining the learners' needs and the time available. Age of the students and level

of English ability are two factors that must be taken into consideration. Current strategy use is also important, as are the strategies teachers think their learners need to know. Teachers should also give students an opportunity to express which strategies they believe are important to learn. The degree to which students are currently taking responsibility for their own learning is likewise important, for teachers may need to change students' attitudes by persuading them of the value of taking increased responsibility for their learning. Furthermore, teachers should think about the influence of cultural factors on their students' receptivity to learning strategies. Additionally, teachers must consider how much time they have available for training.

The second step involves selecting strategies. This selection must be based on the needs and characteristics of the learners. Here again cultural factors are important. Teachers would be wise to introduce very gradually those strategies that students might culturally resist. A variety of strategies selected from all of the major categories should be introduced. All should be useful for the learners and transferrable to a number of language tasks. They should also vary in level of difficulty. Some of the strategies chosen should be ones that the students have asked to learn.

The third step involves considering the integration of strategy training. Oxford among others (Wenden, 1987c; O'Malley and Chamot, 1990) argues that "it is most helpful to integrate strategy training with the tasks, objectives, and materials used in the regular language training program" (Oxford, 1990, p. 206). As has already been noted in the second chapter of this research, Wenden (1987c) met with resistance from her students when she did not do this. Learners perform best when they are able to see a strategy's immediate applicability to a task. They also need to be encouraged to transfer strategies to other related tasks.

Oxford's fourth directive is to "Consider Motivational Issues" (p. 206). She suggests that assigning grades or partial course credit for strategies mastered may increase students' motivation. Convincing students that using good strategies can facilitate their language learning and including training in strategies that the students themselves have expressed interest in should further increase their motivation. Moreover, she warns that because of their cultural or educational backgrounds students may be more motivated to use certain strategies and less motivated to become familiar with or use other strategies. Teachers must be sensitive to this and phase in unpopular strategies gradually.

In the fifth step, teachers prepare materials and activities. Oxford states that pre-existing materials can

be adapted for use in strategy training. In this researchers opinion, this is probably a good way of ensuring that strategy training is integrated, and that it is compatible with the curricula that teachers are using. Also, the researcher has found that, at the present time, there are very few ESL resources available that focus on strategy training. Oxford's work and another recent publication by Ellis and Sinclair (1989) were the only specifically ESL strategy training manuals found.

As the sixth step Oxford recommends conducting completely informed training. This means teachers should "inform the learners as completely as possible about why strategies are important and how they can be used in new situations. Provide practice with strategies in several language tasks, and point out how transfer of strategies is possible from task to task" (p. 207). Other authors (Wenden, 1987c; O'Malley and Chamot, 1990) have also agreed with this view. The opposite of informed training is embedded training in which strategies are used to complete a task but are not identified as such. This type of training is less likely to be transferrable to new tasks (Wenden, 1987c; Oxford 1990; O'Malley and Chamot, 1990). However, Oxford allows that in very rare instances this type of training might be used to introduce in disguise an extremely unpopular strategy that a teacher believes students need to know.

The last two steps of the model are evaluating and revising the strategy training. Learners' comments and teachers' observations can be useful in evaluating the strategy training. Oxford states that "possible criteria for evaluating training are task improvement, general skill improvement, maintenance of the new strategy over time, transfer of strategy to other relevant tasks, and improvement in learner attitudes" (p. 208). Possible revisions to the strategy training may arise from its evaluation. Making revisions involves returning to the first step of the model and proceeding through it again. However, once the initial cycle has been done, subsequent cycles should be accomplished more rapidly.

Implications For Future Research

This study raises several questions that might be investigated in future research. The belief system questionnaire was used for the first time in this study. It would be interesting to administer it to other groups of ESL learners and compare the findings with those of the present study. Identification of belief systems might also be investigated by using semi-structured interviews similar to those used by Wenden. The results from this type of data could then be compared with the results of questionnaires. If the findings were similar they could be interpreted as an indication that the belief systems are representative of second language learners. Background variables that may

influence belief formation such as previous second or foreign language learning, which was identified in this research, need to be investigated.

This study attempted to determine the relationship between learners' beliefs and their practice in terms of their use of learning strategies. The results were not as illuminating as the researcher had hoped. Replication of the research might yield more interesting results. Similar results would tend to confirm that the instruments used were not adequate. The same research question could be investigated using different methods of data collection. Future researchers could use semi-structured interviews to collect belief system data and use think-aloud data to collect information on language learning strategies. Since particular strategies appear to be associated with specific language learning tasks the researcher would have to collect data from a variety of different tasks in order to adequately identify the variety of language learning strategies that a learner employs.

This research was done using intermediate level language learners. It might be revealing to repeat it for different levels of language learners to see if the results were similar. If they were, then we would have evidence that learners use the same strategies at all levels.

Conclusion

The concern of the present research was with identifying the language learning beliefs and language learning strategies of adult ESL learners. It was also concerned with determining the relationship between the two. Language learning beliefs were identified by using a questionnaire. Learning strategies were identified in two ways. First, through a questionnaire on reported strategy use; and second, by analysis of videotapes for observed strategy use.

The researcher found that the students held almost equally strong beliefs about the value of using the language for communication and about learning about the language. They also felt that personal factors were important, but that they were not as important as the first two categories. Eastern-European students favoured learning about the language over using the language for communication, whereas the findings were the opposite for the other nationalities. The strongest explanation for this finding is the beliefs of the Eastern-European students were affected by their previous highly-structured language learning experience with Russian. The other students had little or no previous formal language learning experience that might have influenced their beliefs.

Results of the reported strategy use questionnaire showed that the students made high use of three types of

strategies, metacognitive, social, and cognitive. They made medium use of the three other strategies, compensation, affective, and memory strategies. As has been previously discussed, their strong educational backgrounds probably accounted for their high use of metacognitive and social strategies. Personality characteristics of this particular group combined with their experience in this class probably influenced their use of social strategies. Compensation and memory strategies were judged to be more closely affiliated with language learning, which only the Eastern-European students had had previously. However, the grammar-translation method of instruction that they had received would have included neither the use of compensation strategies nor a number of the memory strategies. Therefore, in actual fact, the Eastern-European students were not more familiar with these two strategy groups than the other students. The nature of all of the students' educational backgrounds may account for their affective strategy scores. Affective strategy use was probably not a component of the traditionally-structured education that they had received, and accordingly, they did not associate the use of these strategies with an educational environment.

Observation of strategy use in the classroom showed the students used many more direct than indirect strategies. Cognitive strategy use was particularly high, followed by compensation strategies. However double coding of cognitive

strategies combined with the impossibility of observing some strategies and of giving frequency counts to other strategies cast doubt on the validity of these findings. Nevertheless, it was possible, through observation, to detect that there were patterns of strategy use associated with particular language learning activities.

The present study attempted to identify the relationship between learning strategy use and belief systems by tabulating Spearman correlation co-efficients using the belief system questionnaire data and the SILL data. Most of the Spearman Rhos were insignificant, and the few that were significant were not the ones that might have been expected. These results might be taken as an indication that there is no relationship between learning strategy use and belief systems. However, as has already been stated, common sense makes this seem unlikely. It is possible that either one or both of the questionnaires is not valid. Future research needs to be done to investigate this.

A number of pedagogical implications arose directly from the present research. Both the belief system questionnaire and the SILL could be used as assessment instruments. They could be used by teachers to give them an indication of the students' beliefs about language learning and their use of learning strategies. They could point out which of the students' beliefs might need to be altered and

which learning strategies might need to be introduced. The questionnaires could also be used as a means of opening class or group discussions on the topics, with the intent of raising the students' consciousness levels. However, with the exception of counseling-learning, this would be difficult to accomplish at lower levels since the students would have insufficient second language linguistic skills both to complete the questionnaires and to participate in discussions.

More general pedagogical considerations related to learning strategy training were also discussed. Teachers interested in instituting learning strategy training need to be familiar with learning strategies and need to conceptualize their roles as facilitators of learning. Teachers who decide to institute learning strategy training must consider many factors. They need to take their students needs and characteristics, and the time they have available into account. They should select their strategies with care and conduct integrated, informed training. They also need to consider motivational issues, evaluate their programs, and revise them based on those evaluations.

A number of future research questions were raised in the present study. The validity of the belief system questionnaire and Version 7.0 of the SILL need to be assessed. It would be interesting to discover if replication of the study would show that other classes of

students have the same beliefs and use the same learning strategies as were identified in the current study. Furthermore, background variables that might influence belief system formation, such as prior learning experience, which was uncovered by this study, need further investigation. In addition, the lack of a relationship between belief systems held and learning strategies used found in this research points to the need for continued investigation. Not only could the study be replicated, but the question could be addressed by using different methods of data collection. Future researchers could approach the problem by using semi-structured interviews to identify belief systems and think-aloud data to identify students' learning strategies. The possibility of different findings at different levels of second language ability also exists and could be pursued by investigating the belief systems and learning strategies of students at the beginning and advanced levels of second language learning.

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APPENDIX A

The following statements represent opinions, and your agreement or disagreement will be determined on the basis of your particular beliefs. Kindly check your position on the scale as your statement first impresses you. Indicate what you believe, rather than what you think you should believe.

A. I strongly agree
B. I agree
C. I am neutral
D. I disagree
E. I strongly disagree

		A	B	C	D	E
1.	I enjoy practising English with the Canadians I meet.	☐	☐	☐	☐	☐
2.	It's okay to guess if you don't know a word in English.	☐	☐	☐	☐	☐
3.	When I'm feeling happy, it's easier for me to learn.	☐	☐	☐	☐	☐
4.	The most important part of learning a foreign language is learning the grammar.	☐	☐	☐	☐	☐
5.	It is best to learn English in an English-speaking environment.	☐	☐	☐	☐	☐
6.	It is important to take a formal course in English.	☐	☐	☐	☐	☐
7.	People from my country are good at learning foreign languages.	☐	☐	☐	☐	☐
8.	My feelings affect how well I can learn.	☐	☐	☐	☐	☐
9.	It is important to use English in everyday activities in order to learn it.	☐	☐	☐	☐	☐
10.	If beginning student are allowed to make errors in English, it will be difficult for them to speak correctly later on.	☐	☐	☐	☐	☐

11.	It is necessary to learn the rules of a language.	☐	☐	☐	☐	☐
12.	When people speak English to me I always listen carefully and think about what they are saying.	☐	☐	☐	☐	☐
13.	I have a special ability for learning foreign languages.	☐	☐	☐	☐	☐
14.	It is important to repeat and practise a lot.	☐	☐	☐	☐	☐
15.	You should live and study in an environment where the language you want to learn is spoken.	☐	☐	☐	☐	☐
16.	You should only say something in English when you can say it correctly.	☐	☐	☐	☐	☐
17.	The most important part of learning English is learning how to translate from my native language.	☐	☐	☐	☐	☐
18.	The most important part of learning a foreign language is learning vocabulary words.	☐	☐	☐	☐	☐
19.	When someone corrects my mistakes in English, it helps me to learn the language.	☐	☐	☐	☐	☐
20.	When I'm interested in the subject of a discussion class, I can learn from it.	☐	☐	☐	☐	☐
21.	It is necessary to know about English culture in order to speak English.	☐	☐	☐	☐	☐
22.	I can learn more from someone who respects me and shows consideration for my feelings.	☐	☐	☐	☐	☐
23.	Some people have a special ability for learning foreign languages.	☐	☐	☐	☐	☐