PREDICTORS OF ACQUISITION OF RUSSIAN LANGUAGE

LISTENING SKILLS

BY ARMY INTELLIGENCE SPECIALISTS
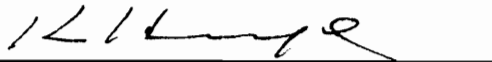
by

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Dissertation submitted to the Faculty of the

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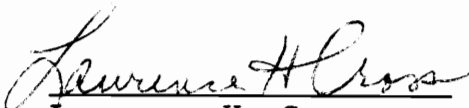in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

in

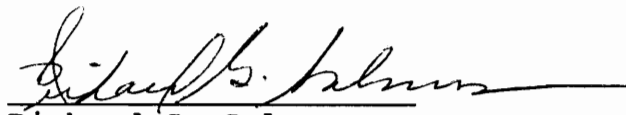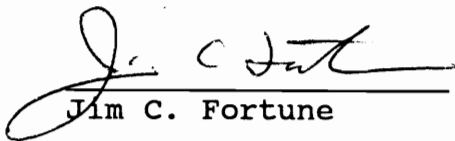Educational Research and Evaluation

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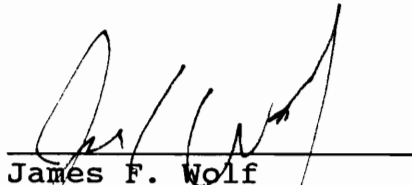Karl T. Hereford, Chairperson

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PREDICTORS OF ACQUISITION OF RUSSIAN LANGUAGE LISTENING SKILLS BY ARMY INTELLIGENCE SPECIALISTS

by

Derwin Brent Pope

Committee Chairperson: Karl T. Hereford
Educational Research and Evaluation

(ABSTRACT)

The Army has approximately 2000 soldiers on active duty trained to be Russian linguists for duties as intelligence specialists. To maintain this group, 1100 to 1300 candidates are sent annually to the Defense Language Institute (DLI) in Monterey, California, for an intensive 47 week basic Russian language course. Attrition rates for this course have been averaging a relatively high 20-30% for many years and studies have shown skills achieved at DLI decline rapidly after course completion. In addition, of those candidates completing this course, only 40-60% achieve the desired skill level 2 (of 5) upon graduation.

In 1986-87, the Army collected data on a number of individual characteristics of soldiers going through four basic language courses (Spanish, German, Russian & Korean) for a four year longitudinal study to try to improve this situation. This research examined data for the Russian language students in listening skills for the DLI basic course through Advanced Individual Training (AIT), or

approximately the first two years, to determine variables
that might improve prediction for the selection of
successful Russian linguists. The criterion variables were
the scores achieved on the Defense Language Proficiency Test
III (DLPT) listening section at the completion of DLI and
during the follow-on training at AIT. Predictor data
collected at the beginning and during DLI included variables
on cognitive, personality (e.g., empathy),
motivation/learning strategy and biographical (e.g.,
gender) characteristics. This study examines 23 variables
in multiple regression and discriminant analyses to
determine predictors or predictor combinations for success
in second language learning. This effort was supplemented
by a qualitative analysis based primarily on 36 interviews
with Army Russian linguists in field assignments.

Findings indicated improvements may be possible in the
prediction of successful Russian linguist candidates by
using additional screening instruments prior to assignments
to DLI. For success on the DLPT at the end of DLI, the use
of instruments to measure study habits, motivation, verbal
ability, critical thinking, self confidence and prior
language experience provided an increase over the Army's
current baseline (predictor set Multiple R = .509 vs
baseline = .359). For AIT, the Army's current predictor
variables did not show up in the final equation. Again, an
increase in predictive power was demonstrated with study

habits, verbal ability, critical thinking, self confidence and ambiguity tolerance variables in the final equation (predictor set Multiple R = .516 vs baseline = .244). Additional insights were provided from the analysis of information gathered during interview sessions with Army Russian linguists in field assignments.

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CHAPTER ONE

Introduction

The Army relies on a continuing annual pool of graduates from the Defense Language Institute (DLI) in Monterey, California, to meet its needs in the intelligence acquisition and analysis career fields. Soldiers skilled in the targeted foreign languages fill a variety of requirements to acquire and interpret information critical to the national defense. The Army's success in the selection of applicants, their training in language skills and retention of those skills has been mixed with substantial room for improvement. The Defense Language Institute's (DLI) Annual Program Review (1987), for example, cited an overall course attrition rate for the German, Russian, Spanish and Korean courses of 15 to 20% followed by an additional 5 to 10% loss during Advanced Individual Training (AIT) subsequent to the Defense Language Institute courses. Achievement of the desired skill levels for those students completing the basic language training in the more difficult languages (e.g., Russian, Korean) averaged less than 60% for a number of years prior to the 1987 Program Review.

In an attempt to gain a better understanding of these areas of concern, the Army Research Institute (ARI) and the Defense Language Institute (DLI) initiated a four year

longitudinal study, titled the Language Skill Change Project (LSCP), from February 1986 to July 1987. During this period, information was gathered on 1906 soldiers entering their basic language courses at DLI in Russian, Korean, German and Spanish. They were given a series of tests and background forms to complete to determine individual characteristics that might be later used as predictors to improve future candidate selections. Tests were administered and additional information was collected at periodic milestones throughout the initial language training, during Advanced Individual Training (AIT--training specific to their position assignments), in the field at unit assignments and at attrition during this process. Appendix A (O'Mara, 1989) provides a diagram of this longitudinal effort.

A review of the related literature indicated a relationship between a number of individual characteristics and the ability to acquire and retain a second language. In a summation of research on language aptitude, Carroll (1981) concluded that there appears to be sufficient evidence on individual differences in abilities to learn foreign languages to warrant further investigation into these relationships. Others (Lambert & Freed, 1982) have cited motivation, brain hemisphere dominance, memory and analytic reasoning among a number of individual factors showing a

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possible relationship with success in language acquisition and/or retention. These findings, the LSCP data available and indications from interviews with some of the Russian language program participants provided a basis to explore the potential relationship of selected individual characteristics to the ability to acquire and retain Russian language listening and comprehension skills.

The Language Skill Change Project (LSCP) provided the data base for the central focus of this research in exploring the Russian language acquisition and retention problems facing the Army. The Russian language is the highest priority for acquisition in the Army (Defense Foreign Language Program (DFLP) General Officer Steering Committee (GOSC) Summary Report, January, 1989) and, with recent events in Eastern Europe and the Soviet Union, the need for our capabilities in this area has significantly increased. This research examined the data available from the LSCP for selected individual characteristics to identify potential predictors for success or failure in Russian language acquisition and retention. A primarily quantitative effort was supplemented by qualitative methods to analyze the variables that might provide improvement in the selection of candidates who would have a higher probability for success in the Russian language program in the Army.

In this study, only the LSCP data collected on the Russian students were used. The focus solely on the Russian language listening problem allowed for an extended look into the specific variables potentially contributing to relative levels of individual achievement. The rationale for this approach is based on the Army's priority of need for this specific capability for intelligence collection and the critical importance of this requirement during a period of growing uncertainty in the Soviet Union. The quantitative exploration of the LSCP data base provided one element of a multi-path approach that included an evaluation of the Army's Russian language program, interviews with participants and a review of the associated literature to date. In essence, this exploration is a combination of both quantitative and qualitative methods to determine the relationship of individual characteristics to the ability to listen and comprehend the Russian language.

Statement of the Problem

The basic problem is to determine how those responsible for the Army's Russian language program might improve the selection of Russian language intelligence specialists to meet the service needs. The majority of the Army Russian linguist requirements fall in the Military Occupational Specialty (MOS) 98G, Electronic Warfare/Signal Intelligence

Voice Interceptor. Army Regulation 611-201 identifies the major duties for the Voice Interpreter as: "...supervises and conducts the interception of foreign voice transmissions in tactical or strategic environments, prepares voice activity records, and performs other EW (electronic warfare) related duties." The ability to develop the specific skills for listening and interpreting the Russian language is essential to meet the needs of this position.

Soldiers in a second specialty, Military Occupational Specialties (MOS) 98C, Electronic Warfare (EW)/Signal Intelligence Analyst, also attend the Russian language course at the Defense Language Institute (DLI). Army Regulation 611-201 describes the duties of the Intelligence Analyst as one who "...supervises and performs analysis and reporting of intercepted foreign communications in a tactical or strategic environment, and performs other EW related duties." The difference in the two basic positions is significant. Those soldiers with the MOS 98G, or Voice Interceptors, will continue to use the Russian language in subsequent operational assignments when this skill is needed. The Analysts, or those with MOS 98C, however, will generally perform duties that do not require continued language use.

Overall, the Army has a requirement for approximately 2000 Russian linguists on active duty. Each year over 1000

students enter the basic Russian language course at the Defense Language Institute (DLI) for an intensive 47 week period of instruction. Approximately 500 to 700 students complete the basic course with a basic skill level goal of 2 on the Defense Language Proficiency Test (DLPT) in listening and reading. As indicated earlier, less than 60% of the Russian graduates met that goal prior to the 1987 Program Review. Evidence provided to date indicates that skills decline for the majority of students after graduation and a number of these soldiers are placed in positions that do not require regular use of their skills. Ideally, a set of predictors would allow for a high correlation with the ability to acquire and retain listening and comprehension skills to include some measure of the motivation for skill retention.

The Army investment to operate and maintain the Defense Language Institute (DLI) is substantial (in excess of $50 million per year). A significant part of the DLI effort is dedicated to the Russian language. An improvement in the prediction of success for program applicants to the Russian language training could provide a more capable group of linguists at a lower cost. Charts from the Defense Language Institute's Annual Program Review conducted on January 23, 1990 (Appendix B) underscore the need. For example, of the 1309 students who enrolled in the fiscal year 1989 basic

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Russian course, over 30% were lost due to attrition. Of those, 286 were lost for academic reasons and the rest were administrative losses. This loss rate is not unusual and is comparable to prior year classes. For the 912 students completing the basic course in 1989, only 60% met graduation standards of level 2 for reading and listening and less than 40% of the class reached a level 2 or higher in speaking (DLFP GOSC Summary Report, January 26, 1989).

The intelligence skill position definitions indicate the critical nature of the ability of the Russian linguists in our national defense network. With the unstable situation in the Soviet Union, the on-going discussions for reductions in conventional and strategic weapons and the needs for on-site verification, our dependence on skilled Russian linguists has significantly increased. The problem explored in this research is how the Army might be able to improve the selection of skilled Russian linguists to meet the intelligence specialist requirements. In essence, this effort examined the specific variables contributing to soldier success or failure in the acquisition and retention of the Russian language at the level required for Army intelligence.

Purpose of the Study

Using the LSCP acquired data for Russian students at DLI as the central focus, the individual characteristics

provided by the tests and surveys given during the language course were analyzed to determine variables that might be used to enhance selection of successful Russian linguists. The data from these instruments were compared with the results of the language tests given at the end of the DLI course and at the end of AIT. An improvement in the selection of applicants could provide substantial annual savings by avoiding the costs associated with relocating and retraining soldiers who drop or fail this course. More importantly, the applicants chosen could be those more likely to succeed in the long run in additional skill improvements and in the maintenance of the Russian language to meet the Army requirements. Figure 1 provides a simplified overview of the current selection model used by the Army and proposes an initial improved model using additional criteria to improve selection of potentially successful candidates.

The interviews and related research in Russian language acquisition and retention provided a basis for additional recommended program improvements and/or areas for extended inquiry. For example, an examination of the Army's process of selection, training and retention was an essential part of this research. This included unstructured interviews with DLI Russian Department directors, instructors and students. In addition, interviews and phone conversations

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Current Selection Model:

Intelligence (Armed Services Vocational Aptitude Battery (ASVAB) AGT Composite Score $\geq$ 100)---->Language Aptitude (Defense Language Aptitude Battery (DLAB) Score $\geq$ 95)----->Other Criteria (e.g., security clearance restrictions--AR 611-201)---->DLI SELECTION

Proposed Improved Model:

Intelligence (AGT Composite $\geq$ 100)---->Language Aptitude (DLAB $\geq$ 95)----->Additional Predictor Criteria---->Other criteria (AR 611-201)---->DLI SELECTION

Figure 1. Current Selection and Proposed Improved Model

were held with those responsible for the program and personnel management of Russian linguists in various headquarters throughout the Department of the Army. Findings and recommendations pertinent to decisions that might be under review or considered by the Department of the Army could result in management improvements to the Russian linguist program. This research could also provide some small contribution to the overall body of research on individual characteristics as potential predictors of Russian language performance.

Research Questions

The primary research question is to determine the major factors contributing to the successful acquisition and retention of Russian language listening skills in the Army's program for the selection of applicants. This question was examined using a quantitative analysis supplemented by qualitative research. The quantitative examination used the Language Skill Change Project (LSCP) data to determine the combination of individual characteristics that could lead to improved prediction of a soldier's potential for successful acquisition and retention of Russian language listening skills. This study analyzed 23 individual characteristics for possible predictors of Russian language listening skill performance as indicated by the scores on the Defense

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Language Proficiency Test (DLPT) taken at the conclusion of DLI basic language training and during subsequent Advanced Individual Training (AIT). The primary research question will be examined in three parts:

I. Which variable (if any) or combination of the independent variables measured provide for improved prediction of the scores achieved on the listening portion of the Defense Language Proficiency Test (DLPT) at DLI? At AIT?

II. Using the set of independent variables measured, can membership be predicted in any or all the following groups:

- Academic failure or course completion at DLI?

- Those who reached a level 2 or higher on the DLPT at DLI? At AIT?

III. Are there individual characteristics or combinations in the LSCP data (supplemented by the qualitative interviews) that appear to support or refute prior research findings on the linkage of individual characteristics to the ability to acquire and retain a second language?

A parallel, supplemental effort entailed a qualitative examination of the Army's Russian language program through a literature search combined with interviews with

administrators, instructors and Russian linguists in field assignments who were former students at DLI. This included an overview of the program management of selection of entrants and their training program to include the on-the-job training subsequent to the DLI course. While this should be considered as a supplement to the quantitative analysis, there are additional questions raised and issues addressed that provide a better understanding of the Army's Russian language program and the areas to examine for possible improvements.

Definition of Terms

A list of acronyms used throughout this dissertation is provided for quick reference. In addition, computer codes are provided to allow the reader to cross reference the text with the Language Skill Change Project (LSCP) data in Appendix E (LSCP Data Frequencies and Statistics) and Appendix F (LSCP Data Correlations).

AFLP----------Army Foreign Language Program.

AGT----------Army General Technical composite score on the Armed Services Vocational Aptitude Battery (ASVAB). The independent variable label for this composite score used in this study is Cognitive Ability.

AIT----------Advanced Individual Training. This is the general description for intelligence skill specialty training the soldiers enter after completion of their basic

Russian Language Course at the Defense Language Institute.

ATICON_L------Code name for the criterion variable or the raw score on the Defense Language Proficiency test given at Advanced Individual Training (AIT).

AL-----------Code name for the level scores or language skill level ratings on the Defense Language Proficiency Test (DLPT) given at Advanced Individual Training (AIT).

ASVAB--------Armed Services Vocational Aptitude Battery. This is the general job classification test taken by all new enlistees in the armed services.

BCT----------Basic Combat Training. The eight week course that all Army enlistees must go through to learn fundamental soldier skills. After BCT, new soldiers are sent to their initial training for skill specialties (e.g., Defense Language Institute for basic language training).

CPISI--------Code name used for the California Personality Inventory (CPI) composite scores of the Language Skill Change Project (LSCP) subjects. Composite scores were used from this instrument to measure the independent variable Empathy.

DFLP---------Defense Foreign Language Program. The program for language training for all the armed services.

DLAB---------Defense Language Aptitude Battery. The language aptitude test given to soldiers with AGT scores

over 100 to select and classify entrants for the Defense Language Institute (DLI). The independent variable description for this score was labeled Language Aptitude.

DLI----------Defense Language Institute. The primary language training center for the armed services located in Monterey, California.

DLICON_L------Code name for the criterion variable or the raw score on the Defense Language Proficiency Test (DLPT) given at the end of basic language training at the Defense Language Institute.

DLIFLC--------Defense Language Institute Foreign Language Center. Another term for the Defense Language Institute.

DLPT----------Defense Language Proficiency Test. The language skill test given at the end of basic language training at the Defense Language Institute and annually for soldiers having the language skill specialty requirements. LSCP subjects were also given a different version of the DLPT at the end of their Advanced Individual Training to measure language retention.

DLPT2L--------Code name in the LSCP data base for the criterion or level score on the DLPT at the end of the DLI basic Russian Language Course.

ED-----------Code name for the level of education of the LSCP subjects measured in years and taken from personnel

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records. The independent variable was titled Education.

EPIES---------Extraversion or code name for the score
on the Eysenck Personality Inventory used to measure
introversion or extraversion for the LSCP sample.

FE-----------Code name for the Flanagan Industrial
Test--Expression score used as the independent variable
Verbal Ability in this study.

FIT----------Flanagan Industrial Test. Two subtests
of this series, Expression and Memory, were used to gather
data for the LSCP.

FM-----------Code name for the independent variable
Memory as measured by the LSCP subjects' scores on the
Flanagan Industrial Test--Memory.

GEF----------Field Independence or the code used for
the scores of the LSCP subjects on the Group Embedded
Figures Test (GEFT) that was administered to measure this
trait.

GENDER--------Sex of the LSCP subjects taken from
personnel records. Gender was also used as a potential
predictor variable based upon findings in prior studies.

GOSC---------General Officer Steering Committee. The
Defense Foreign Language Program has a General Officer
Steering Committee that includes members from each of the
services to provide annual program review and oversight.

LSCP----------Language Skill Change Project. The title

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of the four year longitudinal study the Army initiated in 1986 to examine factors affecting acquisition and retention of foreign language listening, reading and speaking skills of 1906 soldiers taking their basic language courses at DLI in four languages (Spanish, German, Russian and Korean).

MAT-50--------Measure of Ambiguity Tolerance-50. The instrument used to measure a subject's tolerance of ambiguity. Tolerance of ambiguity was cited as an indicator of second language learning ability in prior studies and examined as one of the predictor variables in this research.

MATS1---------The code name given to the MAT-50 score or Ambiguity Tolerance variable in the LSCP data base.

MCODE---------Code name for the Military Occupational Specialty (MOS) or skill area of the soldiers in the LSCP sample. Soldiers were assigned skill specialties prior to their entry into basic language training at DLI. This variable was also included in the list of independent variables based on the possible influence of subject expectations of future language use on their commitment to the language training at DLI.

MOS-----------Military Occupational Specialty (see MCODE above).

MOS 98C-------Military Occupational Specialty for the Electronic Warfare/Signal Intelligence Analyst who analyzes and reports on intercepted foreign communications. Soldiers

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in this skill area generally are not required to use their language skills on a continuing basis after completion of DLI.

MOS 98G-------Military Occupational Specialty of the Electronic Warfare/Signal Intelligence Voice Interceptor who intercepts or listens and intercepts foreign voice transmission. Soldiers in this skill area generally continue to use their language skills after graduation from DLI.

MOTIV A-------Code name for the score on the first set of Gardner Attitude/Motivation Scales given to the LSCP students prior to their basic language courses at DLI to measure the variable Motivation at the Start of Training. This variable was selected based on findings cited in prior studies.

MOTIV-B-------Code name used for the second set of Gardner Attitude/Motivation Scales given to the LSCP subjects in their 12th week of language training at DLI to measure the variable Motivation During Training. This variable was also selected for examination based upon prior research findings.

NLANG--------Code name for Prior Language training or experience as taken from the personnel records of the LSCP subjects. This variable was included based upon the potential of experience in second language learning as a

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contributor to an individual's ability to acquire another foreign language skill.

POISI--------Code name for the scores the LSCP subjects achieved on the Personal Outlook Inventory as a measure of the variable Self Confidence also cited as an indicator of second language ability in prior research.

RIGHTHAN------Code name for Handedness (right or left) as taken from a background questionnaire given to the LSCP subjects. This variable was included based upon prior research indicating left (right handed) or right (left handed) brain dominance as a possible predictor of foreign language learning abilities.

SILL----------Strategic Inventory for Language Learning. This instrument was initially developed for the LSCP by Rebecca Oxford (University of Alabama) to measure an individual's strategies for learning a foreign language. Prior research also indicated a potential for language ability prediction based upon an individual's strategies for foreign language learning. Composite score descriptions for variables extracted from the SILL Version 2.1 used in the LSCP research are listed below.

SILL_1--------Actively Uses the Second Language in Functional Practice. Individual looks for and uses opportunities to use second language skills.

SILL_2--------Good Study Habits. Includes practices

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such as highlighting, summarizing, making word lists and self assessment/testing.

SILL 3--------Gives Meaning to the Second Language. Searches for and associates second language meaning based on situational clues, relationship to first language, etc.

SILL 4--------Uses mental Images. Visualizes situations, uses rhyming, audio and visual images to decipher second language meaning.

SILL 5--------Intensity of Study. Uses time well and dedicates time/attention in second language study.

SILL 6--------Study Planning. Techniques used by an individual to identify areas of focus and allocate time/effort appropriate to the tasks.

WS------------Code name for the score on the Watson-Glaser Critical Thinking Appraisal used to measure the independent variable Critical Thinking or analytic reasoning. This variable has also been cited in prior research as an indicator of second language learning ability.

Limitations of the Study

The quantitative part of this research is focused on the initial LSCP data base that was collected from students at the Defense Language Institute (DLI--February, 1986 to July, 1987) and towards the end of their Advanced Individual

Training (AIT) courses approximately three to four months
after completion of DLI. As indicated above, attrition for
both academic and administrative reasons was generally in
excess of 30% for Russian students during the DLI course.
There were additional losses during AIT although the
majority of these losses were simply those students who did
not take the Defense Language Proficiency Test (DLPT) at the
end of AIT. The missing data of the AIT sample was
substantial since the group was no longer under the control
of the major sponsor of this study at DLI (e.g., only
approximately 50% of the population of the DLI Russian
graduates at AIT had DLPT speaking scores returned). The
remaining sample population for DLPT listening scores,
however, was 348 or 76% of the 460 students who successfully
completed DLI. This sample size was considered sufficient
for continued examination. The issue of missing data is
examined further in the Analysis section of Chapter Three
and in the Discussion section in Chapter Four.

A further limitation of the quantitative analysis is
the restricted range of the LSCP sample. These students
were selected for admission to DLI based on the high scores
they achieved in their service entry examinations for
general intelligence (AGT) and scores they achieved on the
language aptitude (DLAB) examination. In addition, there
were other standards they were required to meet for the

specific nature of the intelligence field work. For example, they had to be eligible for relatively high level security clearances. A restricted range of this magnitude compresses the data in a relatively narrow corridor of high intelligence/language aptitude and has a tendency to lower the correlation coefficients.

The qualitative part of this effort has been limited to the research on the Russian language program in the Army via reports and regulations, phone conversations and interviews primarily in the Washington, D.C. area. One day was spent on the DLI campus in discussions with members of the language research staff, department heads, students and instructors. Two days were spent interviewing soldiers in linguist field assignments at Fort Meade, Maryland. In addition, interviews were conducted with Russian linguists at the On-Site Inspection Agency located at Dulles International Airport in Washington, D.C. Follow-up interviews were conducted by phone. Consistent patterns, however, were found in a sufficient number of these discussions to support some recommendations and areas for further inquiry.

Significance

This research has potential for contribution to the Army's Russian linguist program at a critical juncture in

our relationship with the Soviet Union. One outcome could be an improvement in the selection of applicants. A higher rate of successful graduates could result in considerable improvement to our intelligence-gathering capabilities and may also result in significant dollar savings. Interviews, phone conversations and a comprehensive review of the Russian linguist program could also contribute to overall improvements in the management of these critical resources. In addition, as mentioned above, there are few large sample studies in this country on the specific problem of language retention and fewer still devoted solely to the issues of Russian language retention. The results of this effort may contribute in some small measure to this field of research. In sum, with the relatively unstable situation in the Soviet Union and the on-going discussions on the potential reductions in conventional and strategic armaments, our dependence on skilled Russian linguists has significantly increased and their abilities will continue to be critically important to our national security for the foreseeable future.

CHAPTER TWO

Literature Review

There are a number of prior studies available in the
general area of second language research that focus on
individual differences as potential predictors of language
skill achievement. In addition, there are regulations and
additional studies on the foreign language challenges
specifically focused on the needs of the Department of
Defense. This review first provides an overview of the
Department of the Defense/Army Russian Language Program to
provide some understanding of the environment and objectives
of this effort. Next we examine each of the factors
indicated by prior research that could contribute to the
understanding of individual characteristics as potential
predictors of second language listening and comprehension
abilities. From the research covered, there were few
longitudinal studies that examined the dual problems of
acquisition and retention of the Russian language and fewer
still that focused specifically on listening and
comprehension. There were, however, a number of research
efforts and publications on the nature of individual
differences that indicated possible relationships to the
acquisition and retention of a second language. It is in
these areas that some inferences were explored on the
possible linkage of individual attributes as predictors for

the acquisition and retention of Russian language listening and comprehension skills by Army linguists.

Defense/Army Russian Language Program

Overall responsibility for the Defense Foreign Language Program (DFLP--all foreign language training) rests with the Assistant Secretary of Defense (Force Management and Personnel) or ASD(FM & P). This office provides the general policy guidance for all services (Army, Air Force, Navy & Marine Corps) in the area of foreign language requirements and training. Assisting in this effort is the Assistant Secretary of Defense (Command, Control, Communications & Intelligence) or ASD(C3I) who has been designated the Primary Functional Sponsor (PFS) to provide planning, programming, management and administrative guidance to the Executive Agent. Since the Army has the majority of the foreign language requirements, the Secretary of the Army has been designated the Executive Agent for management of the Defense Foreign Language Program to meet all Department of Defense requirements (Ford, 1990).

Within the Army, the Director of Training in the Office of the Deputy Chief of Staff for Operations and Plans (ODCSOPS) has been delegated the responsibilities of Executive Agent for the DFLP through the Assistant Secretary of the Army for Manpower and Reserve Affairs or ASA(MRA). In this role, the Director of Training is responsible for

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management and administration of all Department of Defense foreign language training requirements and provides guidance to the Commanding General, US Army Training and Doctrine Command (TRADOC) for program execution. In addition, the Director of Training, ODCSOPS, also serves as the Chairman of the DFLP General Officer Steering Committee (GOSC). The GOSC includes general officer level members from the Office of the Secretary of Defense, all services and other affected agencies and is required to meet annually to review and make recommendations on the DFLP. Finally, each service has a Service Program Manager (SPM) with primary staff responsibility for the development, coordination and implementation of their respective foreign language programs (AR 350-20, 1987).

Under TRADOC, the Defense Language Institute Foreign Language Center or DLI is charged with the responsibility for the "...conduct, supervision, and technical control of foreign language training in the DFLP." (AR 350-20, 1987) The Commandant, DLI, in essence, has overall responsibility for foreign language training for all of the Department of Defense to include non-resident training. At DLI, the School of Russian has the task of training basic Russian language skills. There are three departments under the School of Russian that conduct the instruction in small groups of up to 10 students with one or two Russian

instructors per group (DLIFLC General Catalog, 1989-1990).

Figure 2 is a listing of the overall responsibilities for

the DFLP from the Department of Defense to the DLI.

In a study project for the Army War College, LTC Ford

(1990) interviewed a number of people involved in the DFLP

and cited the following observations:

- Despite considerable cost and a lengthy

training program that is frequently a full year, DLIFLC

(Defense Language Institute Foreign Language Center)

consistently graduates soldiers who are unable to perform

the basic duties expected of a linguist;

- Units never seem to be allocated their full

compliment of linguists. There are always critical

personnel shortages despite extremely attractive enlistment

and selective reenlistment bonuses;

- The AFLP (Army Foreign Language Program) is not

only very costly, approximately $59M in FY89, it is also

very inefficient as the entire language community is

statistically retrained every 3 to 4 years; and

- Linguists never seem to be "fully trained."

Instead, they spend an inordinant amount of time in a formal

school environment, involved in a REDTRAIN (readiness

training) opportunity or participating in unit language

training.

Among a number of recommendations, LTC Ford (1990)

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        Organization:                    Responsibilities:

Department of Defense:

     - Assistant Secretary of Defense......DFLP Overall

       (Force Management & Personnel)        Policy

     - Assistant Secretary of Defense......Planning,

       (Command, Control, Communications    Programming,

       & Intelligence)                      & Management

Department of the Army:

     - Secretary of the Army...............DFLP Executive

                                           Agent

     - Assistant Secretary of the..........Policy

       Army (Manpower & Reserve Affairs)    Guidance

     - Director of Training, ODCSOPS.......Mgt/Admin of

                                           DFLP &

                                           Chmn, GOSC

     - Service Program Manager.............DFLP Staff

                                           Resp

     - Commanding General, TRADOC..........Supervis/Opns

                                           of DLI

     - Commandant, DLI.....................DFLP Language

                                           Training

     - School of Russian...................Basic Lang

                                           Training
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Figure 2. Defense Foreign Language Program Responsibilities

states that DLI should continue pursuing the goals identified in the DLIFLC Proficiency Enhancement Plan (1989). This Plan cites a goal to achieve proficiency level 2 on the DLPT for listening and reading for all basic course graduates by October 1993. For the basic Russian course, this goal was set for October 1992. A number of improvements were initiated to facilitate this effort to include, for example, team teaching, teacher incentives, organizational changes and 'proficiency based' (vs rote learning) instruction (DLIFLC Proficiency Enhancement Plan, 1989). LTC Ford (1990) also recommends development of a diagnostic language evaluation that could be cross referenced to self paced instruction modules to allow the linguist to determine specific areas he/she might focus on for improvement. In sum, there are several studies and evaluations with recommendations that have been considered or adopted to enhance the basic language acquisition programs. Many of these recommendations are reviewed annually by the Defense Foreign Language Program (DFLP) General Officer Steering Committee (GOSC) for resourcing and many are implemented by the Commandant, Defense Language Institute (DLI).

To meet its Russian linguist requirements, the Army administers the DLAB to all soldiers entering the service who score 100 or higher on the AGT portion of the Armed

Services Vocational Aptitude Battery (ASVAB). After completion of their Basic Combat Training (BCT), those with DLAB scores of 95 or higher are eligible to enter the basic Russian language course at DLI provided that they meet the other requirements for the MOS. For example, for MOS 98G, Electronic Warfare/Signal Intelligence Voice Interceptor, the soldier must meet the following additional requirements:

- pass a phonetic sound discrimination test

- have a security clearance of TOP SECRET with eligibility for access to sensitive compartmented information (SCI)

- be a high school graduate or equivalent

- pass a hearing acuity test on an audiometer where sound amplitude must not exceed 15 decibels at frequencies of 250, 500, 1000, 2000 and 4000 CPS

- no record of conviction by court martial or by civil court for any offense other than minor traffic violations be a U.S. citizen. (AR 611-201, 1988)

For MOS 98C, Electronic Warfare/Signal Intelligence Analyst, the requirements are essentially the same except for the listening skills and an additional requirement for a test of basic analytical abilities. Skill specialties (MOS) are assigned to soldiers prior to attendance at DLI. However, training in these skills is provided at AIT after completion of the DLI basic course. After completion of

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BCT, those soldiers who qualify enter an intensive 47 week basic Russian language course at DLI with six hours of classes each day followed by two to three hours of homework each evening. Students are dropped from the course for both academic and administrative reasons. Academic drops generally occur early in the course or within the first three to four months. Administrative drops are also large on the front end of the course and can be attributed to disciplinary reasons, loss of security clearance or reclassification to another skill area (Bush, 1987). For the LSCP classes, the primary predictor data were collected at the beginning of the DLI basic course.

At DLI, classes are conducted in small groups with one or two instructors and ten or fewer students per class. Course materials, audio visual capability and facilities are generally excellent. The instructors are largely Russian immigrants or second generation immigrants fluent in the Russian language. Instructors must have a level 2 rating in the English language. They are not required to be college graduates. The environment is a combination of Army post and university with administrative and support facilities on site. While there are many languages taught at DLI, Russian language students comprise the largest single group.

Those soldiers who complete the basic Russian course take the DLPT after completion of the last of 14 modules.

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This score becomes the baseline for the soldier and is recorded in his/her personnel file. Upon completion of this course at DLI, the soldiers continue their training in skill specific areas at Advanced Individual Training (AIT) located at Goodfellow Air Force Base, Texas. Here they generally are entered in either the MOS 98G, Electronic Warfare/Signal Intelligence Voice Interceptor, or MOS 98C, Electronic Warfare/Signal Intelligence Analyst Courses. In the Voice Interceptor Course, students continue to work with Russian language training in job specific tasks for approximately 85% of the nearly three months period. However, a different vocabulary is taught that is more related to the position requirements vs the basic Russian taught at DLI. For the Analysts Course, instruction is not continued in the Russian language. Only approximately 40% of the students entering this four months course have received prior Russian language training and those who did complete DLI must continue their language maintenance training on their own time. A language laboratory is available for their use during non-duty time (Hibar, D. R., CW3, personal communication, 1990).

A Defense Language Proficiency Test (DLPT) exam is generally required only once per year and is generally not a requirement at AIT since this training is normally completed within six months after the soldiers graduate from DLI. The DLPT was administered to the LSCP students at or near the

end of AIT to determine language loss after completion of DLI. There is some question on the conditions of the second DLPT administered at AIT. Apparently the soldiers undergoing training at AIT were on a tight schedule of between 13 to 16 hours per day (including soldier training, physical fitness, etc.) that did not provide for the additional time to take the DLPT. In addition, the students were told that the results of this test would not count against them for proficiency or, in essence, would not become a part of their personnel records. An extract from a memorandum after a phone interview with an AIT instructor who was present during the administration of the LSCP DLPT at Goodfellow Air Force Base indicates the nature of the test conditions: "...when the LSCP was being conducted here, many of the soldiers were taking their DLPT after a long day in class. We run a two shift operation (0600-1500/1500-2400) here. We tried to schedule the DLPTs when a group of target soldiers were working the evening shift (doing it before class). That was not always possible. Considering the duty day..., you can see that everyone's heart may not have been into taking the DLPT....especially since it did not count for proficiency pay purposes." (Hibar, D.R., CW3, personal communication, 1990)

Figure 3 provides an overview of the acquisition and training of the Army intelligence Russian linguist

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Basic Combat Training (BCT--8 weeks):

    Candidates selected based on:

        - AGT $\geq$ 100 ---> DLAB $\geq$ 95

        - Other factors (security clearance, etc.)

    Selected candidates assigned an MOS & sent to DLI.

Defense Language Institute (DLI--47 weeks):

    (LSCP sample students were administered predictor tests/questionnaires at the beginning of the course.)

    Course attrition due to:

        - Academic failures on exams

        - Administrative reasons (e.g., assigned new MOS)

    Course completion/administered DLPT:

        - Scored $\geq$ level 2 (course goal)

        - Scored < level 2

    All course completions advanced to AIT

Advanced Individual Training (AIT--12 to 18 weeks):

    MOS 98G--Voice Interceptor (12 weeks) & continued language training

    MOS 98C--Analyst (18 weeks) & no language training

    (LSCP (only) given DLPT at/near end of course.)

    Few drops for academic/administrative reasons

Figure 3. Army Russian Linguist Development

specialists. In sum, the language development program for the Department of Defense has visibility at the highest levels and is reviewed at least annually in some detail by the GOSC to determine the status of the program and redirect resources or priorities as required. Administration of the Russian language program at DLI and in the field is the responsibility of the Department of the Army. The primary management of this effort is delegated to the Commandant, DLI. Once the students leave DLI, however, basic Russian language skill maintenance is primarily an individual responsibility. While the majority of DLI graduates continue into the Voice Interceptor Course (e.g., 74% for the LSCP sample) with additional language instruction, the vocabulary is quite different from that required by the more basic language DLPT. Finally, there was some question on the motivation of the LSCP sample students who did or did not take the DLPT at the end of AIT based on the test conditions and instructions.

Individual Characteristics and Language Acquisition/Retention

Prior second language studies have indicated a variety of individual traits as possible predictors of success in second language acquisition. For the purposes of this review, these variables are divided into four categories.

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The first category examined is the cognitive traits that seem to have the strongest evidence of linkage to predictive performance. This includes such measures as intelligence, aptitude and memory. The second category is termed attitude/motivational and consists of that body of research linking successful second language performance with, for example, integrative and instrumental motivation. The third category is labeled 'personality variables' to put together those variables such as self confidence, extroversion, introversion, empathy and ambiguity tolerance in a categorical description for examination. Finally, some research has indicated a possible linkage of biographic variables (e.g., gender, education, etc.) with second language achievement.

Cognitive Variables

Prior research that seemed to support the use of cognitive traits as possible predictors of performance in a second language were reviewed by Carroll (1981) in his article "Twenty-five Years of Research on Foreign Language Aptitude." In this paper he identified four major components of second language aptitude that appear to be supported by prior research:

1. phonetic coding ability or an ability to identify distinct sounds, to form associations between those sounds and symbols representing them, and to retain these

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associations;

     2. grammatical sensitivity or the ability to recognize the grammatical functions of words (or other linguistics entities) in sentence structures;

     3. rote learning ability for foreign language materials or the ability to learn associations between sounds and meanings rapidly and efficiently, and to retain these associations; and

     4. inductive language learning ability or the ability to infer or induce the rules governing a set of language materials, given a samples of language materials that permit such inferences.

Based on these general findings in a review of a number of prior studies, some predictability might be expected between the cognitive attributes of syntax skills, verbal memory, analytic reasoning and general intelligence and performance on the listening skills portion of the DLPT. While the case for the cognitive style may not be as strong as that for the intelligence and language aptitude attributes, there are a number of studies that would indicate this area is worthy of investigation. The connection between field independence and second language acquisition has been cited by several researchers. In a research paper printed in <u>Foreign Language Learning--A Research Perspective</u> (1987), Susan Cameron Bacon cites

several studies linking field independence with a higher
degree of success in second language acquisition (D'Anglejan
& Renaud, 1985; McLaughlin, 1980; Naiman, Frohlich, Stern, &
Todesco, 1978; Parry, 1983; Tucker, Hamayan, & Genesee,
1976). She concludes by stating that the field independent
individual has an advantage in the normal testing situation
where face to face skills are not required and suggests that
the field dependent individual may perform best in
situations where eye contact, body language and facial
expression are factors in communication. In addition, she
indicates the field dependent subject has an advantage in
handling ambiguity in a social situation. Krashen (1981)
also describes an analytic orientation or field independence
as an indicator of second language success. He cites
studies that show a relationship between second language
success and field independence (ability to perceive parts of
a field as distinct from the whole) with high school and
college level second language students (Naiman, Frohlich, &
Stern, 1975; Seliger, 1977).

In a study of 61 adults engaged in learning English as
a second language, Chapelle and Roberts (1984) used the
Group Embedded Figures Test (Witkin et al., 1971) to
determine linkage of field independence with performance on
an English proficiency test (TOEFL). Results indicated
"...students who were highly FI (field independent) did

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better on all of the language measures; moreover, the correlations between FI and the end of semester scores were typically stronger than those between FI and the beginning of semester scores, thus indicating that FI students were more likely to score higher on the proficiency measures after a semester of L2 study." (Chapelle & Roberts, 1984)

Stephen Krashen (1981) describes his 'Monitor Model' for second language acquisition in which he suggests adults have two methods for acquiring the basic rules of the new language. The first method is 'implicit' or subconscious like that of a child learning his/her first or second language. The second method is described as 'explicit' or conscious learning of the new language in the traditional sense of 'learning.' Second language fluency is derived, according to Krashen (1981), from an adult's subconscious competence--not the 'learned' or conscious ability. The 'explicit' or 'learned' competence serves only as a 'Monitor' of the subconsciously initiated performance. Krashen (1981) suggests that there are individual variations in the use of Monitor or explicitly learned abilities. Some individuals appear to want to 'know the rules' and overapply the Monitor at times to the detriment of language production. Others tend to ignore the rules and use what they can 'pick up' in language learning situations. This second group, however, tends to perform at the expense of

grammatical accuracy. Krashen (1981) concludes that the best approach is in the use of the Monitor as appropriate and "when it does not get in the way of communication" (Diller, 1981, p. 157). Finally, Krashen (1981) reviews the work of Carroll (1973), Pimsleur (1966) and others on aptitude and attitude factors as they relate to the Monitor Model in second language acquisition. He describes two of Carroll's (1973) three language aptitude components, 'grammatical sensitivity' and 'inductive ability,' and one of Pimsleur's (1966), 'verbal intelligence,' as having a direct relationship with the Monitor or conscious learning ability. In the book, Individual Differences and Universals in Language Learning Aptitude (Diller, 1981), based on papers submitted to the 1977 conference on the same subject at the University of New Hampshire, Ann Peters cites analytic differences in the strategies of children in their approach to language learning. In the 'Analytic' approach, children attempt to gain the language by an inductive method of one or two word utterances gradually building to longer combinations over some period of time. In the second or 'Gestalt' strategy, children attempt to complete what appears to be whole sentences or, in essence, proceeding from the whole to the individual elements for language development. Peters concludes by suggesting a more comprehensive examination of the 'Gestalt' approach to

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language learning. Although this study was limited to a longitudinal investigation of one subject, there may relevance to second language acquisition in the dominance of either the 'Analytic' or the 'Gestalt' approach as a factor in language performance prediction.

Motivation/Learning Strategy Variables

There are many studies supporting the predictability of the Attitude/Motivation factor. Citing research by Tucker, Hamayan and Genesee (1976) of 64 Anglo students studying French, Rebecca Oxford (1982) repeated the findings that "...Regardless of group membership, students who were highly motivated, who had high need achievement, and who had positive attitudes towards French performed better in French....The attitudinal-motivational variable was a significant predictor for all criterion measures." In the same text, Gardner (1985) reviews several studies with similar findings and concludes with hypotheses that these factors will also serve as predictors for second language retention.

In describing attitudinal factors, Krashen (1981) cites motivational elements that may have a direct bearing on the student's intake and use of a second language. He states that simply listening is not enough to enable acquisition to take place and describes the use of a 'socio-affective filter' (Dulay & Burt, 1977) that affects the degree of

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learning. Individuals with a strong 'filter' tend to be
closed to acquisition while those with a 'low filter' are
more receptive and gain a greater degree of input. This
'low affective filter' is directly related to what Krashen
(1981) identifies as 'integrative motivation' or a desire on
the part of some language students to be like the more
fluent speakers of the second language. A second type of
motivation is described by Krashen (1981) as 'instrumental'
or a motivation based on practical necessity. Instrumental
motivation is more closely related to a stronger affective
filter and is an indication on the part of the subject for a
need to acquire only those elements of a language that are
required for the position or situation at hand. He sums up
this section by stating that motivation is a strong
predictor of second language achievement. A positive
attitude towards the classroom and the teacher may also have
a relationship with success in second language according to
Krashen due to the tendency for increased participation of
these students in classroom activities.

Krashen (1981) concludes this research with a
description of 'good' and 'bad' language learners. The
'good' language learners have a low affective filter and may
or may not be explicit in their approach. He cites the
study by Naiman, Frohlich and Stern (1975) in their survey
of 34 "good language learners" as indicating that "immersion

and motivation" were the most important factors affecting their success in language acquisition. In essence, the 'good' language learners are those who take the additional initiatives required to acquire a working knowledge language capability and have a higher tendency to experiment and use (low affective filter) their language skills. The 'bad' language learner, however, either does not have the motivation (e,g., low interest, apprehension) or ability and may be an over or under user of the Monitor. In his final comment of this paper, Krashen suggests that attitude is more directly related to acquisition or implicit (subconscious) learning than explicit or conscious learning and may be the most important factor in acquiring a second language.

Krashen's((1981) research provides a good overview of some of the material available at that time, but appears to be lacking in the presentation of sufficient empirical evidence to substantiate the concluding remarks. There are indicators of support for his approach in the available literature, yet not to the degree indicated by this review. For example, Carroll (1981) cites a number of studies that might have contributed to this effort and, in addition, indicates the need for more extensive longitudinal empirical research. In a review of the Monitor Model, McLaughlin (1987) states that Krashen's theory does not meet the basic

criteria for evaluation which he lists as: "(1)...must have definitional precision and explanatory power, (2)...must be consistent with what is currently Known, (3)...must be heuristically rich in its predictions, and (4)...must be falsifiable" (pp. 55-58) He summarizes his critique by pointing out that the acquisition-learning separation is ill defined with no way of determining which process is operating at any point in time. In essence, the Monitor theory, according to McLaughlin (1987), cannot be empirically tested and is not consistent with existing linguistic theory. Mclaughlin (1987) softens his critique to some degree by indicating that much of what Krashen describes is consistent with current thinking on language teaching. For example, Krashen's descriptions of the supporting evidence of the effects of affective factors in second language acquisition and the need for a move towards more communication rather than grammar based instruction are in line with the existing evidence in linguistic research. McLaughlin (1987) simply states his argument is with Krashen's research and his attempt to justify the Monitor Model.

In The Loss of Language Skills, Lambert and Freed (1982) provide a series of research papers on this subject presented at a conference held in May 1980 at the University of Pennsylvania. Reviewing a study on a group of English

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speaking high school students studying French in Canada, Gardner (Lambert & Freed, 1982) cites two factors that were related to French achievement. One factor he describes as language aptitude based on the loadings it received on the Modern Language Aptitude Test (MLAT). The second factor he describes as socio-motivational derived from a combination of factor loadings on the measures on "...Attitudes toward French Canadians; Motivational Intensity to Learn French; and Integrative...Orientation in language study" (p. 29-30). In the same section, Gardner cites a number of studies by others that come to the same conclusions that two primary factors, attitude/motivation and language aptitude, are related to second language achievement.

In this article, Gardner (1985) reviews a study by Edwards (1977) of native French (246) and native English (209) speaking Canadian Public Service employees who were tested on proficiency of their second language at intervals of 6, 12, and 18 eighteen months (one third of the original sample in each period) after their initial assessment of second language achievement. In essence, the results indicated there was little decline in the active (writing & speaking) or passive (listening & reading) skills during the first six months for both groups. However, as the periods lengthened to 12 and 18 months, the Anglophone samples had a significant decline in test performance on French while the

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Francophones maintained their initial proficiency in English. Edwards (Gardner, 1985) attributed these results to the fact that the Francophones had the opportunity to use their second language more frequently in their work settings than did their Anglophone counterparts. Most significant study variables were the subjects' confidence in using their second language and opportunities to use those skills. In follow-up interviews with 67 Anglophones and 28 Francophones, Edwards (Gardner, 1985) found that the Francophones had little difficulty in using their second language abilities in almost any situation while the Anglophones could use their French for only the basic tasks required in their work situations. In sum, Edwards (Gardner, 1985) attributes the successful achievement of second language proficiency to three factors: "1. successful prior or initial learning; 2. opportunity to use the information initially acquired; and, 3. interest in using the linguistic resources initially acquired" (Gardner, 1985). In concluding this section, Gardner (1985) postulates two hypothesis for attitude, motivation and aptitude factors in second language retention:

"Hypothesis I...since attitudinal/motivational characteristics are related to the level of second language proficiency, they will relate to second language retention (as would language aptitude)."

"Hypothesis II...since attitudinal/motivational
characteristics are related to indices of participation in
language-related situations, they will relate to attempts to
maintain second language skills once training has
terminated."   In this paper, Gardner (1985) seems to draw
on the results of a significant number of research efforts
that indicate a positive relationship between second
language acquisition and retention and attitude/motivation
factors.   Somewhat related to the area of motivation,
several studies have indicated a connection between learning
strategies and language acquisition and retention.   In a
paper developed for the Army Research Institute (ARI),
Rebecca Oxford (1986) cites research (Rubin, 1975; Rubin &
Thompson, 1982; Reiss, 1983) supporting a linkage between
learning strategies and second language learning.

Personality Variables

In a study of teacher perceptions of successful and
unsuccessful language students, Naiman, Frohlich and Stern
(1975) summarized that teachers thought of their most
successful second language students as "...meticulous
(perfectionist), mature, responsible, self-confident,
extrovert (bubbly, outgoing), independent, passive, shy and
introverted."   Unsuccessful students were described as
having a "...lack of self-confidence and as being timid,
shy, careless, afraid to express themselves and nervous."

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While there seem to be contradictions, this provides some
insight to the overall status of research and agreement or
disagreement on personality variables as potential
predictors of second language capability. Krashen (1981)
also identifies personality factors as having a possible
relationship with the ability to acquire a second language.
'Self confidence,' 'lack of anxiety,' 'outgoing' and 'self
esteem' comprise a category of traits that may also relate
to success in a second language. These factors relate to
the degree of filtration mentioned above with the self
confident or more outgoing individual having a lower
affective filter and being more receptive and less inhibited
in the acquisition and use of a new language. Empirical
research on extraversion or introversion as an indicator of
linguistic success is mixed. For example, Chastain (1975)
conducted a research effort on French (80), German (72) and
Spanish (77) students going through an introductory
university course using the Marlowe-Crowne Scale (1964) to
determine the degree of student extroversion. His findings
indicated significant correlations with successful German
and Spanish students, but no significant correlation with
success in French. Krashen (1981) also cites studies by
Chastain (1975) and Pritchard (1952) that linked second
language performance with an outgoing personality or
extroversion.

Smart (1970), however, found extraversion to be negatively correlated with second language success when ability was controlled. In a study of French university students, he divided the group into underachievers (13), average (58) and overachievers (13). Using a measure of 'social spontaneity,' he found the overachievers to be significantly lower in spontaneity than the average achiever group. In essence, the overachievers were primarily an introverted group and preferred to work alone. In addition, the study also found the under achiever group to have a tendency towards introversion.

Krashen (1981) identifies empathy as a potential predictor of second language success in suggesting that the empathetic individual may be able to more easily identify with individuals of another language and be more receptive to acquiring the necessary skills. He cites empathy as a trait that is indicative of a person's ability to more easily acquire the comprehension and performance skills of a new language. Taylor, Catford, Guiora, and Lane (1971) sum up the perception that "the more sensitive an individual is to the feelings and behaviors of another person the more likely he is to perceive and recognize the subtleties and unique aspects of the second language and incorporate them in speaking." Elaine Horowitz (1987) of the University of Texas also cites studies relating empathy (Guiora, Brannon &

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Dull 1972; Horowitz & Horowitz, 1977). Nonetheless, research evidence supporting empathy as a trait linked to second language performance is minimal. For example, Schumann (1975) stated "The experiments that have been conducted to examine this relationship must be seriously questioned but the ideas which have been generated by them are, nevertheless, intuitively appealing...." In essence, it appears to be intuitively correct to assume that the empathetic individual would be more attentive and receptive to a second language learning environment, however, the empirical evidence is weak.

Ambiguity tolerance has been cited by a number of authors as one characteristic of a 'good language learner.' It has been hypothesized that those who have difficulty in ambiguous situations tend to have discomfort with a second language learning environment. To the contrary, the 'ambiguity tolerant' individuals seem to thrive in complex and unstructured situations and should do well in adapting to the challenge of a second language learning situation. Naiman, et al. (1975), in a study of high school students studying French in Toronto, used imitation and listening tasks to examine the relationship of ambiguity tolerance and second language performance. This research found a positive relationship between performance in French and ambiguity tolerant individuals. Naiman (1975) reported "...those

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students who have a high intolerance of ambiguity may have a great deal of difficulty dealing with the amount of ambiguity present in the second language classroom and therefore may drop the subject as soon as possible. The possibility of such an occurrence was strengthened by the fact that tolerance of ambiguity was a significant predictor of success only in Grade 8. Grade 10 and Grade 12 students were both significantly more tolerant of ambiguity than Grade 8 students." In a study of English as a second language students (61), Chapelle and Roberts (1984) found a significant positive correlation between ambiguity tolerance (using the MAT-50) and end of semester scores on an English proficiency (TOEFL) test. In essence, there appears to be some evidence to warrant investigation of ambiguity tolerance as a possible predictor in the ambiguous environment for learning Russian language listening skills.

In her investigation of the linkage of self esteem (using the TSCS) and performance on a French speaking test (181 students in first year French at the University of Michigan), Adelaide Heyde Parsons (1983) found a significant positive correlation between all aspects of self esteem and spoken French. In addition, she concludes that "...the teacher appears to have an important influence both on the esteem of the student at the task and specific level and on their oral performance." (Parsons, 1983) In an examination

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of anxiety as a factor for Francophone Canadians studying English, Clement, Gardner and Smythe (1977) found that self confidence occurs as a result of positive experiences in second language learning and contributes to motivation in continued learning. While the case for self confidence as a predictor may not be as strong as some of the other variables, there appears to be adequate rationale to explore this trait in combination with other potential predictors.

Biographical Variables

Some studies have supported the use of certain biographical characteristics as predictors of success in acquiring a second language. For example, handedness as an indicator of left or right brain tendencies has been postulated to be a potential predictor of second language performance. Reviews in this area also are mixed. In a study of 72 Israeli right handed high school students involved in learning English as a second language (Gaziel et al., 1977), Loraine Obler noted an increase in right visual field effect as the students progressed from the seventh to the eleventh grade (Diller, 1981). In conclusion, she suggests "...there is right hemispheric participation in second language learning, and that this participation is particularly active during the early stages of learning the second language." In another study of 61 English speaking right handed adults learning French as a second language,

Schneiderman and Wesche (Krashen, 1983) found their subjects more left lateralized for English than for French. In addition, they found no evidence that would lend credence to their hypothesis that students would become more left lateralized with increasing proficiency in their second language.

There are a number of indications in the literature that appear to suggest gender as a possible predictor of second language success. In the study above, for example, Schneiderman and Wesche found the female participants in their study to be slightly more proficient in French than males; however, the differences were not supported as significant in t-test results. In a review of studies on gender learning differences, Maccoby and Jacklin (1974) found the higher social tendencies of females to be a factor contributing to their apparently greater facility in learning second languages.

Summary

In general, these and other related studies support an investigation into the possible contribution of individual difference variables to the successful acquisition and retention of Russian language listening skills by Army soldiers completing the course at the Defense Language Institute. The literature seemed to point towards an

ability to initially acquire the language skill, a desire or motivation to maintain/improve those skills once acquired and the opportunity to use the acquired capability (i.e., Russian language listening skills) in a focused environment. Other factors (e.g., empathy, extraversion, etc.) appeared to be subsets or secondary contributors to these with potential for incremental improvements in the prediction of success or failure for second language learning.

Based on this review, the research questions are re-cast to examine each stage of the Russian linguist development process (see Figure 3):

- Were the basic criteria (e.g., AGT $\geq$ 100 & DLAB $\geq$ 95) maintained in selecting the LSCP soldiers? If not, how did the group that had below criteria scores perform?

- Does the baseline Cognitive Ability (AGT) and Language Aptitude (DLAB) selection criteria predict successful completion or drop-outs for the DLI course? Does the improved model with additional variables provide for more successful prediction of cases in these two categories?

- Does the improved model provide increased prediction of DLPT scores over the AGT/DLAB baseline?

- Does the improved model increase prediction of group membership for those scoring equal to/above or below level 2 on the DLPT at DLI?

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- Does the improved model increase prediction of DLPT scores at AIT over the AGT/DLAB baseline?

- Does the improved model increase prediction of group membership for those scoring equal to/above or below level 2 on the DLPT at AIT?

CHAPTER THREE

Methods and Procedures

This research effort primarily focused on a correlational investigation of the Language Skill Change Project (LSCP) data in a sequence of steps to look for predictor variables that could provide improved selection. Two general methods were employed in the quantitative analysis. The first was a series of discriminant analyses to determine predictability of the independent variables for membership of the subjects in Russian basic course completion (pass) or attrition (fail) groups and, later, for membership in groups having Defense Language Proficiency Test (DLPT or criterion) scores equal/above level 2 or below. The second method entailed a series of multiple regressions to determine the independent variables that could best predict scores on the DLPT. This effort was supplemented by a qualitative investigation consisting of primarily 36 field interviews with Army Russian linguists who were not (with one exception) a part of the LSCP sample. The interviews were one on one and concentrated on a series of five questions designed to determine the subjects' perceptions of factors that might be indicators of potential success with Russian language listening skills.

Population and Sample

Soldiers selected for this study were those assigned to the basic Russian language courses at the Defense Language Institute (DLI) with classes beginning in February 1986 and completing by July 1987. This group was part of a larger longitudinal study of four language groups during this period (other languages were Korean, German & Spanish). During this timeframe, all of these students were measured on a wide range of cognitive and affective factors and subsequently tested on language proficiency at the conclusion of DLI, Advanced Individual Training (AIT) and at follow on duty assignments. Once a soldier completed his/her training at DLI and AIT, he/she was normally assigned to a unit to provide the interception (generally listening) or interpretation (analysis) capability for the Russian language. The target population for this study is the total of approximately 2000 Russian linguists required for these and related duties in the Army.

Subjects in this sample were young enlisted soldiers with the majority (1823 of 1903 for the four languages) in the junior ranks of Sergeant (E-5) and below. There were a total of 791 students in the initial Russian language course sample. Of this group, 682 continued in DLI beyond the first module and 460 completed the basic Russian language course at DLI during this period. Course attrition includes both academic and administrative drop-outs. Course

completion, however, does not necessarily mean academic success. The goal at DLI is for basic students to attain a level 2 on the Defense Language Proficiency Test (DLPT), in reading and listening, as a minimum, but the target has been difficult to reach. For example, of the group of 460 completing the Russian language basic course during this period, 276 or 60% scored below a level 2 in listening.

The Russian language sample studied is a compilation of data for a series of classes entering and completing DLI on approximately a monthly basis during this 18 month period. Generally, around 30 to 150 new students start the Russian basic course each month. These entrants are put into class groups of approximately ten students each with normally one or two native speaking Russian instructors. Classes are conducted in Russian for six hours daily with two to three hours of homework assigned each night. The Russian basic course length is 47 weeks or roughly equivalent to the same number of hours a college student would spend in a Russian major course in a four year period at a university.

In essence, the Army generally selects a high quality group of soldiers for Russian language training and provides an intensive course of study. The size of the LSCP sample (in relation to the total population of Russian linguists in the Army) and the sequence of classes over approximately a year and a half should provide a relatively significant

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representation of the population.

Research Design

The basic design for this research effort was primarily quantitative supplemented by a qualitative effort consisting of interviews with Russian language linguists in the field and others responsible for the Russian language program administration or instruction. Predictor data were collected on the subjects at the start of the DLI basic course and 12 weeks later into the course. Based on the literature search and an initial data overview (correlations & frequencies/statistics), 23 independent variables were selected for a basically correlational investigation to determine factors that show potential for most accurately predicting success in acquiring Russian language listening skills. Measurements were made on the basis of the contribution of each of the cognitive, motivation/learning strategy, personality and biographical factors (and in combinations) as predictors of achievement on the listening skills portion of the DLPT (given at the end of the DLI basic Russian course and, again, at the end of AIT). Groups were formed and measured on the basis of course completion (Pass) or attrition (Fail) at the DLI basic course and those reaching the level 2 (or not) listening criteria on the DLPT at the conclusion of DLI and at the end of AIT.

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Predictor data were collected during their basic language training course at DLI. Data points include the performance of these students at the conclusion of their initial language training at DLI and at the end of AIT. Discriminant analyses were conducted to determine independent variables predicting group membership for completion of the DLI course of study and those reaching a level 2 on the DLPT. A series of multiple regression analyses were used to determine the potential predictors of the scores on the DLPT at DLI and at AIT.

During this research period, a qualitative evaluation was conducted that included unstructured interviews with DLI students and department heads and others responsible for administering the Russian linguist program in the Army. The major interview effort, however, was focused on Army Russian linguists in field assignments. With one exception, these soldiers interviewed were not part of the LSCP sample and had attended DLI either prior to or after the LSCP data base was collected. This also encompassed a literature research of associated publications on the Russian linguist program. In essence, the use of a qualitative or inductive approach was undertaken to supplement the quantitative analysis of the LSCP data.

Measurement

The initial battery of tests and information forms
given to these soldiers before and during language training
were designed to provide as much information as possible on
potential predictors for success in language acquisition and
retention. Figure 4 provides a timeline on the collection
of these data, and Figures 5 and 6 provide a list of
predictor variables by category. In addition to the
standard battery of tests given to all new enlistees, at
DLI, information was collected on cognitive (e.g., aptitude,
intelligence) and affective (e.g., attitude, motivation)
traits through a series of proven and developmental
instruments. For example, the Flanagan Industrial Tests
(FIT) for Memory (FM) and Expression (FE) were used to
provide data on general abilities for memory and English
grammar. These tests have been used for many years as
acceptable predictors for job placement purposes. The
Strategic Inventory for Language Learning (SILL) was
developed by Rebecca Oxford for the LSCP study based upon
prior research linking learning strategies to second
language performance (Bush, 1987). Additional measures were
adopted by the study team based on prior research supporting
potential linkage with other factors to language acquisition
success. Appendix C provides a copy of the instructions

Enlistment Basic Combat Training (BCT):

    Biographical Information

    Armed Services Vocational Aptitude Battery (AGT)

    Defense Language Aptitude Battery (DLAB)

Collected at the Start of Defense Language Institute (DLI):

    Language Background Questionnaire (e.g., NLANG)

    Attitude/Motivation--Start of Training (MOTIV_A)

    California Personality Inventory (CPIES)

    MAT-50 (Ambiguity Tolerance)

    Group Imbedded Figures Test (GEF)

    Flanagan Industrial Tests--Memory/Expression (FM/FE)

    Eysenck Personality Inventory (EPIES)

    Personal Outlook Inventory (POI)

    Watson-Glaser Critical Thinking Appraisal (WG)

Week 12 of Basic Language Training at DLI:

    Strategic Inventory for Language Learning (SILL)

    Attitude/Motivation--During Training (MOTIV_B)

Collected at the End of Basic Language Training at DLI:

    Defense Language Proficiency Test III (DLPT)

End of Course at Advanced Individual Training (AIT):

    Defense Language Proficiency Test III (DLPT)

Figure 4. Data Collection Schedule

Predictor Variable/Code   Instrument

Cognitive Variables:

Cognitive Ability/AGT.......Armed Services Vocational

                                   Aptitude Battery (ASVAB)

Language Aptitude/DLAB.......Defense Language Aptitude

                                   Battery (DLAB)

Syntax Skills/FE.............Flanagan Expression Test

Verbal Memory/FM.............Flanagan Memory Test

Critical Thinking/WG.........Watson-Glaser Critical

                                   Thinking Appraisal

Field Independence/GEF.......Group Embedded Figures Test

Motivation/Learning Strategy Variables:

Training Attitudes &

   Motivation/MOTIV_A/B.......Gardner Attitudes/Motivation

                                   Scales

Language Learning

      Strategy/SILL_1-6.......Strategic Inventory for

                                   Language Learning (SILL)

Figure 5.   Predictor Variables and Instruments
            Cognitive and Motivation/Learning Strategy
            Variables

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Predictor Variable/Code   Instrument

Personality Variables:

Empathy/CPIS1.................California Personality

Inventory

Extroversion/EPIES...........Eyesenck Personality Inventory

Tolerance of Ambiguity/MATS1..MAT-50

Self Confidence/POIS1.........Personal Outlook Inventory

Biographical Variables:

Position Specialty/MCODE......Personnel Records

Level of Education/ED.........Personnel Records

Gender/SEX....................Personnel Records

Handedness/RIGHTHAN...........Background Questionnaire

Prior Language.

    Training/NLANG...........Background Questionnaire.

Figure 6.   Predictor Variable Instruments

            Personality and Biographical Variables

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given to the students prior to test administration. The
following is a description of each of these measurement
instruments by variable category examined and, finally, the
DLPT criterion measure.

Cognitive Variables

Cognitive Ability--Armed Services Vocational
Aptitude Battery (ASVAB/AGT): The ASVAB is an aptitude
battery of tests designed specifically for selection and
classification of all new enlistees in the armed services.
There are a total of 12 subtests designed to measure general
intelligence and a number of potential work areas. A
composite score labeled Army General Technical (AGT--also
termed Skilled Technical or ST) is a compilation of scores
achieved on the General Science (GS), Mathematics Knowledge
(MK), Mechanical Comprehension (MC), Word Knowledge (WK) and
Paragraph Comprehension (PC) subtests. A minimum score of
100 on this AGT composite is a requirement for acceptance in
DLI. A 1988 technical paper published for the Air Force
Human Resources Laboratory cites reliability coefficients
for internal consistency ranging from .80 to .93, .87 to .93
for composite parallel forms, and .86 to .93 for alternate
composite forms. Worse case findings were in the Paragraph
Comprehension (PC) subtest at .67 to .70 for parallel and
alternate forms (Palmer, Hartke, Ree, Valentine & Welsh,
MAJ, USAF, 1988). In Buros' Eighth Mental Measurements

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Yearbook, David Weiss (University of Minnesota) faults the
ASVAB for a lack of validity data and problems with the four
alternative multiple choice format. He indicates, for
example, that on the Mechanical Comprehension (MC) subtest
approximately one third of the females may be providing only
random responses.

Language Aptitude--Defense Language Aptitude Battery
(DLAB): In a factor analysis as a part of the Harvard
Language Aptitude Project, Carroll (1958) cited seven
components of second language aptitude which he described
as: Verbal Knowledge, Linguistic Interest, Associative
Memory, Sound-Symbol Association, Inductive Language
Ability, Grammatical Sensitivity and Speed of Association.
These factors provided the basis for the development of the
DLAB that uses an artificial non-English language to test
for potential abilities in these areas. This (108 item/80
minute) instrument has become the baseline scale for
language aptitude in the Army and a minimum score of 95, for
example, is required for entry in the Russian language
course at DLI. In an article on development of the DLAB,
Petersen and Al-Haik (1976) cite predictive validity data of
.50 (n = 111) and .68 (n = 73) in two separate studies for
final grade averages in the Russian basic language course at
DLI. In addition, they provided a DLAB internal reliability
of .89 (KR-21).

Verbal Ability--Flanagan Industrial Test-Expression
(FIT/FE): This test (4 pages, 30 items--5 minutes to
complete) provides a measure of an individual's knowledge of
syntax skills or English language grammar usage and sentence
structure (Bush, 1987). In a review published in Buros
Eighth Mental Measurements Yearbook, David Herman (The
Psychological Corporation, New York) cites three attractive
features of the FIT battery (18 subtests): "...the tests
are short, easy to administer, and apparently
comprehensive." Interbattery coefficients of reliability
are quoted in this review of .28 to .79 with a median of
.55. Herman also provides an overview of the validity data
and indicates some problems with the way it is measured. In
a second review in the same Buros, Arthur MacKinney cites
the large amount of empirical validity data as one of the
strengths of this battery and states "...this reviewer
judges that the personnel decisions resulting from the use
of the tests should be defensible on both legal and ethical
grounds."

Memory--Flanagan Industrial Test-Memory (FIT/FM): As
the second FIT test used in the LSCP, the Flanagan Memory (4
pages, 40 items--10 minutes to complete) was selected to
measure an individual's ability to learn and remember a term
linked to an unfamiliar one (Bush, 1987). This test has
been found to have a cuing technique for recognition of word

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meaning that is associated with the ability to retain the meanings of words in a second language as an improvement over rote learning (Atkinson, 1975). The cueing technique was also cited as an improvement over attempting to determine the meaning of a word in the context of known words in a sentence for second language learning (Levin, McCormick, Miller, Berry, & Pressley, 1982).

Critical Thinking--Watson-Glaser (WG), Form A: This test (8 pages, 80 items--40 minutes to complete) was selected to determine some measure of an Individual's analytical abilities. Bush (1987) cites the authors' description of these measures as "...attitudes of inquiry involving an ability to identify problems and a need for evidence to support what may be true; the knowledge of valid inferences, abstractions, and generalizations which requires a logical evaluation of various evidence; and the association with the employment and application of the aforementioned attitudes and knowledge." (Bush, 1987) Allen Berger (1985), in a review of this test in Buros Ninth Mental Measurements Yearbook, quotes split half reliability coefficients ranging from.69 to .85, test re-test reliability at .73 and alternate forms at .75. He cautions that validity may be suspect since this test appraises critical thinking through reading rather than listening and indicates the scope and content may be too narrow. Berger

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states that the "...authors do not address the question of whether students may score differently if, for example, the content related more to areas such as the humanities." He sums up his critique on a positive appraisal: "Nonetheless, even with these cautions and limitations this reviewer knows of no similar test that is on a par with the Watson-Glaser Critical Thinking Appraisal" (Berger, 1985).

Field Independence--Group Embedded Figures Test (GEFT): The GEFT (18 pages, 25 items--12 minutes to complete) is designed to measure a subject's capability to locate a previously seen geometric figure embedded in a larger design as a means to determine a degree of field independence or field dependence. Field independence has been associated with an individual's ability to dis-embed elements in problem solving tasks such as language translation (Bush, 1987; Witkin, Dyk, Faterson, Goodenough & Karp, 1962; Witkin, Lewis, Hertzman, Machover, Meissner & Wapner, 1954). In Buros Eighth Mental Measurements Yearbook, Leonard Goodstein (University of Arizona) quotes an internal consistency of .82 and concludes that the GEFT is "...a well-conceptualized and well-researched instrument."

Motivation/Learning Strategy Variables

Motivation--Gardner-Lambert Attitude/Motivation Scales (MOT_A/MOT_B): Based on the research supporting the association of attitudes and motivation as indicators of

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second language learning success, ARI and DLI adapted 13 scales of the Gardner-Lambert Attitude/Motivation Scales for use in this study. Scale measurements include an integrative motivation orientation that identifies an individual's interest in the social and cultural aspects of the target language and an instrumental motivation orientation that examines an individual's personal interests (e.g., education credit, job potential) (Bush, 1987). Form A (34 items) was given at the start of training at DLI to determine attitudes and motivation of the new students towards learning the target language. Form B (110 items) was administered after 12 weeks of instruction at DLI to measure the same attitudes and motivation scales and, in addition, the attitudes/motivation towards the training received (course materials & instructors) to that point.

Language Learning Strategy--Strategic Inventory for Language Learning (SILL 1-6): The SILL was developed by Rebecca Oxford (University of Alabama) for the LSCP study to establish a list of learning strategies that might improve a student's ability to acquire a second language (Bush, 1987). Prior research has indicated a potential for learning strategies to distinguish successful vs unsuccessful learners (Rubin, 1975; Rubin & Thompson, 1982; Reiss, 1983). The six SILL factors are designed to identify: 1--language use in functional practice; 2--good study habits; 3--gives

meaning to language; 4--use of mental images; 5--study intensity; 6--study planning. Oxford (1986) cites an internal consistency reliability of .95 based on a 483 person field test of this instrument and content validity of .98 based on the relation of SILL items with items in a taxonomy of second language learning strategies.

Personality Variables

Empathy--California Psychological Inventory (CPI): The CPI (18 scales) was used in the LSCP to measure empathy or the tendency of a person to have a 'feeling with' another individual or group. The theory linking this factor to second language acquisition is based on the belief empathetic individuals might better understand the target language speakers beliefs and values that would convey to improved second language acquisition. Empathy is only one of many factors measured by the CPI and the only factor examined from this instrument for the LSCP data base (Bush, 1987). Donald Baucom reviewed the CPI in <u>Buros Ninth Mental Measurements Yearbook</u> and stated that "...accumulated evidence indicates that the scales generally measure what their titles suggest."

Extraversion--Eyesenck Personality Inventory (EPI)-Form A: As indicated in Chapter 2, the constructs of extraversion or introversion have been identified as potential predictors of second language acquisition ability

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in prior studies. The EPI (57 items) was selected by the LSCP study team to measure this trait based on research indicating connection between language learning success and extraversion (Bush, 1987; Naiman, Frohlich & Todesco, 1975). Reviewing the EPI in Buros Eighth Mental Measurements Yearbook, Auke Tellegen (University of Minnesota) cites test re-test correlations ranging between .81 to .85 and parallel forms reliability of .75 to .80. He sums up a critique of this instrument by stating "...although the EPI will very often not provide needed information available from other self-report inventories (e.g., the CPI, MMPI, and PRF) it could play a supplementary role in clinical and counseling sessions, and will continue to be a useful research instrument."

Tolerance of Ambiguity--MAT-50: Based on research indicating a possible linkage of ambiguity tolerance with the facility to acquire a second language, the MAT-50 (developed by ARI as an experimental instrument) was included in the LSCP list of instruments to measure this construct. In a review of the MAT-50, Robert Norton (1975) cites high internal reliability of .88 and test re-test reliability of .86 over a 10 to 12 week period with 1496 undergraduates at the University of Wisconsin (Madison). In addition, he states that a subjective evaluation "... by 20 graduate students indicated adequate content

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validity....Finally, four independent empirical studies showed good construct validity." Self Confidence--Personal Outlook Inventory (POI): Based upon his research indicating retention differences between high and low self confidence groups, Hiller (1974) developed the POI to distinguish these characteristics. According to his research, those students lacking in self confidence are more prone to quit on difficult learning tasks. Students with high self confidence, however, tend to make the additional effort to succeed in challenging assignments. The POI was selected for the LSCP to examine this variable for potential predictability of second language learning success (Bush, 1987).

Biographical Variables

The data for position specialty, gender, level of education, handedness and prior language experience were taken from personnel records and the Language Background Questionnaire (Appendix C). As indicated in Chapter Two, these variables have been cited, with the exception of position specialty, in past studies as having some potential relationship with second language learning abilities. Position specialty was added as a measure based upon the nature of the work. If the soldier knows, for example, that the analyst position (MOS 98C) is not likely to require the second language knowledge, then this may affect his/her

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motivation to acquire the language or drop the course.

These predictors were examined individually and in combination to determine possible relationships with individual performance on the Defense Language Proficiency Test (DLPT). These instruments were selected based on their potential to identify individual cognitive and affective factors that could be used to predict language skill performance. The scores on the listening part of the Russian language DLPT at the end of the DLI basic course and during the follow-on advanced individual training (AIT) were the criterion variables. In addition, interviews with program participants, the review of program information and other related literature provided additional qualitative and quantitative data for analysis.

Criterion Instrument

The primary criterion instrument for language skill achievement and retention is the Defense Language Proficiency Test (DLPT). This test is administered in three parts for listening, reading and speaking skills. The Army does not test for writing skills since there are few requirements for this ability in the field. The reading and listening tests are measured by a series of multiple choice tests under controlled conditions during periods of 150 and 90 minutes, respectively. The listening test is given with tape recorded messages and the soldier marks a multiple

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choice answer form. The listening measurement skill was
selected for this study since this is the major requirement
for the intelligence specialists in their field assignments.
A table provided by DLI lists reliability scores for the
listening and reading DLPT tests ranging from .78 to .94
(Appendix D). Speaking is measured by individual recorded
responses to questions and role playing situations during a
45 minute period. Speaking ability is then scored by a
group of instructors at DLI. Language ability for each of
these areas is categorized from raw scores into scales
ranging from 0 to 3 with + scores (e.g., 0+, 1+) providing
intermediate ratings. There are higher ratings of 4 and 5
for the more skilled linguists. However, the DLPT only
covers through level 3 and soldiers must work with DLI to be
measured for higher ratings. Figure 7 provides a brief
description of each of the skill level categories (Appendix
D provides a more detailed description of the universal
language skill ratings accepted by federal government
agencies).

Skill levels 3+ through 5+ are measured in separate
tests administered by the Defense Language Institute.
Students who are successful through level 3 are allowed to
take these extended tests to reach levels 3+ and higher.
The goal for achievement at the end of the basic language

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Level   Description

   0............The odd word, but no functional proficiency. Understanding limited to occasional isolated words.

   1............Survival proficiency or comprehension adequate to understand utterances about basic survival needs and minimum courtesy and travel requirements.

   2............Working proficiency or comprehension adequate to understand conversation on routine social demands and limited job requirements.

   3............General professional proficiency or ability to understand the essentials of all speech in a standard dialect including technical discussions in a special field.

   4............Advanced professional proficiency or ability to comprehend fluently and accurately all language styles and forms pertinent to professional needs.

   5............Native proficiency or comprehension functionally equivalent to the well educated native speaker.

Figure 7. Language Skill Level Categories

course is a level 2 in the reading and listening skill areas and a minimum of level 1 in speaking. These levels are also used as the minimum standards acceptable for basic skill proficiency in field assignments.

Qualitative Measures

This effort was designed to determine the factors affecting acquisition/listening skills as perceived by those associated with the Russian language program. This examination explored the views of the students, instructors and those charged with administering the training on the factors selected above and additional variables they believe might have impact on the success or failure of Russian language applicants. In addition, there was little documentation on the set up of the data collection effort for the LSCP. Some of this effort was directed at filling in the information gaps. During these interviews, an effort was made to determine perceptions on the factors that might contribute to program improvement. The following is a list of the groups interviewed and the primary questions asked:

o Defense Language Institute (DLI), Monterey, CA-- students, instructors and administrators:

  - What, in your mind, are the primary factors affecting the acquisition of Russian language listening and comprehension skills?

  - What factors contribute to the retention

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of those skills?

        - Are there individual differences or characteristics in those who seem to be most successful in acquiring the Russian language listening and comprehension skills? For example, do the most successful learners appear to be relatively quiet/withdrawn or more outgoing/sociable?

        - Are there individual differences or characteristics in those who seem to have the most trouble in acquiring Russian listening and comprehension skills?

        - Do individual differences or characteristics contribute to the ability to retain the Russian language listening and comprehension skills?

        o Advanced Individual Training (AIT), Goodfellow Air Force Base, TX--instructors and administrators:

        - What are some of the attributes of the more successful Russian linguists? Are there attributes that identify the least successful Russian linguists?

        - What are some of the factors affecting motivation to retain Russian language skills during AIT?

        o Field Unit, Fort Meade, MD and the On-Site Inspection Agency, Dulles Airport, Washington, D.C.--Russian linguists and unit leaders:

        - What, in your mind, are the primary factors affecting an ability to acquire Russian language listening skills?

- What factors contribute to the retention of the Russian language listening skills?

- Are there individual differences or characteristics that appear to be traits of those most successful in acquiring Russian language listening skills?

- Are there individual differences or characteristics in those who seem to have the most trouble acquiring Russian language listening skills?

- What are the factors affecting motivation to acquire and retain the Russian language listening skills?

The inductive or qualitative method was used as a continuing analysis during the period of this research (Miles & Huberman, 1984). This approach used primarily face to face interviews with individual linguists supplemented by phone interviews as needed. The factors identified above were compared to look for patterns, clustering, intervening variables and relationships to establish a chain of evidence on the potential contribution or lack of significance of individual differences as perceived by those associated with the Russian linguist program. The culmination of this approach was a triangulation combining the findings of the quantitative analysis and the literature review to determine potential significance (+ or -) or other relationships (e.g., intervening variables).

Analysis

As indicated above, the analysis primarily used quantitative methods (supplemented by a qualitative effort) to determine the potential predictors for success in developing and retaining listening skills for the Russian language. A multiple regression analysis was conducted to provide an indication of the amount of variance accounted for by the predictor variables on the DLPT scores and help to identify those variables with the most potential for predicting test performance. The discriminant analyses were run to identify the major predictors or predictor combinations for group membership in the course completion (Pass) or attrition (Fail) category at DLI and achievement of level 2 or below on the DLPT at DLI and AIT. From these analyses, potential equations were developed for comparison to determine those individuals who might have a better chance of achieving an acceptable level of competence in listening and comprehending the Russian language. The parallel qualitative analysis supplement provided some indicators to support or refute the quantitative findings and revealed some factors that might have had bearing on this question outside the data provided. These two methods combined with the literature review allowed for triangulation to give some indications of the potential for performance prediction and areas for further examination.

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In an initial data exploration, frequencies and statistics (Appendix E) were run on the predictor and criterion variables using the SPSS PC+ software to determine the overall patterns and potential use of the data provided. This allowed, for example, an initial elimination of the Language Study and Use Questionnaire variables based upon the singular distribution of scores in these categories. A Pearson product-moment correlation (Appendix F) was conducted to assist in the selection of potential contributors and examine initial variable combinations that might assist in understanding the results of the subsequent multiple regression and discriminant analyses. For the multiple regression analyses, the data was split by selection of the first half of the item scores to run the regressions. The second half of the data was saved for later model verification. The discriminant analyses were run using the entire data set to maintain larger group sizes for the separate categories. These results were compared with the findings from the multiple regression analyses. Following this initial review and data set-up, the primary quantitative analysis was conducted in six steps:

Step 1: Current Army Cognitive Ability Criteria & Language Aptitude (AGT/DLAB) Selection Criteria--Determine if the current Cognitive Ability and Language Aptitude (AGT/DLAB) selection criteria were maintained in the initial

selection of the Language Skill Change Project (LSCP) DLI candidates. This entailed a review of frequencies for Cognitive Ability (AGT) and Language Aptitude (DLAB) scores to determine whether or not there were candidates selected below the cut-off scores. Excursions were made to determine the characteristics of these groups using additional frequencies and statistics runs.

Step 2: Completion or Attrition (Pass/Fail) at DLI-- Identify characteristics (if any) that would predict course completion at DLI (Pass group) or those who would most likely be lost to attrition (Fail group--see Figure 8 for discriminant analysis groups at DLI & AIT). To establish a baseline, a discriminant analysis was run using only the current selection (AGT & DLAB) variables. This was followed by a discriminant analysis using all 23 independent variables to determine the predictor variables that might improve the selection rate over the baseline.

Step 3: Predicting Defense Language Proficiency Test (DLPT) or Criterion Scores at DLI--Determine the potential for predicting performance on the DLPT at DLI using the additional independent variables. The data was split and the first half was used for subsequent regressions. A baseline multiple regression was run using only the AGT and DLAB or current selection variables. Next, all 23 variables (including AGT & DLAB) were entered in a multiple

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At DLI:

Group 0----Course Attrition at DLI (Fail)

Group 1----DLI Course Completion (Pass)

At DLI & AIT:

Group 0----DLPT Score Below Level 2

Group 1----DLPT Score Equal/Above Level 2

Figure 8. Predicted Group Membership

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regression to determine the strongest potential predictors for success on the criterion (DLPT) at DLI. The SPSS PC+ multiple regression program was used with pairwise deletion of missing data and forward stepwise entry of data. This procedure was repeated with backward stepwise entry (pairwise deletion of missing data) for comparison and to determine the most effective combination of predictor variables. Using the Beta weights from the variables remaining in the multiple regression equation in the analysis above, an equation was developed to verify the results with the second half of the data. The results of these equations were compared with the Multiple Rs from the multiple regression analyses above to determine potential predictability. This was followed with a SPSS PC+ Crosstabs run comparing the results of the new equation variable with the DLPT results from DLI.

Step 4: Predicted Group Membership for Defense Language Proficiency Test (DLPT) Scores Equal to/Above Level 2 or Below at DLI--Determine predicted group membership at DLI for those scoring equal to/above level 2 or below level 2 on the DLPT. Again, a baseline was established using only the AGT and DLAB scores in a separate discriminant analysis. This followed by a discriminant analysis using all of the 23 predictor variables as described above in Step 2. A comparison was made with the summary table results from the

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baseline.

Step 5: Predicting Criterion (DLPT) Scores at Advanced Individual Training (AIT)--The Step 3 multiple regression sequence was repeated to predict DLPT scores at AIT. Again, a verification was performed using the second half of the data.

Step 6: Predicted Group Membership for DLPT Scores Equal to/Above or Below Level 2 at Advanced Individual Training (AIT)--The discriminant analysis sequence in Step 4 was repeated to determine group membership predictors for DLPT equal to/above or below level 2 at AIT.

The qualitative analysis supplement was conducted primarily by a series of 36 interviews with Army Russian linguists in field assignments. These interviews were performed using the interview form at Appendix G. The first page of the interview form is a Likert scale questionnaire that was handed to the linguist to complete prior to the interview session. The data from these forms were tabulated to provide an indication of strength of feeling on the possible influence of the factors provided on the ability to acquire and retain Russian language listening skills. The face to face question and answer session followed the list of questions attached to the forms. Hand written notes were taken during the interview to capture responses to each of the primary areas of focus. The data from these sessions

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were tabulated in a matrix form for each question and compared to determine the major thrusts. These former student interviews provided the basis for the qualitative comparison with the regression and discriminant analyses of the LSCP data base described above. In addition, eight unstructured interviews conducted with Russian language department heads and instructors at DLI, instructors at AIT and people responsible for program administration. Information from these sessions was compared with the former student responses. Results of this analysis are provided in Chapter Five.

In essence, the methods used for this research combined a number of quantitative and qualitative techniques in an attempt to determine the degree of contribution of each of the 23 factors to the variance in relation to the criterion distribution. A process of triangulation with the literature review was used to determine the contributions of the strongest predictors or predictor combinations.

CHAPTER FOUR

Results

Findings are presented in sequence with a general
overview of the initial data exploration and the baseline
set-up followed by results for each of the six steps cited
in Chapter Three. In essence, this summation of the data
analyses provides an indication that improvements over
current practice may be possible in the prediction of
potentially successful Russian linguist candidates (e.g.,
DLPT criterion scores of level 2 or above) by the addition
of certain test scores. The analyses of the LSCP data
revealed the potential for use of additional screening
instruments to provide a possible increase in the percentage
of successful students. Excursions using these data also
provided indications of improvements that could be made with
relatively minor changes to the methods the Army currently
uses for applicant selection. The following is a sequential
listing of the results in each of these areas.

Data Overview

The SPSS PC+ frequencies and statistics runs, in
general, revealed relatively normal distributions for the
instruments used to measure the independent variables shown
in Table 1 (see also Appendix E). Additional independent
variables included in this analysis were extracted from
personnel records and background questionnaires. Table 2

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Table 1

Predictor Variables--Range/Mean/S.D.

Independent Variable	Code	Mean	S.D.
Cognitive variables			
Cognitive Ability	AGT	121.0	7.6
Language Aptitude	DLAB	106.6	12.5
Verbal Ability	FE	17.6	4.3
Memory	FM	20.0	8.3
Field Independence	GEF	13.0	4.5
Critical Thinking	WG	58.5	9.5
Personality Variables			
Extroversion	EPIES	12.3	4.2
Empathy	CPIES	22.1	4.1
Self Confidence	POIS1	96.0	15.5
Ambiguity Tolerance	MATS1	216.0	36.0
Motivation/Learning Strategy Variables			
Motiv at Start	MOT_A	.08	.76
Motiv in Training	MOT_B	.00	.77
Actively Uses L2	SILL_1	2.98	.67
Good Study Habits	SILL_2	3.02	.64
Gives Meaning to L2	SILL_3	4.12	.53
Uses Mental Images	SILL_4	3.30	.85
Intensity of Study	SILL_5	4.00	.60
Planning	SILL_6	3.67	.71

Table 2

Biographical Predictor Variable Distributions

Variable	Code	Distribution	
Position Specialty	MCODE	98C (Analyst) = 138	(20.2%)
		98G (Listener) = 544	(79.8%)
Gender	SEX	Male = 515	(75.5%)
		Female = 167	(24.5%)
Handedness	RIGHTHAN	Right = 570	(83.6%)
		Left = 112	(16.4%)
Prior Language	NLANG	0 = 443	(65.0%)
		1 = 212	(31.1%)
		2 = 25	(3.7%)
		3 = 2	(.3%)
Education Level (yrs)	ED	11 = 1	(.1%)
		12 = 249	(36.5%)
		13 = 243	(35.6%)
		14 = 55	(8.1%)
		15 = 22	(3.2%)
		16 = 102	(14.9%)
		17 = 1	(.1%)
		18 = 7	(1.07%)
		20 = 2	(.3%)

provides the distribution of these other potential predictors. There was a total of 682 soldiers in the LSCP data base. Of these, 222 dropped out of the course after data were gathered on the independent variables and they did not take the Defense Language Proficiency Test (DLPT). In addition, the majority of this attrition group did not take the Strategic Inventory for Language Learning (SILL) or Motivation During Training (MOTIV_B) instruments since they departed DLI before the 12th week of instruction. There were 460 students who completed the basic Russian course and took the DLPT at the end of their instruction at DLI. From this group of 460, 348 took a second version of the DLPT towards the end of Advanced Individual Training (AIT) to gather data for an evaluation of language loss (approximately three to four months after having completed DLI). In the AIT group, 12 cases were dropped due to '0' scores indicating no attempt to answer questions leaving a total of 336 cases for the AIT analysis.

In a few of the standard instruments for measuring individual traits, the data for this population appear to be distributed on the high side of the scales. For example, the Ambiguity Tolerance (MATS1) mean of 218 on a scale of 0 to 325 seems to be indicative of a generally "ambiguity tolerant" population. The same could be said for the predictor variable Field Independence (GEF) with a mean for

this sample of 13 on a scale of 0 to 18. In essence, there is an indication of an even higher degree of field independence and tolerance for ambiguity that could have been brought about by the initial (restricted) selection of the students through the use of the Cognitive Ability (AGT) and Language Aptitude (DLAB) current entrance criteria.

Overall the soldiers in this sample appear to have relatively high credentials with average AGT scores of 121. Moreover, 189 (28%) of the 682 soldiers completed two or more years of college. In addition, 239 (35%) of the 682 in this sample had training in one or more languages prior to coming to DLI. In general, the high number of cases for this data base in comparison with prior language acquisition studies and the low levels of missing data (at DLI) for the predictor variables provided a relatively good data set for exploration. However, the overall high performance level of this sample presents a restricted range problem that must be considered in the interpretation of the results. This restriction to a pre-selected (via AGT & DLAB) or above average group for the instruments used will tend to skew the data and result in lower correlation coefficients that will affect regressions and other quantitative analyses (Brown, 1988).

The dependent variable set has a higher number of missing cases due to attrition at the DLI basic course (222

of 682 total) and the loss of control over the LSCP sample
population at AIT. At AIT, the losses were primarily due to
failure to collect data and not academic or administrative
attrition. The number of cases (336 after adjustment) with
DLPT at AIT criterion data, however, was considered large
enough to conduct an evaluation. Table 3 provides a summary
of the dependent variables obtained at DLI and AIT (see also
Appendix E). Initial examination of this table revealed a
drop in criterion (DLPT) scores during the three to four
month period from the end of DLI to the end of AIT. Mean
scores for listening on both occasions were below the
desired level of 2 on the DLPT and dropped from 1.7 at DLI
to 1.5 at AIT. This drop, however, should not be considered
significant based on the way the criterion (DLPT) was
administered at AIT (see Chapter Two) and the low
correlation of .42 between DLPT scores (DLPT raw scores--
DLICON_L with AITCON_L) on what was essentially a test re-
test situation. Under these circumstances, the test re-test
reliability should be in the vicinity of .8 or better. This
low correlation most likely reflects a combination of the
restricted range of the LSCP sample and the reduced
motivation to do well on the DLPT at AIT.

The missing data for both DLI and AIT scores is largely
attributed to those students who dropped out prior to taking
the Language test (DLPT) at OLI. Additional losses at AIT

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Table 3

DLPT Criterion Scores at DLI and AIT

	Range	Mean	S.D.
At DLI			
DLPT Raw Score (DLICON_L)	30-57	39.4	5.3
DLPT Level Score (DLPT2L)	1.0-3.0	1.7	.6
(valid cases 460; missing cases 222)			
At AIT			
DLPT Raw Score (AITCON_L)	0-53	35.6	8.6
DLPT Level Score (AL)	0.0-3.0	1.5	.6
(valid cases 336; missing cases 346)			

are those described earlier who did not take a DLPT towards the end of this course since they were out of the control of the data collectors. The 222 attrition cases were only used for the completion (Pass) vs attrition (Fail) discriminant analysis. At DLI, the 460 cases were considered enough to conduct an analysis on the equal to/above or below level 2 (DLPT) groups. For Advanced Individual Training (AIT), only the 346 cases that have scores on the Defense Language Proficiency Test (DLPT) at the end of this course were considered.

Finally, to maintain a data set for later model verification, the data were split in half and the first half was used for the multiple regression runs. (The entire LSCP data set was used for the discriminant analyses to maintain group size). Since data were entered based on a rank ordering of social security numbers, the two samples should be comparable. A cross check of frequency distributions showed this to be the case.

The following is a listing by step of the results in each of the research questions cited at the end of Chapter Two. This sequence begins with a look at entrance criteria and proceeds through the process of course completion (Pass) or attrition (Fail) at DLI, achievement of an equal to/above or below level 2 score on the DLPT at DLI and, finally, at AIT. Both discriminant analyses and multiple regression

techniques were used to provide a comprehensive examination of the 23 independent variables listed in Table 1.

Step 1: Current Selection Criteria (AGT & DLAB)

Question: Did the Army maintain the entrance criteria for DLI of a Cognitive Ability (AGT) score of 100 or higher and a score of 95 or higher on Language Aptitude (DLAB)?

Results: Table 4 is an extract from the SPSS PC+ Frequencies and Statistics run on AGT and DLAB scores. As indicated, the Army did not hold to the entrance criteria for AGT scores 100/higher or DLAB of 95/higher. There were 14 soldiers in this sample with AGT below 100 and 106 had DLAB scores below 95. If the AGT and DLAB have been somewhat successful instruments for predicting language acquisition capabilities, then holding to or raising these standards might improve entrant selection. As expected, for those 14 soldiers with AGT scores below 100, only two have records of completing DLI and both scored at a level 1 on the DLPT. However, for the students with DLAB scores below 95, 56 (53%) completed DLI with an average raw score of 37 (level score average = 1.6) on the DLPT. In comparison, the overall DLI completion rate for the LSCP population was 67% at an average DLPT raw score of 39 (level score average = 1.7). At AIT, the below 95 DLAB group had a level score average of 1.2 vs 1.5 for the total LSCP population. It is also interesting to note the mean AGT score for the below 95

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Table 4

Cases with AGT < 100 & DLAB < 95

# AGT < 100	Score		# DLAB < 95	Score
1	75		1	88
1	77		26	89
1	88		19	90
2	93		21	91
1	94		1	92
2	96		23	93
4	97		15	94
1	98		106 Total	
1	99			
14 Total				

DLAL group was 199 falling just below the LSCP population average of 121. Only four of the below 95 DLAB group AGT scores fall below 100.

Step 2: Course Completion of Attrition (Pass/Fail) at DLI

Questions: Do the baseline AGT/DLAB selection criterion predict successful completion or attrition for the DLI course? Does the improved model with additional variables provide for successful prediction of cases in these two categories?

Results: Discriminant analyses were run on the baseline and improved models to determine prediction for DLI completion (Pass) or attrition (Fail) categories. It should be noted that the attrition or Fail category includes the administrative drops who might have been able to complete the course had they continued. As indicated in Tables 5 and 6, both the baseline and the improved model failed to predict a substantial number of cases in the Fail category at DLI. This would seem to indicate there were no major differences in the Pass or Fail groups on the variables examined. For example, in Table 6, only 30 (22%) of 135 actual attrition group cases were correctly predicted in the Fail category and 105 (78%) were incorrectly placed in the Pass category. In essence, while this was an improvement over the baseline (7% correctly classified in the Fail

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Table 5

DLI Completion or Attrition (Pass/Fail) Group Membership
--Cognitive Ability/Language Aptitude (AGT/DLAB) Baseline

Variable	Wilks Lambda	Sig	Resid Var
Cog Abil (AGT)	.910	<.001	.885
Lang Apt (DLAB)	.903	<.001	.877

Canonical Discriminant Functions:

Chisquare = 53.317   DF = 2   Sig = <.001   Can Cor = .312

Classification Results:

	# Cases	Predicted Group Membership	
		0	1
Gp 0 ATTRIT (FAIL)	135	10 (7%)	125 (93%)
Gp 1 COMPL (PASS)	389	8 (2%)	381 (98%)
Ungrouped Cases	35	2 (6%)	33 (94%)

(559 cases were used--123 were missing
at least one variable)

Table 6

DLI Completion or Attrition (Pass/Fail) Group Membership
--Improved Model (Additional) Predictor Variables

Variable	Wilks Lambda	Sig	Resid Var
LANG APT (DLAB)	.909	<.001	.885
MEMORY (FM)	.888	<.001	.858
VERB ABIL (FE)	.873	<.001	.840
GENDER (SEX)	.868	<.001	.835
EDUCATION (ED)	.864	<.001	.830
COG ABIL (AGT)	.862	<.001	.828
SELF CON (POIS1)	.860	<.001	.825
FLD INDEP (GEF)	.858	<.001	.822

Canonical Discriminant Functions

Chisq = 79.378   DF = 8   Sig < .001   Can Cor = .377

Table 6 (Cont'd.)

<center>Classification Results:</center>

	# Cases	Predicted Group Membership	
		<u>0</u>	<u>1</u>
Gp 0 ATTRIT	135	30 (22%)	105 (78%)
(FAIL)			
Gp 1 COMPL	389	16 (4%)	373 (96%)
(PASS)			
Ungrouped Cases	35	4 (11%)	31 (89%)

(559 cases were used--123 were missing at

least one discriminating variable)

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category), the attrition cases cannot be substantially distinguished from those in the Pass category on the basis of the measures used. The baseline results are as expected since the primary selection criteria (AGT & DLAB) were used to identify potentially successful candidates.

Step 3: Predicting Criterion (DLPT) Scores at DLI
--Multiple Regression

Question: Does the improved model provide increased prediction of DLPT scores at DLI over the Cognitive Ability/Language Aptitude (AGT/DLAB) baseline?

Results: The independent variables listed in Tables 1 and 2 above were entered in multiple regression analyses with criterion (DLPT) scores from DLI as the dependent variables. As indicated earlier, in an attempt to determine the most promising predictor set, both forward/stepwise (missing/pairwise) and backward/stepwise (missing/pairwise) procedures were used. As shown in Tables 8 and 9, the percent of explained variance increased from the Cognitive Ability & Language Aptitude (AGT/DLAB) baseline of 12% to 21-23% using the additional variables in forward and backward multiple regressions. Multiple R increased in both forward and backward stepwise analyses to .483 and .509, respectively, providing an improvement over the current selection (AGT/DLAB) baseline in Table 7 (Multiple R = .359). This indicates that an increase could be achieved in

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Table 7

DLI Criterion (DLPT) Scores Prediction

--Cognitive Abilities/Language Aptitude

(AGT/DLAB) Baseline

Dependent Variable--DLPT Score at DLI

Forward Stepwise (missing pairwise):

Multiple R	.359
R Square	.129
Adjusted R Square	.121
Standard Error	5.204

Analysis of Variance:

	DF	Sum of Squares	Mean Square
Regression	2	854.776	427.388
Residual	213	5767.460	24.077

F = 15.784   Significant F < .001

Variables in the Equation:

Variable	B	Beta	t	Sig t
LANG APT (DLAB)	.103	.234	3.527	.001
COG ABIL (AGT)	.161	.218	3.297	.001
Constant	9.220		1.546	.124

predicting successful candidates using the additional variables.

The six variables in the final equation in Table 8 (forward entry) have a potential for improving prediction of the DLPT results using the Beta weights (Bs) indicated. The Intensity of Study (SILL_5) measure provides the largest single contribution at .230 (Beta). The next largest contributor is a negative effect of 'Good Study Habits' (SILL_2) at a -.210. One would think that both 'Good Study Habits' and 'Intensity of Study' should be positive contributors to achievement in language learning. A check of the data and the instrument revealed that higher scores should indicate better study habits. The appearance of a negative coefficient could indicate a problem of mulicollinearity in which 'Good Study Habits' is functioning as a suppressor variable. A possible explanation for this result will be addressed in Chapter Six in light of the cross examination with the qualitative data.

The Verbal Ability (FE) variable accounts for the next largest variance (Beta = .173). This test is designed to measure verbal ability or English grammar skills and could also be considered a measure of general intelligence. These variables are followed in significance by Cognitive Ability (AGT--Beta = .157) and Language Aptitude (DLAB--Beta = .140) indicating that both of these instruments continue to be

Table 8

DLI Criterion (DLPT) Scores Prediction

--Improved Model (Additional) Predictor Variables

Dependent Variable--DLPT Score at DLI

Forward Stepwise (missing pairwise):

Multiple R	.483
R Square	.233
Adjusted R Square	.211
Standard Error	4.929

Analysis of Variance:

	DF	Sum of Squares	Mean Square
Regression	6	1544.370	257.395
Residual	209	5077.866	24.296

F = 10.594   Significant F < .001

Variables in the Equation:

Variable	B	Beta	t	Sig t
VERB ABIL (FE)	.253	.173	2.661	.0084
LANG APT (DLAB)	.069	.157	2.417	.0165
COG ABIL (AGT)	.104	.140	2.156	.0322
MOT STRT (MOT_A)	.882	.118	1.901	.0586
STDY INT (SILL_5)	2.157	.230	3.357	.0009
STDY HAB (SILL_2)	-1.939	-.219	-3.112	.0021
Constant	12.765		2.016	.0451

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predictive for potential success on the criterion (DLPT).

Motivation at the Start of Training (MOT_A--Beta = .118)

also is significant in this equation. This variable

received considerable attention in the interviews and

literature review. In addition, motivation has tended to be

a significant independent contributor in prior studies.

The results from the second or backward/stepwise

analysis in Table 9 added three variables to the baseline

equation and with an increase in Multiple R .483 to .509.

This modified equation contains the same six variables in

the forward/stepwise analysis in the same relative order of

contribution. Of the additional variables, Critical

Thinking (WG or analytic reasoning abilities) provided the

largest Beta of the additional variables at .132. This was

followed by Self Confidence (POIS1--Beta = .118). The last

new variable included in the final equation was Prior

Language Experience (NLANG--Beta = .114). The contribution

of Prior Language Experience also is suggested by the

interviews and will be examined in the concluding chapter.

A prediction model equation was developed from the

results of the multiple regression analysis above for the

criterion (DLPT) measured at DLI. Tables 10 and 11 show the

equations and the cross validated multiple correlations

obtained by correlating the predicted scores with the actual

criterion level scores (DLPT2L).

Table 9

DLI Criterion (DLPT) Scores Prediction

--Improved Model (Additional) Predictor Variables

Dependent Variable--DLPT Score at DLI

Backward Stepwise (missing pairwise):

Multiple R	.509
R Square	.259
Adjusted R Square	.227
Standard Error	4.880

Analysis of Variance:

	DF	Sum of Squares	Mean Square
Regression	9	1717.029	190.781
Residual	206	4905.206	23.811

F = 8.012   Significant F < .001

Variables in the Equation:

Variable	B	Beta	t	Sig t
COG ABIL (AGT)	.098	.132	1.898	.0591
MOT STRT (MOT_A)	.792	.106	1.717	.0875
PRI LANG (NLANG)	1.059	.114	1.843	.0667
VERB ABIL (FE)	.187	.137	2.061	.0405
LANG APT (DLAB)	.060	.136	2.076	.0392
SELF CON (POIS1)	.042	.118	1.720	.0870

Table 9 (Cont'd.)

Variable	B	Beta	t	Sig t
CRIT THNK (WG)	.078	.132	1.753	.0810
STDY INT (SILL_5)	2.315	.247	3.521	.0005
STDY HAB (SILL_2)	-1.76	-.200	-2.835	.0050
Constant	5.193		.677	.4989

Table 10

Regression Verification (2nd Half of Data)

--DLI Predicted Vs Actual Criterion (DLPT) Scores

Forward/Stepwise:

   Correlation:

Predicted with Actual Criterion (DLPT) Scores = .310

   (N = 167; Sig < .001)

   Crosstabs:

		Predicted Level Scores			
	Count	1.0	1.6	2.0	2.6
	1.0	2	25	17	
Actual	1.6	2	20	21	1
Scores	2.0	1	10	24	1
	2.6		1	7	
	3.0			4	1

(total observations = 137; missing = 204)

Table 11

Regression Verification (2nd Half of Data)

--DLI Predicted Vs Actual Criterion (DLPT) Scores

Backward/Stepwise:

Correlation:

Predicted with Actual Criterion (DLPT) Scores = .327

(N = 167; Sig < .001)

Crosstabs:

		Predicted Level Scores			
	Count	1.0	1.6	2.0	2.6
	1.0	1	21	20	1
Actual	1.6	2	12	24	2
Scores	2.0	1	8	29	2
	2.6		1	7	

(total observations = 136; missing = 205)

<u>Step 4</u>:   Predicted Group Membership for DLPT Scores

Equal/Above or Below Level 2 at DLI

--Discriminant Analysis

Question: Does the improved model increase prediction
over the baseline of group membership for those scoring
equal to/above or below level 2 on the criterion (DLPT) at
DLI?

Results: As indicated in Tables 12 and 13, predicted
group membership for those scoring equal to/above level 2 on
the DLPT increased from 33% in the current selection
(AGT/DLAB) baseline (Table 12) to 52% using 11 of the
additional variables in addition to Language Aptitude
(DLAB). Cognitive Ability (AGT) was not included in the
final function. Correct predictions for the below level 2
on the DLPT group, however, dropped from 85% in the baseline
to 78% with the additional variables. In comparing these
predictors with the DLPT scores prediction results in Step
3, six of the nine independent variables in the
backward/stepwise multiple regression were also in the final
function for determination of level 2/above or below group
membership. These were: Critical Thinking, Verbal Ability,
Language Aptitude, Motivation at the Start of Training, Self
Confidence and Good Study Habits. Other predictors in the
discriminant results for DLPT level 2/above or below groups
included Handedness, Skill Specialty, Gender and learning

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Table 12

DLI Criterion Level (DLPT > Or 2 or Greater) Group

Membership--Cognitive Ability/Language Aptitude

(AGT/DLAB) Baseline

Variable	Wilks Lambda	Sig	Resid Var
LANG APT (DLAB)	.952	<.001	.950
COG ABIL (AGT)	.929	<.001	.926

Canonical Discriminant Functions

Chisquare = 28.684   DF = 2   Sig < .001   Can Cor = .267

Classification Results:

	# Cases	Predicted Group Membership	
		0	1
Gp 0-DLPT <1.99	239	203 (85%)	36 (15%)
Gp 1-DLPT ≥2.00	152	102 (67%)	50 (33%)

(460 cases were used--69 were missing at least

one discriminating variable)

Table 13

DLI Criterion Level (DLPT > Or_2 Or Greater)

Group Membership--Improved Model (Additional)

Predictor Variables

Variable	Wilks Lambda	Sig	Resid Var
CRIT THNK (WG)	.912	<.001	.909
VERB ABIL (FE)	.894	<.001	.891
LANG APT (DLAB)	.883	<.001	.879
MOTIV-ST (MOT_A)	.872	<.001	.868
RIGHTHAN (HNDNS)	.866	<.001	.861
MENT IMGES (SILL_4)	.859	<.001	.855
LANG USE (SILL_1)	.850	<.001	.845
SELF CON (POIS1)	.843	<.001	.838
STDY HAB (SILL_2)	.838	<.001	.832
MNG TO LANG (SILL_3)	.832	<.001	.827
SKILL SPEC (MCODE)	.828	<.001	.822
GENDER (SEX)	.822	<.001	.817

Canonical Discriminant Functions:

Chisq = 65.522   DF = 12   Sig < .001   Can Cor = .421

Table 13 (Cont'd.)

Classification Results:

	# Cases	Predicted Group Membership	
		0	1
Gp 0-DLPT < 1.99	240	187 (78%)	53 (22%)
Gp 1-DLPT ≥ 2.00	152	73 (48%)	79 (52%)

(392 cases used--68 were missing at least

one missing discriminating variable)

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strategy variables for Uses Mental Images, Active Use of Second Language and Gives Meaning to Language.

Step 5:   Predicting Criterion (DLPT) Scores at AIT
          --Multiple Regression

Question: Does the improved model increase prediction of the criterion (DLPT) scores at AIT over the Cognitive Ability/Language Aptitude (AGT/DLAB) baseline?

Results: As indicated in Tables 15 and 16, Multiple R increased significantly in both forward and backward stepwise runs (Multiple R = .445 & .516, respectively) with the improved model over the current Cognitive Ability & Language Aptitude (AGT/DLAB) baseline (Table 14--Multiple R = .244). Explained variance increased from the baseline model of 5% to 18-23% with the additional predictor variables. The results from the forward/stepwise analysis resulted in three predictor variables in the final equation. Critical Thinking (WG, Beta = .255) provides the largest contribution followed closely by Intensity of Study (SILL_5, Beta = .251). Verbal Ability (FE, Beta = .181) is the third variable contributing to the explanation of variance of scores on the DLPT taken at the end of Advanced Individual Training (AIT). This equation provided a significant Multiple R (.445) with only three predictor variables and did not contain either of the current selector variables, Cognitive Ability (AGT) or Language Aptitude (DLAB). These

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Table 14

AIT Criterion (DLPT) Scores Prediction

Cognitive Ability/Language Aptitude (AGT/DLAB) Baseline

Dependent Variable--DLPT Score at AIT

Forward Stepwise (missing pairwise):

Multiple R	.244
R Square	.059
Adjusted R Square	.054
Standard Error	.616

Analysis of Variance:

	DF	Sum of Squares	Mean Square
Regression	2	3.888	3.888
Residual	162	61.571	.380

F = 10.229   Significant F < .005

Variables in the Equation:

Variable	B	Beta	t	Sig t
LANG APT (DLAB)	.012	.244	3.198	.002
Constant	2.032		.492	.624

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Table 15

AIT Criterion (DLPT) Scores Prediction

Improved Model (Additional) Predictor Variables

Dependent Variable--DLPT Score at AIT

Forward Stepwise (missing pairwise):

Multiple R	.445
R Square	.198
Adjusted R Square	.181
Standard Error	5.465

Analysis of Variance:

	DF	Sum of Squares	Mean Square
Regression	3	1075.122	358.374
Residual	146	4360.794	29.868

F = 11.998   Significant F < .001

Variables in the Equation:

Variable	B	Beta	t	Sig t
CRIT THNK (WG)	.161	.255	3.247	.001
STDY INT (SILL_5)	2.685	.251	3.383	.001
VERB ABIL (FE)	.261	.186	2.368	.019
Constant	12.211	4.357	2.803	

Table 16

AIT Criterion (DLPT) Scores Prediction

Improved Model (Additional) Predictor Variables

Dependent Variable--DLPT Score at AIT

Backward Stepwise (missing pairwise):

Multiple R	.516
R Square	.267
Adjusted R Square	.230
Standard Error	5.299

Analysis of Variance:

	DF	Sum of Squares	Mean Square
Regression	7	1449.311	207.045
Residual	142	3986.605	28.075

F = 7.375   Significant F < .001

Variables in the Equation:

Variable	B	Beta	t	Sig t
VERB ABIL (FE)	.235	.168	2.190	.0302
AMB TOL (MATS1)	.023	.136	1.820	.0708
SELF CON (POIS1)	.060	.148	1.776	.0779
STDY INT (SILL_5)	3.220	.301	3.580	.0005
CRIT THNK (WG)	.178	.281	3.364	.0010
LANG USE (SILL_1)	2.200	.235	2.712	.0075
STDY HAB (SILL_2)	-1.872	-.191	-2.047	.0425
Constant	-2.041		-.257	.7975

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three variables were also in the backward/stepwise regression results at DLI.

The backward/stepwise run (Table 16) added four variables to the equation and resulted in a greater Multiple R of .516. This equation also indicated an improvement over the current predictor set (AGT/DLAB-- Multiple R = .244). Again, Cognitive Ability (AGT) and Language Aptitude (DLAB) were not in the final equation for this run. The largest contributor among the new variables was Active Use of Second Language (SILL_1--Beta = .235). This variable also was identified by the linguists interviewed as the most significant variable contributing to language retention. The next largest contributor among the new variables was Good Study Habits (SILL_2--Beta = -.191). Again, the negative coefficient suggests that this variable is operating as a suppressor variable. Self Confidence (POIS1, Beta = .148) and Tolerance of Ambiguity (MATS1, Beta = .136) were the remaining two new variables in this equation and were both identified as important by the linguists interviewed. It should be noted that Verbal Ability, Self Confidence, Study Intensity, Good Study Habits and Critical Thinking were also significant in the backward/stepwise regression results for DLPT scores prediction at DLI. Again, the final equations (forward and backward regressions) were run for verification with the second half

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of the data. This was followed by correlations of predicted with actual scores that yielded favorable comparisons with Multiple Rs of .324 vs .445 (forward Multiple R--Table 17) and .432 vs .516 (backward Multiple R--see Table 18).

<u>Step 6</u>: Predicted DLPT Level 2 Above/Below

Group Membership at AIT

--Discriminant Analysis

Question: Does the improved model increase prediction of group membership for those scoring equal to/above or below level 2 on the criterion (DLPT) at AIT?

Results: As indicated in Table 20, the predicted membership for the group scoring equal to/above level 2 on the criterion (DLPT) improved significantly over the current selection (AGT/DLAB) baseline (Table 19) at AIT with 52% correct predictions in the level 2/above group using the additional variables (vs 9% for the baseline). Correct predictions for the DLPT below level 2 group, however, dropped from 97% with the baseline to 91% using these predictors. There were six of the seven variables in the final equation for the backward/stepwise regression run for DLPT scores prediction at AIT that were also listed in Summary Table for this discriminant analysis. Verbal Ability, Active Use of Second Language, Good Study Habits, Ambiguity Tolerance, Self Confidence and Critical Thinking appear to be consistent predictors for both applications.

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Table 17

Regression Verification (2nd Half of Data)

--AIT Predicted Vs Actual Criterion (DLPT) Scores

Forward/Stepwise:

Correlation:

Predicted Criterion (DLPT) with Actual Scores = .324

(N = 142; Sig < .001)

Crosstabs:

Predicted Level Scores

	Count	.6	1.0	1.6	2.0
	.6	1		2	2
Actual	1.0	1	10	29	9
Scores	1.6		3	21	2
	2.0		1	10	9
	2.6			1	4
	3.0				1

(total observations = 159; missing = 53)

Table 18

Regression Verification (2nd Half of Data)

--AIT Predicted Vs Actual Criterion (DLPT) Scores

Backward/Stepwise:

Correlation:

Predicted Criterion (DLPT) Scores with Actual = .432

(N = 141; Sig < .001)

Crosstabs:

	Count	.6	1.0	1.6	2.0
.6		1	1	1	1
1.0		2	13	28	10
Actual 1.6			5	12	6
Scores 2.0			4	9	
2.6				5	1
3.0				1	

Predicted Level Scores

(total observations = 159; missing = 59)

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Table 19

AIT Criterion Level (DLPT > Or 2 Or Greater) Group
Membership--Cognitive Ability/Language Aptitude
(AGT/DLAB) Baseline

Variable	Wilks Lambda	Sig	Resid Var
LANG APT (DLAB)	.939	<.001	.923
COG ABIL (AGT)	.923	<.001	.902

Canonical Discriminant Functions

Chisquare = 23.359   DF = 2   Sig < .001   Can Cor = .278

Classification Result:

	# Cases	Predicted Group Membership	
		0	1
Gp 0-DLPT <1.99	218	212 (97%)	6 (3%)
Gp 1-DLPT ≥2.00	76	69 (91%)	7 (9%)
Ungrouped Cases	3	2 (67%)	1 (33%)

(297 cases were used--47 were missing at least
one discriminating variable)

Table 20

AIT Criterion Level (DLPT > Or 2 Or Greater)

Group Membership--Improved Model (Additional)

Predictor Variables

Variable	Wilks Lambda	Sig	Resid Var
VERB ABIL (FE)	.893	<.001	.861
LANG USE (SILL_1)	.845	<.001	.801
STDY HAB (SILL_2)	.794	<.001	.740
LANG APT (DLAB)	.757	<.001	.698
STDY PLNG (SILL_6)	.737	<.001	.675
EMPATHY (CPIS1)	.725	<.001	.662
AMB TOL (MATS1)	.718	<.001	.654
SKILL SPEC (MCODE)	.711	<.001	.647
MNG TO LNG (SILL_3)	.706	<.001	.640
SELF CON (POIS1)	.699	<.001	.633
MENT IMGS (SILL_4)	.693	<.001	.626
MOTIV-ST (MOT_A)	.687	<.001	.619
PRI LANG (NLANG)	.682	<.001	.614
CRIT THNK (WG)	.679	<.001	.611

Canonical Discriminant Functions:

Chisq = 96.807   DF = 14   Sig < .001   Can Cor = .567

Table 20 (Cont'd.)

Classification Results:

	# Cases	Predicted Group Membership	
		0	1
Gp 0-DLPT < 1.99	215	196 (91%)	19 (9%)
Gp 1-DLPT ≥ 2.00	73	35 (48%)	38 (52%)
Ungrouped Cases	4	3 (75%)	1 (25%)

(292 cases used--54 were missing at least

one discriminating variable)

Language Aptitude, a current predictor, is also a contributor to this equation. Other predictor variables that contribute to the improved group selection include Empathy, Skill Specialty, Motivation at the Start of Training, Prior Language and three learning strategies-- Study Planning, Gives Meaning to Language & Uses Mental Images.

Summary

In general, there appear to be some measures that result in an improved model that could be used to increase selection of successful Russian language candidates. The Army did not hold to the current criteria for candidate selection for over 100 of the 682 cases in this sample. Adhering to those criteria, however, may not have significantly improved the success rate based on the comparison of completions at DLI and criterion (DLPT) scores for those who scored below 95 on the DLAB with the total LSCP population. In the investigation of attrition vs completions at DLI, there were no discernable differences based on the independent variables examined. This may have been due to the lack of a capability to separate those who dropped out for administrative reasons from those who were dropped for academics.

In the regression analyses runs for criterion (DLPT) scores at DLI, the existing selection variables, Cognitive

Ability (AGT) and Language Aptitude (DLAB), were significant variables in the prediction equation. The addition of Motivation at the Start of Training, Prior Language Experience, Self Confidence, Verbal Ability, Critical Thinking, Study Intensity and Study Habits increased the predictive potential of the final equation (vs the AGT/DLAB baseline) by a substantial margin. While the discriminant analyses did not provide for substantial DLPT level 2 group (equal to/above or below) prediction to the degree desired, there was a large increase over the baseline indicating some potential for improvement in this area.

Analyses of the independent variables as predictors for success on the criterion (DLPT) at AIT indicated that the addition of measures for Verbal Ability, Study Intensity and Critical Thinking could improve accuracy of prediction. The backward (stepwise) analysis for AIT added Self Confidence, Study Habits, Language Use and Ambiguity Tolerance to the final equation and increased the predictive potential over the forward/stepwise run. For AIT, the discriminant analyses also suggested some potential for level 2 group membership prediction over the current selection criteria.

CHAPTER FIVE

Qualitative Analysis

The qualitative analysis primarily focused on interviews conducted with 36 Russian linguists working in field assignments at intelligence units at Fort Meade, Maryland, and at the On-Site Inspection Agency based at the Dulles International Airport in Washington, D.C. Additional interviews were conducted on site at DLI with Russian language department heads and instructors. Follow-up interviews were conducted by phone and phone interviews were also used to gather information from the Department of the Army and the Department of Defense in the Pentagon. Finally, phone interviews were also used to get information on the AIT course at Goodfellow Air Force Base in Texas.

The following is a compilation of the results of the interviews with the soldier-linguists in field assignments. The first figure provides a matrix of the responses to the one page Likert Scale questionnaire each individual filled out just prior to the start of the interview. Examination of Figure 9 reveals strong responses favoring Motivation, Language Aptitude and Memory as contributors to the ability to acquire and retain Russian language listening skills. These are followed by Tolerance of Ambiguity, Self Confidence, Analytic Reasoning and General Intelligence Level as contributors to this ability according to those interviewed (see Figure 10).

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Statement at the top of the form:

Please circle the degree to which you believe the following individual characteristics contribute to an ability to acquire and retain listening and comprehension skills for the Russian language:

	IMPORTANCE LOW—————————————————HIGH						
	1	2	3	4	5	6	7
GENERAL INTELLIGENCE			5	20	9	2	
LANGUAGE APTITUDE				5	10	13	8
MEMORY			1	2	7	19	7
FIELD INDEPENDENCE			9	9	15	1	2
ANALYTIC REASONING		1	2	8	12	11	2
MOTIVATION			1	3	5	10	17
EXTRAVERSION	1	5	8	14	4	4	1
EMPATHY		1	5	9	15	4	2
TOLERANCE OF AMBIGUITY		1	2	4	13	14	2
SELF CONFIDENCE			1	6	14	12	3
OTHER FACTORS? (LIST)	(listed in the next figure)						

Figure 9. Characteristics Contributing to Russian Language Acquisition/Retention

Subject:	Response:

#1   Previous foreign language study/experience (5)

English language (grammar) skills (6)

#2   Good study habits (7)

#3   Introversion is often found in NSA transcribers. They seem to be able to sit at a desk for longer periods of time without a conversation with others. On the other hand, they don't make the best linguists in terms of speaking the language.

#4   Self confidence

Knowledge of world affairs in general

#5   Imagination (5)

#6   Willingness to work hard

Knowledge of how to study a foreign language

#7   Age

#8   Hearing (6)

#9   Moderate to high aggressive ("bulldog")

#10   Ability to see a structure or find patterns

Reinforcement (teachers)

Discipline & maturity

#11   Masochism (5)

Figure 10: Handwritten Responses to OTHER FACTORS

There were a large number who felt that Field Independence might be important to the ability to acquire and retain Russian. However, this may have had more to do with the nature of the explanation given prior to filling out the form. Field Independence was the only variable that was defined. The definition given was "the ability to perceive and examine an object distinct from its background or environment." Extraversion and Empathy were the lowest contributors in the minds of the respondents. In contrast to the results for Field Independence, the low importance assigned to these characteristics may be due to the respondents' lack of a clear definition for them.

In the final item, OTHER FACTORS, 11 subjects provided a variety of responses listed below (some provided degrees of importance-in parenthesis):

After completion of the form, a series of questions were asked in one on one interviews to elicit each linguist's thinking on the factors contributing to an ability to acquire and retain Russian language listening skills. The following figures provide a summary of the responses showing up in five or more interviews.

Figure 11 lists the responses to the first interview question focused on the general perception on the factors contributing to an ability to acquire Russian listening skills. Prior language experience elicited the largest

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Question #1: What, in your mind, are the primary factors affecting an ability to acquire Russian language listening skills?

Responses	# Providing
Prior language experience	16
Motivation	13
General intelligence level	10
Language aptitude	10
Language use	9
Memory	9
Good English grammar background	7
Persistence and practice	6
Interest in the language area	5

Figure 11. Interview Responses to Question #1--Factors Affecting an Ability to Acquire Russian Language Listening Skills

number of responses on this first question. These subjects seemed to believe that foreign language learning and the skills one acquires in transferring English language structure/vocabulary to a second language can be used as a base to acquire Russian. Motivation is the next highest in number of responses and is reinforced by 10 or more responses to five of the six interview questions. Throughout these interviews, subjects would refer again to motivation as a primary factor that led to the personal investment of the time and effort required for the Russian language.

The next two factors, general intelligence and language aptitude, would also show up in subsequent comments and were generally believed to be basic attributes required by linguists pursuing a difficult language. Language use or exposure (9) combined with persistence and practice (6) provides some indication of the degree of importance attached to this factor. These soldiers seemed to feel that acquisition of Russian demanded continued use for them to be able to achieve an adequate level of proficiency. Good English grammar background is a necessity for 7 of the subjects based on their experiences at DLI and with subsequent language training. Several of the soldiers mentioned classmates who had to drop out of DLI due to their lack of basic English skills. Interest in the language area

was often mentioned in context with those who seemed to be the best Russian linguists.

For the second question, Factors Affecting Retention of Russian, the results (see Figure 12) were consistent with 27 respondents that language use or exposure was essential to retain the language. Again, motivation was the next factor in line and combined with regular practice/study indicates the degree of importance attached by these subjects. There were seven subjects who spoke of the need for periodic re-training or advanced courses to reinforce their language skills. The last factor, exposure to a variety of materials, seemed to indicate that these subjects felt the reinforcement of TV tapes, magazines and other Russian media contributed to interest and language retention.

For Question #3 (Figure 13), the subjects were asked to think of the best Russian linguists they knew and to provide traits descriptive of those individuals. Comments leading to the most prevalent response, interest in/enjoy learning the language, provided an indication that those who reached a level of proficiency allowing them to learn more about the Russian language and culture seemed to hunger for more. Subjects described these individuals as those who would spend free time reading books on Russian military history or Russian newspapers or magazines. Again, prior language training and motivation (integrative) were cited as

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Question #2: What factors contribute to the retention of
the Russian language listening skills?

Responses	# Providing
Language use/exposure	27
Motivation/desire to retain the language	14
Regular practice/study	8
Periodic or regular training	7
Experience with native speakers	5
Exposure to a variety of materials	5

Figure 12. Interview Responses to Question #2--Factors
            Affecting Retention of Russian Language
            Listening Skills

Question #3: Are there individual differences or
characteristics that appear to be traits of those most
successful in acquiring Russian language listening skills?

Responses	# Providing
Interest in/enjoy learning the language	16
Generally high intelligence	14
Prior language training	14
Motivated to learn/retain	13
Extroverted/enjoy speaking	11
Intense/studious	9
Natural language ability/aptitude	7
Self confident	5

Figure 13. Interview Responses to Question #3--
          Characteristics of those Most Successful at
          Acquiring Russian

indicative of the better linguists by 14 and 13 subjects
respectively. An interesting response by 11 subjects
indicated that these most successful linguists were
extroverted or enjoyed speaking Russian. The next response,
intense/studious, is unique to this question and may
indicate some linkage with the factors motivation and
interest in the language. A natural language ability or
aptitude for the language was the response of seven
subjects. An interesting observation is that this was not
listed as one of the top contributors for this question.
Self confidence was listed as a factor by five respondents
and with the opposite response to the following question may
be a factor for consideration.

Question 4 began by asking the subject to think of
those who seemed to have the most difficulty in learning to
listen to and comprehend Russian. As shown in Figure 14, a
lack of motivation followed by a low level of language
ability were the most prevalent responses. These factors
coupled with personal life concerns, poor study skills and
lack of interest might indicate an overall indication of a
lack of maturity. Low self confidences and a lack of
English language skills were also provided by five
respondents each. In essence, the factors that are
indicative of those having trouble acquiring Russian seem to
be the same indicators of poor performance in other

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Question #4: Are there individual differences or
characteristics in those who seem to have the most trouble
acquiring Russian language listening skills?

Responses	# Providing
Lack of motivation/apathetic	14
Low language ability/aptitude	12
Other things on their minds/personal life	6
Poor study skills	6
Lack of interest	6
Low self confidence	5
Lack of English language skills	5

Figure 14. Interview Responses to Question #4--
        Characteristics of those Having the Most Trouble
        Acquiring Russian

subjects.

While there were eight responses to Question #5 (Figure 15) indicating that pro-pay was not enough to motivate a soldier to acquire and retain Russian listening skills, the majority of the responses place pro-pay at the top of the list. This response combined with the last item on the list, money (beyond pro-pay), would seem to indicate that additional pay as an incentive has merit for consideration.

In summary, the soldiers interviewed seemed to place significant emphasis on motivation as the primary factor in their experiences with learning and retaining the Russian language listening skills. Motivating factors were both integrative and instrumental. The linguists held in highest regard and those who seemed to have the highest DLPT scores appeared to be driven by primarily integrative factors. Once they achieved a level of linguistic ability where they could begin to understand the language, they seemed to hunger for more and would seek opportunities to learn. An interesting observation was their emphasis on memory as a factor in the written response (but not as much in the interviews). Intuitively, memory would appear to be a key contributor to linguistic ability and has been cited as a factor in prior research (see Chapter Two). The emphasis on memory as a factor in the Likert scale response, however, seems to conflict with the quantitative findings in the

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Question #5: What are the factors affecting motivation to acquire and retain the Russian language listening skills?

Responses	# Providing
Proficiency pay	21
Job satisfaction/professionalism	13
Interest in Russian language/culture	9
Proficiency pay-not enough to motivate	8
Opportunities for training (e.g., at universities)	7
Motivation/desire to succeed	6
Money (beyond) pro pay/reenlistment bonuses	5

Figure 15. Interview Responses to Question #5--
Factors Affecting Motivation to Acquire & Retain
Russian Language Listening Skills

previous chapter and might be examined with another instrument in future studies.

CHAPTER SIX

Discussion/Conclusions

In combining the results of the quantitative and qualitative analyses with the prior study results provided by the literature review, there are a number of considerations that should be kept in mind. The restricted nature of the LSCP sample, for example, may not be directly comparable with prior studies on samples of college language classes that seem to make up the majority of the cases in the literature review. The LSCP students lived in a military environment with many of the associated factors of discipline and additional military training possibly affecting performance in class. During class hours, however, the Russian language was their only focus and there were no other subjects to require their attention or provide a break from this endeavor. As mentioned earlier, the restricted range of this sample based on the pre-selection by the Cognitive Ability (AGT) and Language Aptitude (DLAB) cut off scores has a tendency to lower the correlation coefficients between the instruments used and may distort comparison with prior study findings. Finally, the point is made again that the qualitative sample consists of (with one exception) a different group of soldiers from those in the LSCP sample. However, in this comparison the soldiers in the qualitative group went through essentially the same

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course as the LSCP subjects and some comparisons can be made. In essence, the qualitative data provided some verification to the results of the quantitative analysis indicating predictive strength of some of the cognitive, motivation, learning strategy and personality variables.

Predicting Course Completion or Attrition at DLI

The results of the discriminant analysis using the additional variables did not provide for a major improvement in predicting successful completion or attrition at DLI. Only 22% of the cases were correctly classified in the Fail category using six additional predictor variables compared with 7% correct classification in this category using the baseline selection criteria. The lack of an ability to separate academic failures from those who left the course for administrative reasons may account for this finding. In essence, many of the administrative losses may have been capable of completing the course and this could have been reflected in the results. One explanation might relate to the lack of motivation on the part of those who would have been able to continue the course. An improvement in the continuation rate could probably be made with some emphasis on the benefits of the instrumental and integrative rewards for successful completion at the start of DLI training. This area should be re-examined to determine other factors that may have contributed to these losses.

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In the development of an equation to improve prediction, there were two alternatives examined for predicting scores on the criterion (DLPT) at DLI resulting from the multiple regression runs. The first (forward/stepwise) equation had six variables with a significant Multiple R of .483 and provided an improvement over the current Cognitive Ability/Language Aptitude (AGT/DLAB) predictor combination (Multiple R = .359). In addition to the existing measures, there were two study skill variables, Good Study Habits and Study Intensity, one motivational variable (Motivation at the Start of Training) and the Verbal Ability variable included in this final equation. Study Intensity and Study Habits (SILL_5 & 2) accounted for the largest Betas at .230 and -.219, respectively, followed by Verbal Ability (FE at .173), Language Aptitude (DLAB at .157), Cognitive Ability (AGT at .140) and Motivation at the Start of Training (MOT_A at .118). Insertion of these variables in the prediction equation using the remaining half of the data revealed a significant (one tailed sig < .001) correlation of the predicted criterion (DLPT) scores with the actual scores of .310 comparing favorably with the Multiple R. The distribution of these scores in an SPSS PC+ Crosstabs procedure demonstrated a potential for improved prediction

using this equation.

In the second or backward/stepwise run, there were three variables included in the final equation in addition to those listed above. Critical Thinking (WG--Beta = .132), Self Confidence (POIS1--Beta = .118) and Prior Language Experience (NLANG--Beta = .114) increased the Multiple R to .509. The use of this second equation with the remaining half of the data yielded a correlation of predicted vs actual scores of .327 (one tailed sig < .001) also comparing favorably with the Multiple R for this run. An improved potential for prediction in the crosstabs matrix was indicated between the actual and predicted level scores on the criterion (DLPT). In essence, these two equations would appear to be able to provide an increase in the selection of potentially successful candidates who might achieve acceptable scores on the criterion or DLPT.

The higher weights for Study Intensity (SILL_5) and Study Habits (SILL_2) would seem to indicate that study skills should be given more attention in the determination of qualified applicants. However, the negative score for 'Good Study Habits' seems to conflict with 'Intensity of Study.' Examination of the distribution of scores for Good Study Habits (SILL_2) from the LSCP data base indicates that higher scores on this variable should indicate 'Good Study Habits.' A possible explanation might be that the 'Study

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Habits' (SILL_2) score is more likely to be indicative of time and effort spent on trying to learn Russian by those having the most difficulty (lacking ability) or time of those who lacked the concentration or interest required for achieving basic Russian language skills. This would seem to be supported by the negative correlations of Good Study Habits (SILL_2) with Cognitive Ability (-.143), Verbal Ability (-.132), Memory (-.153), Critical Thinking (-.131) and Language Aptitude (-.125). In other words, all of the cognitive measures appear to be negatively correlated with 'Good Study Habits' indicating a possible lower ability or aptitude for acquiring the Russian language for higher scores on this variable. Motivation at the Start of Training (MOT_A) is also negatively correlated with 'Good Study Habits' at -.145 seemingly supporting an initial lack of interest or commitment. However, Motivation During Training (MOT_B) is positively correlated with this factor at .346. One explanation for this seeming anomaly might be that once training was underway the fear of failure or pressure from instructors or peers served to increase the desire to succeed with time and effort expended on trying to make up for the failure to keep up with the class.

Predicting DLPT Above Level 2/Below Group Membership at DLI

For this discriminant analysis, 11 predictor variables in addition to Language Aptitude (DLAB) were in the final

function providing a substantial increase to 52% correct prediction for the Level 2/Above category over the 33% correct classification for this category using the baseline Cognitive Ability (AGT) and Language Aptitude (DLAB) variables. While this may be too many variables to be useful for an improved selection model, there were six variables in this function that also appeared in the final equation for the backward/stepwise regression run used to develop variables for predicting DLPT scores. Language Aptitude or the DLAB continued to provide a contribution to the variance explanation in both regression and discriminant analyses. For the additional variables, the results provided further evidence that Critical Thinking, Verbal Ability, Self Confidence and Motivation variables should be explored to improve both DLPT scores and level 2/above or below group membership predictions. While the learning strategy variable "Good Study Habits" was also in both results, the negative value of this variable in the final equation and the status of the SILL instruments (based on reliability and validity data) should be examined more closely before using this as a predictor. Three variables, Handedness, Skill Specialty and Gender, may be useful in some situations and would cost little to extract from personnel records.

<u>Predicting DLPT Scores at AIT</u>

For AIT, the data set was limited to only those completing the DLPT at AIT and the 12 '0 scores' were dropped based on the way the test was administered. The forward/stepwise regression run left only three variables in the final equation--Critical Thinking (Beta = .255), Study Intensity (Beta = .251) and Verbal Ability (Beta = .186). This combination yielded a Multiple R of .445 and the model run with the second half of the cases resulted in a favorable correlation of predicted vs actual scores of .324 (1 tailed sig = .001). The predictive capability of this three variable combination was a significant improvement over the use of the current criteria (AGT & DLAB only) Multiple R of .244. The crosstabs matrix of predicted vs actual scores indicated significant potential for improved prediction using this approach.

The backward/stepwise regression added four variables to those above in a second equation--Active Use of the Second Language (Beta = .235), Good Study Habits (Beta = -.191), Self Confidence (Beta = .148) and Tolerance of Ambiguity (Beta = .136). Multiple R increased to .516 and the use of the second half of the data in this final equation also yielded a favorable correlation between predicted and actual scores of .432 (1 tailed sig = .001). The crosstabs matrix also revealed an improvement with 87%

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of the predicted vs actual scores falling within a band of
one category on either side of the diagonal. The absence of
AGT and DLAB in both of these final equations for the AIT
run may indicate there are better predictors for scores on
the DLPT at AIT or the way the tests were administered
(e.g., no incentive to take or be successful) may give a
false impression.

Predicting Group Membership at AIT

The discriminant analysis for this step using the
additional predictors provided a substantial increase in
correct classification over the baseline Cognitive Ability
(AGT) and Language Aptitude (DLAB) run. The final function
for this analysis contained 13 of the additional predictors
in addition to Language Aptitude providing 52% correct
classification in the Level 2/Above group vs only 9% for
this category in the baseline discriminant analysis with the
current selection criteria. Again, there were too many
variables for practical application; however, the appearance
of six of the seven variables in the final equation for the
DLPT scores prediction at AIT, provides added support for
the use of these instruments to improve selection. Verbal
Ability, Critical Thinking and Self Confidence were again
consistent contributors to the results. Active Use of the
Second Language, Good Study Habits and Ambiguity Tolerance
were also in the final equation of the regression and were

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supported by the interviews with linguists in the field.

Integrating Qualitative Findings

In examining the qualitative results from the 36 interviews with linguists on the job, there were a number of statements directly supporting the factors cited in the quantitative results and some significant differences. The results of the one page scale given to these linguists just prior to the interviews indicated that motivation was the most significant factor in their minds contributing to the acquisition and retention of Russian language listening skills with 47% (17) of the responses marked at the highest importance level and 75% (27) accounting for the top two levels. This finding was reinforced by the responses to each of the five questions in the interviews with 13 or more interviewees citing this factor as a primary contributor on four of the five questions. This seems to support the regression results that include MOT_A (Motivation at the Start of Training) as a significant predictor for language acquisition. However, most of these linguists had been in the field for some time and the motivation they seemed to be most concerned with was that required for skill retention to meet their job requirements and maintain proficiency.

From the discussions there was evidence that both integrative and instrumental motivation were factors influencing this group. The integrative factors seemed to

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be most prevalent with the higher achievement level linguists. Their interest seemed to be stimulated by their increased ability to discover more about the Soviet Union through literature and other media (e.g., TV, films). For some, it was the ability to speak with native Russians and the benefits of travel to the Soviet Union based on having been selected for their higher ability levels. The instrumental factor appeared to be important to most all of the linguists for maintenance of proficiency pay and to simply meet the demands of the job.

Memory was the next highest factor cited on the scale by these linguists. Over 70% (26) of the respondents put this factor in one of the top two categories. In responses to the interview questions, however, this characteristic did not receive the same level of attention. Memory was cited on only the first question by nine of these subjects. The absence of memory as a factor in any of the final regression equations above would appear to indicate that this factor is not critical to the prediction of successful acquisition of the Russian language. Yet the first impression responses given on the pre-interview form and the responses to the first interview question should support consideration of memory as a potentially significant factor in the improvement of the selection of Russian linguist candidates.

Language aptitude was identified by over half of the

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interviewees in the top two categories as the one of the most important factor in their responses on the form. This characteristic was reinforced as a potential contributor by seven or more responses during the interviews on three of the five questions. Language aptitude was also identified in the regression results for initial acquisition at DLI; however, this factor was not listed as a contributor to significant explanation of the variance in the AIT regression run. Language aptitude was generally described by the respondents as he/she "seems to have a natural ability or inclination for learning other languages."

The next most important set of variables having 10 or more responses in the top two categories to the pre-interview form included tolerance of ambiguity, self confidence, analytic reasoning and general intelligence level. Responses to the interview questions only significantly reinforced general intelligence level (two of five questions with 10 or more responses) and self confidence (two of five questions with five or more responses). Analytic reasoning and ambiguity tolerance were both discussed during the interviews by fewer than five responses. It should be noted that all four of these variables were included in the final equations of one or more of the regression results.

There were four additional factors identified as

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significant in the interviews by ten or more responses that
were not listed on the pre-interview form. To the question
on factors contributing to language retention, 27 (75%) of
the interviewees cited language use or exposure as the
primary contributor to maintenance of skills. This response
was also given (9 responses) to the first language
acquisition question and further discussion during the
interviews revealed the difficulties of attempting to
improve or maintain Russian language skills in situations
where there were no native speakers or facilities to assist
in skill maintenance or improvement. The support for this
factor appears to reinforce the inclusion of the factor,
active use of the second language in functional practice
that appeared in the backward/stepwise regression final
equation for AIT.

Prior language experience and/or training also appeared
in the interview responses on the first (acquisition--16
responses) and the third (best linguist characteristics--14
responses) questions. The strength of these responses would
seem to support the variable Prior Language Experience that
was included in the final equation of the backward/stepwise
regression run for DLI. The next three characteristics
identified in the interviews with ten or more responses were
clear identifiers of integrative and instrumental
motivation. To the question on characteristics of the best

linguists, 16 interviewees cited 'interest in or enjoy learning' the Russian language (integrative motivation) as characteristic of the best linguists they knew. The question on factors affecting motivation elicited 21 responses favoring proficiency pay (instrumental motivation) and 13 citing job satisfaction or professionalism (instrumental motivation) as primary motivators. In addition, eight respondents stated that proficiency pay was not enough to motivate and five added that money above proficiency pay (e.g., reenlistment bonuses) was an incentive. These examples of integrative and instrumental motivation would appear to support the Motivation at the Start of Training variable that appeared in the final equations of the regression runs for DLI.

Conclusions and Further Research

In summing up the predictor variable contributions in the backward/stepwise runs for both DLPT at DLI and AIT, it appears that the learning strategy, "Good Study Habits" seems to be a consistent predictor in combination with two cognitive factors, Critical Thinking and Verbal Ability, and the somewhat independent factor of Self Confidence. In addition, Motivation at the Start of Training is also a relatively consistent indicator of potential success in second language learning. Finally, Language Aptitude or

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DLAB continued to be a reliable predictor and should be retained for initial screening. These indicators were supported by the results from the quantitative/qualitative analyses findings and literature review, and all appear to contribute to the determination of language acquisition abilities.

For the remaining variables, Prior Language Experience could be a significant factor at the initial stage of DLI training based on the strength of the interview responses and the regression results for the DLPT scores at DLI. The ability to acquire a foreign language would seem to be supported by the readiness of an individual to adjust to the demands of second language learning. Active Use of the Second Language is an additional variable listed in both DLI and AIT quantitative analyses results that is also strongly supported by the interview findings as essential to retention. Tolerance of Ambiguity also shows up as a contributor in the AIT backward/stepwise run. While it would seem that this factor should also be a contributor in the initial language acquisition stage at DLI, an argument could be made that this is a factor that a student of Russian learns to accept as he/she progresses in the language skills.

Based on the combination of factors identified in the regression analysis, interviews and literature review, there

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appears to be potential for increasing the ratio of successful candidates in the selection process for DLI by the addition of four screening instruments (in addition to AGT and DLAB). The addition of the Flanagan Industrial Test--Expression to measure English verbal ability would seem to be worthy of consideration. The factor identified in this instrument appears to contribute in each of the regressions and was supported in the literature and interview process. The Watson-Glaser Critical Thinking Appraisal should also be considered for use to identify analytic reasoning abilities that seem to provide additional discrimination. These two variables were cited in the literature (Carroll, 1981) as contributors and were also supported by the interview findings. The use of the Motivation A or Motivation at the Start of Training questionnaire for DLI applicants appears to contribute to the initial screening and was strongly supported in the literature (Krashen, 1981; Gardner, 1982) and responses during the interviews.

The Personal Outlook Inventory used to measure Self Confidence could be added to this list and prior language experience could be taken from personnel records or a short questionnaire. Due to the lack of data and the experimental nature of this instrument, the use of the Strategic Inventory for Language Learning (SILL) may be premature.

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However, this instrument should be examined as a possible screening device if additional reliability/validity evidence can be provided. In the interim, other instruments might be examined to measure learning strategies and to identify those who would have difficulty in foreign language studies based upon the predictive potential of these factors. In essence, there is enough evidence to warrant testing of the cognitive instruments, Flanagan Industrial Test-Expression (FE or Verbal Ability) and Watson-Glaser (WG) Critical Thinking Appraisal, as a minimum, for their predictive capability with future applicants to the Russian language course at DLI. Motivation at the Start of Training and the Personal Outlook Inventory (Self Confidence) should be added to this list if time and funding can be made available. This could include a field trial substituting these instruments for the DLAB to reduce the time required for the initial applicant screening. The strength of the interview responses on motivation and language use/exposure variables indicates a need for an extended look into these areas. Means to improve both integrative and instrumental motivation to learn and maintain the Russian language skills should be examined and tested. Finally, several methods could be explored to increase Russian language use and exposure that would lead to improved skills and language retention.

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APPENDIX A: **LANGUAGE SKILL CHANGE PROGRAM (LSCP) APPROACH**

LSCP APPROACH
Data Collection Timeline
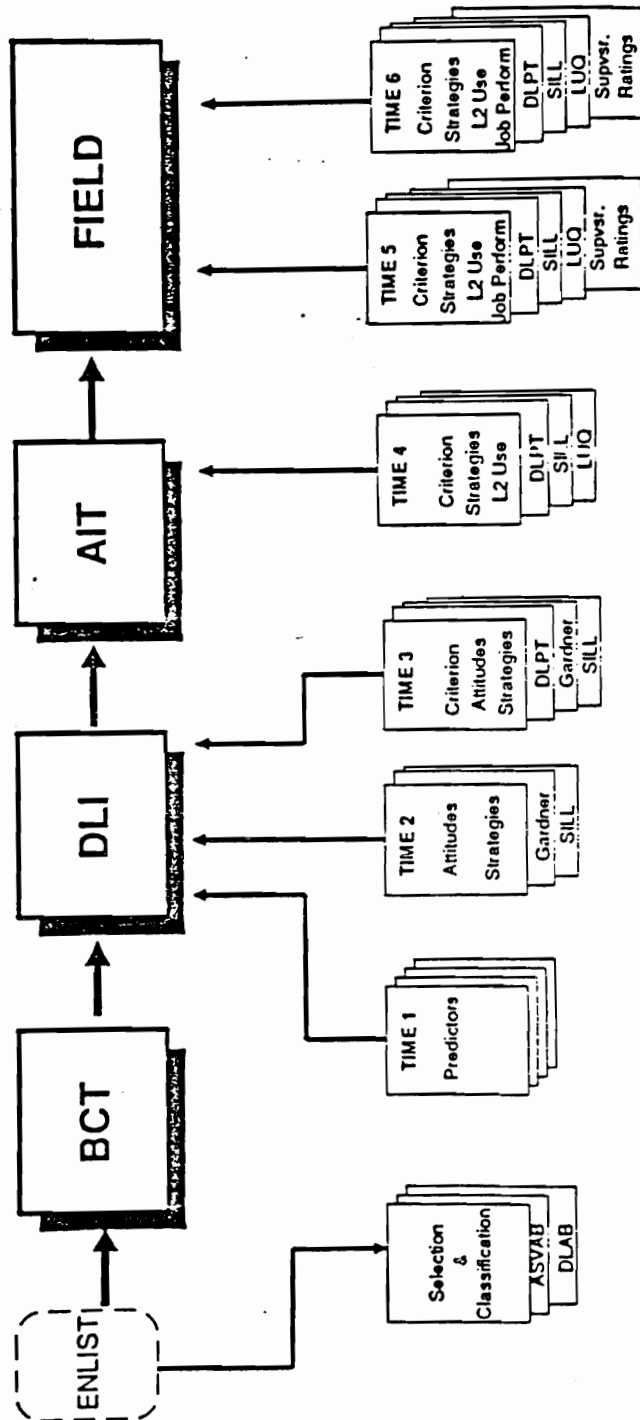
APPENDIX B: ANNUAL PROGRAM REVIEW CHARTS

RUSSIAN
PROFICIENCY COMPARISON

SKILL	FY88	FY89
LISTENING	48%	63%
READING	73%	87%
SPEAKING	31%	39%
MET GRADUATION STANDARDS	45%	60%
COMPLETIONS	840	912

* For Basic Course completions in FY89 meeting
DLPT Level 2 or above

RUSSIAN
PROFICIENCY

TOTAL COMPLETIONS = 912

SKILLS	<1	1	1+	2	2+	3
LISTENING		9%	28%	37%	15%	10%
READING		5%	8%	34%	27%	27%
SPEAKING		22%	39%	32%	5%	1%

* For Basic Course completions in FY89

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RUSSIAN ATTRITION

ENROLLMENT	ACADEMIC ATTRITION	ADMIN ATTRITION	TOTAL ATTRITION
1309	286	111	397 (30.3%)

* For Basic Courses graduating in FY89

APPENDIX C: LANGUAGE SKILLS CHANGE PROGRAM (LSCP)
            INSTRUCTIONS/INSTRUMENTS

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ADMINISTRATIVE INSTRUCTIONS (TESTING SESSION ONE)

1. BEFORE PASSING OUT ANY MATERIALS, SAY:

Thank you in advance for your cooperation. You are being asked to complete questionnaires as part of a study designed to identify factors which influence the acquisition and retention of foreign language skills. [Read aloud the 31 Jan 86 MEMORANDUM FOR RECORD from ATFL-RFL, SUBJECT: Language Skill Change Project, and announce that copies will be available at the end of this testing session.] To participate in this study, you should be ARMY ENLISTED studying a Basic Course in RUSSIAN, KOREAN, GERMAN, or SPANISH for assignment in the 97B, 97E, 98C, or 98G MOS. If there is anyone in this group that is not in the languages or MOS's mentioned, please raise your hand. [If there are any hands raised, confirm the facts and release non-research subjects.]

There will be three testing sessions today. They will take place according to the following schedule:

                    0730 - 0840   Testing Session 1

                    0850 - 0955   Testing Session 2

                    1030 - 1120   Testing Session 3

Note that there will be a 10-minute break after the first session, and a 35-minute break after the second session to allow time for coffee or snacks. [Advise of nearest snack location.]

We will now distribute the Test Packet for this testing session. It consists of the following items: a "TO THE PARTICIPANT" sheet, a PRIVACY ACT STATEMENT, four QUESTIONNAIRES, three COMPUTER-SCANNABLE ANSWER SHEETS, and two Test Scoring Pencils.

2. WHEN ALL MATERIALS HAVE BEEN DISTRIBUTED, SAY:

May I have your attention please. Would you please turn to the sheet titled "TO THE PARTICIPANT" - Please read silently as I read it aloud.

To the participant:

This battery of questionnaires and tests is part of a study designed to identify factors which influence the acquisition and retention of foreign language skills. Information gained from this study will play a major part in improving the quality of both resident and non-resident language training programs for military linguists. Valid information can be obtained only through your full cooperation. Please be sure to write your name, social security number, and date on each answer sheet and on instruments with self-contained answer sheets. Consider each item listed in the questionnaires and tests carefully and give your best response. Your contribution is essential to the success of the study. Answers will be kept in the strictest of confidence for use and review by the Army research community. Neither instructional staff nor personnel in your chain of command will be able to associate your identity with your responses to these questionnaires.

Please turn to the PRIVACY ACT STATEMENT, DA FORM 4368-R. Disclosure of requested information is solicited in accordance with this privacy act statement. Please note that although your name and Social Security Number are requested, your answers will be held in strictest confidence. Neither your instructors nor your superior officers will be able to associate your identity with your responses on these questionnaires. This statement applies to all the questionnaires you will take today. Read the PRIVACY ACT STATEMENT now.

[Pause for silent reading.]

Now look at the remainder of the test packet. There are four questionnaires in this packet. You will complete each questionnaire in order, using ONLY the #2 pencils provided. Note that for the LANGUAGE BACKGROUND QUESTIONNAIRE ONLY you will write your responses directly on the questionnaire booklet. For the remaining questionnaires, you will record your responses on the Answer Sheet provided. Make no marks in the questionnaire booklets. Before you begin each of the last three questionnaires, you will enter certain information on the corresponding Answer Sheet. Specific instructions appear on each questionnaire.

After you have completed each questionnaire, insert the Answer Sheet in the questionnaire, lay it aside, and go on to the next questionnaire. Be sure to follow the instructions for each questionnaire.

Are there any questions about how to proceed? If you do have questions as you proceed, raise your hand and someone will assist you. Please begin the LANGUAGE BACKGROUND QUESTIONNAIRE at this time and continue to work your way through all four questionnaires. When you have completed all four questionnaires, please bring them to the front of the room in accordance with the instructions on the last questionnaire.

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Please note: If you are a TRANSFER from another language or a RECYCLE within this language, please indicate that fact in Item 12 at the bottom of page 1 of the Language Background Questionnaire, and include information about your recent DLI language training in the subsequent pages of the questionnaire.

Thank you very much for your cooperation. Please begin now.

[Circulate after a few minutes to make sure students are following instructions on the questionnaires that use Answer Sheets.]

[As students turn in completed questionnaire packets, scan Answer Sheets for required information. Then separate test packets into by-questionnaire stacks.]

[Provide a stack of the 31 JAN 86 MEMORANDUM FOR RECORD from ATFL-RFL, SUBJECT: Language Skill Change Project.]

1. **BEFORE PASSING OUT ANY MATERIALS, SAY:**

   Thank you again for your cooperation. You are about to receive your second group of questionnaires designed to identify factors which influence the acquisition and retention of foreign language skills. Is there anyone present who did not complete the first group of questionnaires? [If there are any hands raised, note the names and arrange for a make-up session. Meanwhile, do have those individuals remain with you and participate in this testing session and the next.]

   We will now distribute the GROUP EMBEDDED FIGURES TEST and two Test Scoring Pencils. DO NOT START. I will go over the instructions with you!

2. **WHEN ALL MATERIALS HAVE BEEN DISTRIBUTED, SAY:**

   On the front of the test booklet PRINT your LAST NAME, FIRST NAME, and MIDDLE INITIAL on the line provided. Fill in TODAY'S DATE on the line provided. Place your SOCIAL SECURITY NUMBER on the line titled BIRTH DATE. I repeat: Place your SSN on that line, not your birthdate.

   Now start reading the Directions, which include 2 practice problems for you to do. Notice that you must make heavy, dark marks on the Test booklet as you mark your answers on this test. When you get to the end of the Directions on Page 3, please STOP. DO NOT go beyond Page 3. [Make sure that subjects are doing the two practice problems correctly and that they do not turn past Page 3.]

   Are there any questions about the directions? [Pause to allow questions]. Raise your hand if you need a new pencil during the test. When I give the signal, turn the page and start the First Section. You will have 2 minutes for the 7 problems in the First Section. Stop when you reach the end of this section. GO AHEAD! [NOTE THE TIME _____ AND WRITE STOP TIME BELOW.]

[This section is primarily for practice with the format of the test, but you should NOT tell this to the students. Circulate and give additional explanations to those who seem to be having difficulty with this set of practice items.]

AFTER 2 MINUTES [AT: _____], say:
   STOP - whether you have finished or not. When I give the signal, turn the page and start the second section. You will have 5 minutes for the 9 problems in the second section. READY. GO AHEAD! [NOTE THE TIME _____ AND WRITE STOP TIME BELOW.]

AFTER FIVE MINUTES [AT _____], say:

STOP - Whether you are finished or not. When I give the signal, turn
the page and start the Third Section. You will have 5 minutes for the
problems in the Third Section. Raise your hand if you need a new
pencil during the test. READY. GO AHEAD! [NOTE THE TIME _____
AND WRITE STOP TIME BELOW.]

AFTER FIVE MINUTES [AT _____], say:

STOP - Whether you have finished or not. Please close your test
booklets. [Collect the test booklets at this time.] [You may want to
allow a 30-second stand-and-stretch time here.]

3. WHEN ALL BOOKLETS HAVE BEEN COLLECTED, SAY:

We will now distribute the FLANAGAN INDUSTRIAL TESTS, MEMORY. DO NOT
START. I will go over the instructions with you.

Distribute the FLANAGAN INDUSTRIAL TESTS, MEMORY. When it has been
distributed, say:

On the front side of the test booklet PRINT your LAST NAME, FIRST NAME,
and MIDDLE INITIAL on the line provided. Fill in TODAY'S DATE on the
line provided. Place your SOCIAL SECURITY NUMBER on the line titled
COMPANY. I repeat: Place your SSN on the line titled COMPANY.

Turn the form over to the last page and read the directions silently as
I read them aloud:

In both the practice test below and the test that follows, you are
to learn the English meanings of words in a new language called
JHANGLI. You will first learn what the Jhangli words mean, and
then you will be given the Jhangli words and asked to remember
their English meaning. Look at the first Jhangli word in the
sample below. It is BUAT. In English it means "do". A linking
word or phrase is given to help you tie the Jhangli word to the
English word. The link for BUAT is "busy people." Note that the
link "busy people" begins with the first two letters of the
Jhangli BUAT. When you see the word BUAT, you should remember
"busy people do," and "do" is the correct answer. Study the other
words in the list the same way. You will have one minute to study
the eight Jhangli words below and link them to their English
meanings. GO AHEAD. [NOTE THE TIME _____ AND WRITE STOP
TIME BELOW.]

AFTER 1 MINUTE [AT _____], say:

STOP - Turn this page upside down. Choose the correct meanings of each
Jhangli word. Do not look back at the word list. You will have one
minute. GO AHEAD! [NOTE THE TIME _____ AND WRITE STOP TIME
BELOW.]

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AFTER 1 MINUTE [AT _____], say:

STOP - Now check your answers. You should have blackened the circles
in front of the following words; (S1) little, (S2) very, (S3) healthy,
(S4) watch, (S5) rain, (S6) light, (S7) door, (S8) do. Now open the
booklet and fold back the page so that you see only the page entitled
WORD LIST. In this test you will have five minutes to learn 40 new
words. Study the list carefully. Read each Jhangli word, its link,
and its meaning, then review the list more rapidly once or twice.
Begin studying now. [NOTE THE TIME _____ AND WRITE STOP TIME
BELOW.]

AFTER 5 MINUTES [AT _____], say:

STOP - Now turn the page and turn the booklet right side up. Find the
English word that corresponds to each Jhangli word. Blacken the circle
before the correct English word. You will have five minutes. Do not
look back at the word list. GO AHEAD! [NOTE THE TIME _____ AND
WRITE STOP TIME BELOW.]

AFTER 5 MINUTES [AT -_____], say:

STOP - Please close your test booklets. [Collect the test booklets at
this time.] [Give 30 second stretch time if needed.]

4. WHEN ALL BOOKLETS HAVE BEEN COLLECTED, SAY:

We will now distribute the FLANAGAN INDUSTRIAL TESTS, EXPRESSION. DO
NOT START. I will go over the instructions with you.

DISTRIBUTE THE FLANAGAN INDUSTRIAL TESTS, EXPRESSION. When it has been
distributed, say:

On the front side of the test booklet PRINT your LAST NAME, FIRST NAME
and MIDDLE INITIAL on the line provided. Fill in TODAY'S DATE on the
line provided. Place your SOCIAL SECURITY NUMBER on the line titled
COMPANY. I repeat: Place your SSN on the line titled COMPANY.

Turn the form over and read the directions. This is a test of your
knowledge of English grammar and sentence structure. There are two
parts. PART 1 GRAMMATICAL USAGE. In this part you are to decide
whether the sentence follows the rules for correct English grammar. If
the sentence is grammatically correct, blacken the circle labeled R
(RIGHT) in front of the sentence. If it is grammatically incorrect,
blacken the circle labeled W (WRONG) in front of the sentence.
Awkwardness of expression, capitalization, spelling and punctuation
should NOT be considered in determining the correctness of the
sentence. In the following practice sentences, the first two are
marked correctly. Do the rest of the sample sentences. [PAUSE] You
should have blackened the "W" circle of number S3, and the "R" circle
for number S4. Now look at Part II.

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PART II SENTENCE STRUCTURE. In this part you are given sets of items, each containing three different ways of writing the same sentence. You are to select one sentence in each set which is best as far as clarity and smoothness are concerned. If a sentence is the best in the given set of three, you should blacken the circle labeled BEST in front of that sentence. In the following two practice sets, the first set is marked correctly. See if you can do the second practice group. [PAUSE] In the second group you should have blackened circle B for sentence S8. Wait until the examiner tells you to begin.

Ready? Open your test booklets. You will have only five minutes for this test, so work rapidly. DO BOTH PARTS. GO AHEAD! [NOTE THE TIME _____ AND WRITE STOP TIME BELOW.]

AFTER FIVE MINUTES [AT _____], say:

STOP - Please close your test booklets.

[Collect the test booklets and PENCILS at this time.]

5. WHEN ALL BOOKLETS HAVE BEEN COLLECTED, SAY:

We will now distribute the EYSENCK PERSONALITY INVENTORY and an ANSWER SHEET. DO NOT START. I will go over the instructions with you.

DISTRIBUTE THE EYSENCK PERSONALITY INVENTORY and an ANSWER SHEET. When they have been distributed, say:

PLEASE NOTE THE FOLLOWING: When you have completed this questionnaire, you will be free to bring it to me and exit quietly for your break. Remember: You must be back in your seats at 1030 for the last testing session.

On Side One of the ANSWER SHEET enter the same information you entered during the first testing session this morning. Note that you should mark your responses on the separate Answer Sheet, NOT on the questionnaire itself. Please enter the following information now.

ON SIDE TWO:

1. Enter your LAST NAME ONLY in the block marked "SPECIAL CODES" and then blacken the corresponding circles beneath it.

ON SIDE ONE:

1. Enter TODAY'S DATE and then blacken the corresponding circles beneath it.

2. Enter your SOCIAL SECURITY NUMBER and then blacken the corresponding circles beneath it.

3. In the block marked FORM, blacken the "8." I repeat: The correct Form Number for this questionnaire is "8." Please enter the Form Number now.

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PLEASE NOTE THESE INSTRUCTIONS WITH REGARD TO THE USE OF ANSWER SHEETS:

o   Make no stray marks on the Answer Sheet.
o   If you change an answer, erase it completely.
o   Make sure you enter only one answer per item.
o   Make sure that the number of your response on the Answer Sheet
    corresponds to the number of the question on the Questionnaire.

Now turn to the instructions printed on the front of the test booklet.
Read them silently as I read them aloud. REMEMBER, however, that you
will be answering on a separate Answer Sheet, not on the test
instrument itself. On your Answer Sheet, you will use "T" (TRUE) for
"YES" and "F" (FALSE) for "No." Now follow along as I read the
instructions aloud.

> Here are some questions regarding the way you behave, feel and
> act. After each question is a space for answering "Yes," or "No."
>
> Try to decide whether "Yes," or "No" represents your usual way of
> acting or feeling. Then blacken in the space under the column
> headed "Yes" or "No".
>
> Work quickly, and don't spend too much time over any question; we
> want your first reaction, not a long drawn-out thought process.
> The whole questionnaire shouldn't take more than a few minutes.
> Be sure not to omit any questions. Now turn the page over and go
> ahead. Work quickly, and remember to answer every question.
> There are no right or wrong answers, and this isn't a test of
> intelligence or ability, but simply a measure of the way you
> behave.

Remember to use the separate Answer Sheet. Are there any questions
about the instructions?

Thank you very much for your cooperation. PLEASE BEGIN NOW.

6.   Collect test booklets and Answer Sheets as they are brought to you.
Remind students individually of the time of the next session. Maintain
quiet testing conditions for those who are still working.

PERSONAL OUTLOOK INVENTORY

Listed below are statements which allow you to express your interests and attitudes on a number of topics. None of these statements can in any way be described as representing anything good or bad. Please indicate how well each statement describes what you typically do or how you typically feel by using the following scale.

        A Very strongly agree
        B Strongly agree
        C Agree
        D No opinion
        E Disagree
        F Strongly disagree
        G Very strongly disagree

Are there any questions about the instructions? When you finish, insert the Answer Sheet in the Test Booklet and remain seated for the last questionnaire.

PLEASE BEGIN NOW.

3. Collect the test booklets and answer sheets as students finish. When all have been collected say:

We will now distribute the WATSON-GLASER CRITICAL THINKING APPRAISAL questionnaire and Answer Sheet. DO NOT START, I will go over the instructions with you!

4. WHEN ALL MATERIALS HAVE BEEN DISTRIBUTED, say:

Now turn the answer sheet sideways so that you can fill in the necessary information.

    o PRINT your LAST NAME, FIRST NAME, and MIDDLE INITIAL in the blocks provided and blacken the letter box below which matches each letter of your name. Print one letter of your name in each box, starting with the first block. Remember to print your last name first, then go to the section titled first name, print your first name, and then print your middle initial in the space titled MI. If either your last name or first name is too long to fit in the boxes provided, print as many letters as will fit.

    o Enter your SOCIAL SECURITY NUMBER in the block labeled ID NUMBER, and blacken the corresponding blocks below it.

    o Enter TODAY'S DATE in the block labeled 123456, using this format: YYMMDD. [Write the correct date on chalkboard, e.g.. "860310" for "10 March 1986."]

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When you have finished entering all information and making heavy black
marks in the columns below, stop and wait for futher instructions.

[Pause until all students have finished.]

Now turn your answer sheet so that you can read the words WATSON-GLASER
CRITICAL THINKING APPRAISAL. In this test all the questions are in the
test booklet. There are five separate tests in the booklet, and each
one is preceded by its own directions. For each question, decide what
you think is the best answer. Since your score will be the number of
items you answer correctly, try to answer each question even if you are
not sure that your answer is correct. Record your choice by making a
black mark in the appropriate space on the answer sheet. Always be
sure that the answer space has the same number as the question in the
booklet. Do not make any other marks on the answer sheet. If you
change your mind about an answer, be sure to erase the first mark
completely. Do not spend too much time on any one question. When you
finish a page, go right on to the next one. If you finish all of the
tests before time is up, you may go back and check your answers.

YOU WILL HAVE APPROXIMATELY 40-50 MINUTES TO WORK ON THIS TEST! Now
read the directions on the cover of your test booklet. [PAUSE] Are
there any questions about what you are to do? [PAUSE] READY? ...GO
AHEAD! [NOTE THE TIME _____ AND WRITE STOP TIME BELOW.]

AFTER 40 MINUTES [AT _____], SAY:

Please try to finish in the next ten minutes.

AFTER 50 MINUTES [AT _____], SAY:

Please finish the item you are on and prepare to turn in your
materials. [Collect the test booklets, answer sheets and pencils.]

SAY:

This completes the third and final testing session. We thank you very
much for your cooperation, and wish you success in your language
studies.

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LANGUAGE BACKGROUND QUESTIONNAIRE

1. Write your responses directly on the questionnaire booklet.

2. Complete the questionnaire in accordance with (IAW) its internal directions.

3. When finished, lay your completed questionnaire aside and proceed to FORM A.

PLEASE TURN THE PAGE AND BEGIN.

How did you find out about DLI?

A. Presentation at a school from a DLI representative

B. A local recruiter

C. Friends

D. Local news media

E. Other_____

Language Background Questionnaire

1. Name _____ 2. Date _____ 3. SSN _____

4. Place of Birth (Country) _____ 5. Native Language _____

6. DLI Target Language _____

7. What is the highest level of formal education you have attained?

   High School _____

   Some college, but no degree ____

   Two year college certificate ____

   College degree (BA ____ BS ____ Engineering ____ Business ____ Other ____)

   Graduate degree (MA ____ MS ____ PhD ____ EdD ____ Other ____)

8. If you have a college degree, what was your major?

   _____

9. Are you being reclassified from a prior MOS into an MI MOS?

   ( ) NO

   ( ) YES What was/were your prior MOS(s) _____

   _____

10. Are you being retrained into a new language within the same MI MOS?

    ( ) NO

    ( ) YES What was/were your prior language(s) _____

    _____

11. Are you primarily:

    Left handed ____ Right handed ____ Ambidextrous (both) ____

12. Have you ever studied or otherwise been exposed to a foreign language,
    including the DLI target language? (check one)

    ( ) Yes   IF YES: Go to next page.

    ( ) No   IF NO: STOP. YOUR QUESTIONNAIRE IS COMPLETED.

Indicate the language or languages that you have been
exposed to. If you have been exposed to 2 or more
languages, rank them according to degree of exposure.
Even though it may be appropriate for you to list several
foreign languages, please limit your list to the 3 languages
with which you have had the most experience:

Foreign Language 1: _____ (most exposure)

Foreign Language 2: _____ (next most exposure)

Foreign Language 3: _____ (least exposure)

FOR EACH language that you have listed above, we would like
information on your specific experiences. On the pages that follow
there are 3 identical blocks of questions, one for each of the 1, 2,
or 3 languages that you have listed above. Please fill out 1 block
per language, beginning with the language to which you have had the
most exposure.

APPENDIX F

QUESTIONNAIRE "STRATEGY INVENTORY FOR LANGUAGE LEARNING" (LONG)

1. FOR THIS QUESTIONNAIRE YOU WILL RECORD YOUR ANSWERS ON A SEPARATE ANSWER SHEET.

    PLEASE REMEMBER THESE SPECIAL INSTRUCTIONS REGARDING THE USE OF ANSWER SHEETS.

    - o Make no stray marks on the answer sheet.
    - o If you change an answer, erase the old answer completely.
    - o Make sure that you enter only one answer per item.
    - o Make sure that the number of your response on the answer sheet corresponds to the number of the question in the questionnaire.

2. BEFORE YOU BEGIN THIS QUESTIONNAIRE PLEASE ENTER THE FOLLOWING INFORMATION ON THE ANSWER SHEET:

    ON SIDE TWO:

    A. Enter your LAST NAME ONLY in the block marked "Special Codes" and then blacken the corresponding circles beneath it.

    ON SIDE ONE:

    B. Enter TODAY'S DATE, SOCIAL SECURITY NUMBER, EDUCATION LEVEL, GRADE, and blacken the corresponding circles.

    C. In the block marked FORM, blacken the "J".

        NOTE: THE CORRECT ENTRY FOR THIS QUESTIONNAIRE IS "J".

3. When you finish, insert the completed answer sheet into the questionnaire.

STRATEGY INVENTORY FOR LANGUAGE LEARNING
VERSION 2.1

Instructions

The STRATEGY INVENTORY FOR LANGUAGE LEARNING (SILL) is designed to gather information about how you, as a student of a foreign language, go about learning that language. On the following pages, you will find 121 statements related to learning a foreign language. Please read each statement. On the separate answer sheet, blacken the response (A, B, C, D, or E) that tells how true the statement is in terms of what you actually do when you are learning a foreign language.

    A. Never or almost never true of me
    B. Generally not true of me
    C. Somewhat true of me
    D. Generally true of me
    E. Always or almost always true of me

NEVER OR ALMOST NEVER TRUE OF ME means that the statement is never or very rarely true of you; that is, you never do the behavior which is described in the statement, or you do it only in very rare instances.

GENERALLY NOT TRUE OF ME means that the statement is usually not true of you; that is, you do the behavior which is described in the statement less than half the time but more than in very rare instances.

SOMEWHAT TRUE OF ME means that the statement is true of you about half the time; that is, sometimes you do the behavior which is described in the statement, sometimes you don't, and these instances tend to occur with about equal frequency.

GENERALLY TRUE OF ME means that the statement is usually true of you; that is, you do the behavior which is described in the statement more than half the time.

ALWAYS OR ALMOST ALWAYS TRUE OF ME means that the statement is true of you in all or almost all instances; that is, you always or almost always do the behavior which is described in the statement.

Answer in terms of how well the statement describes you, not in terms of how you think you should be, or what other people do. Answer in reference to the foreign language you are leaning now. There are no right or wrong answers to these statements. Mark your answers on the separate answer sheet provided. Please make no marks on the inventory booklet itself. Work as quickly as you can without being careless. The inventory generally takes about 20-40 minutes to complete. If you have any questions, let the proctor know immediately.

QUESTIONNAIRE "STRATEGY INVENTORY FOR LANGUAGE LEARNING" (LONG)

1. FOR THIS QUESTIONNAIRE YOU WILL RECORD YOUR ANSWERS ON A SEPARATE ANSWER SHEET.

   PLEASE REMEMBER THESE SPECIAL INSTRUCTIONS REGARDING THE USE OF ANSWER SHEETS.

   o   Make no stray marks on the answer sheet.
   o   If you change an answer, erase the old answer completely.
   o   Make sure that you enter only one answer per item.
   o   Make sure that the number of your response on the answer sheet corresponds to the number of the question in the questionnaire.

2. BEFORE YOU BEGIN THIS QUESTIONNAIRE PLEASE ENTER THE FOLLOWING INFORMATION ON THE ANSWER SHEET:

   ON SIDE TWO:

   A. Enter your LAST NAME ONLY in the block marked "Special Codes" and then blacken the corresponding circles beneath it.

   ON SIDE ONE:

   B. Enter TODAY'S DATE, SOCIAL SECURITY NUMBER, EDUCATION LEVEL, GRADE, and blacken the corresponding circles.

   C. In the block marked FORM, blacken the "J".

       NOTE: THE CORRECT ENTRY FOR THIS QUESTIONNAIRE IS "J".

3. When you finish, insert the completed answer sheet into the questionnaire.

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A. Never or almost never true of me
B. Generally not true of me
C. Somewhat true of me
D. Generally true of me
E. Always or almost always true of me

1. I talk to myself in the foreign language while walking, driving, doing work at home, or doing other activities.

2. I give myself tests concerning the foreign language.

3. I try to answer all questions mentally in class, even when the teacher is addressing someone else.

4. To help me remember, I make lists of new words and phrases found in foreign language reading passages or conversations.

5. I am easily distracted from my foreign language studies because my mind wanders when I am in class.

6. I plan what I am going to accomplish in learning the foreign language each day or each week.

7. I use rhyming or similar techniques as a device to help me remember new words and phrases.

8. I consciously try to apply grammatical rules when speaking.

9. I create mental pictures to help me remember new words and phrases.

10. I watch foreign language movies or TV programs or listen to foreign language radio, even when I know I won't understand all the words.

11. Whenever possible, I actively look for people with whom I can speak the foreign language.

12. When I need to, I use "filler words" (equivalent to "well" and "let's see") to keep the conversation going in the foreign language.

13. I highlight, underline, or mark new words and note their meanings as I read the foreign language.

14. I analyze the kind of errors I make and use that information for avoiding such errors later.

15. I read new words several times out loud so I can link the pronunciation with the written word.

A. Never or almost never true of me
B. Generally not true of me
C. Somewhat true of me
D. Generally true of me
E. Always or almost always true of me

16. Whenever possible, I attend and participate in events where the foreign language is spoken (e.g., parties, meetings, church, etc.).

17. I encourage myself to speak the foreign language, even when I feel nervous or unsure of my speaking ability.

18. I only study the foreign language when there is the pressure of a test.

19. If I do not understand, I ask for an example of how to use a particular word or expression.

20. I am so afraid of making errors that I do not try to speak or write the foreign language.

21. When I am talking with a native speaker, I pay attention to body language (gestures, facial expression, distance, posture, etc.) to help me understand the message.

    I create associations between new material and what I already know.

23. I link the sound of a new word with a visual image to help me remember the word.

24. I organize my material for each language learning task.

25. When I hear a new word, I ask how it is spelled or written.

26. I find that I concentrate better if I read aloud to myself.

27. In order to remember the right pronunciation of a new word, I write down the accent marks or other pronunciation cues.

28. I read books, magazines, children's stores, comics, or newspapers in the foreign language.

29. I try to take notes in class in the foreign language.

30. I try to use new grammatical forms as often as possible.

31. When I don't understand all the words in a foreign language conversation, I try to fill in the gaps by using my own background knowledge of the foreign language, my native language, and the topic being discussed.

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A. Never or almost never true of me
B. Generally not true of me
C. Somewhat true of me
D. Generally true of me
E. Always or almost always true of me

32. When I am speaking in the foreign language but cannot remember a particular word, I paraphrase, use a synonym, make gestures, or try to describe or define the target word in order to communicate.

33. I make good use of my study time when learning a foreign language.

34. I skim the foreign language reading passage first to get the main idea, then I go back and read it more carefully.

35. When a foreign language lesson is difficult, I either give up or study only the easy parts.

36. I come to my foreign language class unprepared.

37. I write personal notes or messages in the foreign language.

38. If applicable, I look for words that are similar to those in my own language (or another foreign language I have studied) in order to understand new words in the target language.

39. I memorize grammatical rules without understanding when they are used.

40. I try to find as many ways as I can to use the foreign language.

41. I remember a new word or structure by visualizing a situation in which it typically occurs or might occur.

42. When learning a list of new words, I make up a sentence with each word.

43. I use logic to help me learn the L2; for example, "Feminine nouns in this language require the article 'la.' The word I have just read has the article 'la.' Therefore, the word I have just read is a feminine noun."

44. My main way of learning a new word is to say it or write it over and over.

45. I use a tape recorder to record and listen to my own pronunciation.

46. I sing songs in the foreign language so that I can practice new words and sounds in context.

47. Whenever I can, I review with other people what I have learned in target language.

A. Never or almost never true of me
B. Generally not true of me
C. Somewhat true of me
D. Generally true of me
E. Always or almost always true of me

48. I need to look up every unfamiliar word in the dictionary so I can understand what I am reading.

49. I use flashcards (with the new word or phrase on one side and the definition or example on the other).

50. I draw pictures, cartoons, or doodles of new words, phrases, or structures to help me remember them.

51. I play foreign language word games, such as Scrabble, Bingo, crossword puzzles, etc.

52. I make up exercises to practice new grammatical forms, such as a new tense of a verb.

53. If I get stuck for a word or phrase, I ask for help from the person to whom I am speaking.

1. If I do not know a word, I use another word that is similar to get the message across.

55. I find the meaning of a word by breaking it down into parts, such as the root word and prefixes or suffixes.

55. I avoid topics that I do not feel I have the vocabulary to discuss and direct the conversation to subjects in which I feel confident.

57. I repeat the speaker's sentence to give me more time to think of a reply.

58. I look for similarities and contrasts between the foreign language and my own language (or other languages I have studied).

59. I ask native speakers to correct my pronunciation.

60. If a speaker talks too fast in the foreign language, I ask him or her slow down so I can understand.

61. I make use of all available information in the paragraph to comprehend unfamiliar words.

62. When a native speaker is talking in the foreign language, I try to concentrate on what the speaker is saying and put unrelated topics out of my mind.

A. Never or almost never true of me
B. Generally not true of me
C. Somewhat true of me
D. Generally true of me
E. Always or almost always true of me

63. I feel frustrated if I cannot understand every word someone is saying to me in the foreign language.

64. I use familiar words in new combinations in order to make new sentences.

65. When I can't think of a word or phrase in a foreign language conversation, I briefly fall back into my own language and then return to the foreign language in order to keep up the conversational flow.

66. If applicable to the language, I pay attention to characteristics of the text (headings, indentations, punctuation, etc.) to help me understand the meaning of the passage.

67. If I am trying to learn a long vocabulary list, I break it into parts and learn the parts one at a time.

68. I make unusual or bizarre associations in order to remember new words.

69. I make ongoing mental summaries of what I have read in a passage.

70. I try to imitate the way native speakers talk.

71. I monitor my foreign language writing and go back to correct my written mistakes when I notice them.

72. In a foreign language conversation I anticipate what the other speaker is going to say based on what has been said earlier.

73. I feel I must translate what I hear or read in the foreign language word-for-word into my own language so that I can understand it.

74. I say positive things to myself to increase my confidence in my language skills.

75. When trying to learn a new "action word," I physically act out the word.

76. I use my understanding of the structure of my own language to help me understand how the foreign language works.

77. I decide in advance to pay special attention to specific aspects of the foreign language in a given situation; for example, I decide to focus on the use of the past tense during a conversation.

A. Never or almost never true of me
B. Generally not true of me
C. Somewhat true of me
D. Generally true of me
E. Always or almost always true of me

78. I actively listen for specific phrases that organize material, such as, "This is important," "An important point to remember is...," "First you...," "Finally...," and "The main thing is..."

79. I check my notes with classmates after foreign language class is over.

80. I consciously try to use foreign idioms and other formalized patterns as I talk.

81. I try to figure out meanings of new words based on the situation in which these words occurred.

82. In order to memorize foreign language words, I classify them by common characteristics (such as all nouns), by opposites (such as (black or white), or by some other groupings.

83. I speak a new word or phrase in my mind first before I say it out loud.

. If I hear a new word in a conversation, I remember it by the sound so that I can look up the meaning later.

85. I write out each new word several times until I am sure I know it.

86. I use mechanical "tricks" to help me learn new items (for example, putting new words in my right pocket and moving them to the left pocket when learned; using different folders for new material and material I have mastered).

87. When I am learning a new word or phrase, I write down all the other words that I know which have meanings similar to that of the new word.

88. I actually visualize the spelling of new word in my head.

89. I practice presenting my oral report to a friend or a family member before I present the report in class, so that I can get feedback.

90. I think seriously about the progress I have made in learning the foreign language.

91. I prepare for a future language task (such as a skit or a written report) by considering the purpose of the task, the language elements needed, and my current language skills.

2. I give myself a tangible reward when I have reached a certain goal in my language learning.

A. Never or almost never true of me
B. Generally not true of me
C. Somewhat true of me
D. Generally true of me
E. Always or almost always true of me

93. I pay attention to the times when my own language (or any other language I have studied) interferes with learning the target language; for example, when I try to apply grammatical rules from my own language which conflict with those of the target language.

94. I arrange my physical environment to promote learning, such as searching for a quiet room, sitting in front of the class so as to hear better, and making sure the place is not too cold or too warm.

95. I try to relax as much as possible before I have to speak in front of the class in the target language.

96. I identify my long-range goals for language learning.

97. After completing a language lesson, I determine what my difficulties are and think about what I need to do to improve.

98. I note the reactions of native speakers to certain phrases or words have used to make sure of the appropriateness to the situation.

99. I use a notebook to record information about my language learning, for example, the number of words I learned in a given day, the words I found to be difficult, or the method I used to remember the words.

100. I am constantly looking for patterns in the foreign language.

101. When I am learning new material, I develop short sentences and then lengthen them by adding adjectives and adverbs.

102. I drill myself on the same word in different forms, for example, different tenses, genders, etc.

103. I immediately make use of new words in conversation.

104. I initiate conversations in the foreign language.

105. I plan for and rehearse language elements necessary to carry out an upcoming activity in the target language (for example, an oral report).

106. I preview the lesson before I go into class to get a general idea of what it is about, how it is organized, and how it fits in with material I have already learned.

A. Never or almost never true of me
B. Generally not true of me
C. Somewhat true of me
D. Generally true of me
E. Always or almost always true of me

107. I read a story or dialogue several times until I can understand it.

108. I look for exceptions to grammar rules in the target language.

109. I generate my own understanding of the rules of the foreign language, and as I learn more, I discard or revise the rules I have generated if they are not correct.

110. I paraphrase the speaker's sentence to check my understanding of what was said.

111. I infer the meaning of new words by analogy with words in my own language or in another foreign language I have studied (for example, if nación = nation, does relación = relation?).

112. I use reference materials, such as dictionaries, glossaries, and other written material, to aid my comprehension of the foreign language.

13. I outline the main ideas in a language lesson.

114. I make summaries of important information that I hear or read in the foreign language.

115. At parties and other social events where there are people who speak the foreign language, I talk mostly to people who speak my own language.

116. In order to remember a new word, I think of a word that sounds like it in the foreign language or my own language.

117. I apply language rules in many situations, even if I know that I may make mistakes.

118. I remember new words or phrases by remembering their location in the notebook, on the page, on the chalkboard, or on a street sign.

119. I study the history and culture of the country where the foreign language is spoken, so that I can better understand the language itself.

120. I teach my peers what I know in the foreign language as a means of practicing and reviewing.

121. I work as hard as I can to learn the target language.

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2. QUESTIONNAIRE "FORM A"

1. FOR THIS QUESTIONNAIRE YOU WILL RECORD YOUR ANSWERS ON A SEPARATE ANSWER
SHEET.

   PLEASE NOTE THESE SPECIAL INSTRUCTIONS REGARDING THE USE OF ANSWER
   SHEETS:
      o Make no stray marks anywhere on the Answer Sheet.
      o If you change an answer, erase the old answer completely.
      o Make sure that you enter only one answer per item.
      o Make sure that the number of your response on the Answer Sheet
         corresponds to the number of the question in the Questionnaire.

2. BEFORE YOU BEGIN THIS QUESTIONNAIRE PLEASE ENTER THE FOLLOWING
INFORMATION ON SIDE 1 OF THE ANSWER SHEET:

   a. Enter TODAY'S DATE and then blacken the corresponding circles
       beneath it.

   b. Enter your SOCIAL SECURITY NUMBER and then blacken the
       corresponding circles beneath it.

   c. Enter your LAST NAME ONLY in the block marked "Special Codes" but
       do NOT blacken any circles beneath it.

   d. In the block marked FORM, blacken the "A."

3. When you have finished, insert the completed Answer Sheet into the
   Questionnaire and lay them aside, and go on to the CALIFORNIA
   PSYCHOLOGICAL INVENTORY.

PLEASE TURN THE PAGE, READ THE INSTRUCTIONS, AND BEGIN.

Please indicate the extent to which you agree or disagree with each of the following statements about the potential advantages of learning German. Mark your answers on the Answer Sheet according to the following codes:

> A = Agree Strongly
> B = Agree Moderately
> C = Agree Slightly
> D = Disagree Slightly
> E = Disagree Moderately
> F = Disagree Strongly

Please note that any given statement may or may not have any relevance to you personally. For example, assume this was one of the items:

> "I like having the opportunity to learn German because I will be able to read German literature in the original."

If reading German is totally irrelevant to you, you would darken F for "Strongly Disagree". On the other hand, if reading German literature in the original is one of your most important reasons for learning German, you would darken "A" for "Strongly Agree". Of course, your response to this statement may lie somewhere between those two extremes; in that case you would darken B,C,D, or E.

Agree Strongly	Agree Moderately	Agree Slightly	Disagree Slightly	Disagree Moderately	Disagree Strongly
A	B	C	D	E	F

I like having the opportunity to learn German because ...

1. it will help me get the kind of job I want in the military

2. it will increase my ability to influence others

3. it will enable me to better understand and appreciate German cultures

4. it will make me a better educated person

5. it will give me an edge in competing with others

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Agree Strongly	Agree Moderately	Agree Slightly	Disagree Slightly	Disagree Moderately	Disagree Strongly
A	B	C	D	E	F

6. it will enable me to get to know German persons better

7. it will make me appear more cultured

8. it will enable me to meet and converse with a greater variety of people

9. it will help me earn a college degree

10. it will give me the background I need to pursue my career goals

11. other people will respect me more if I have a knowledge of a foreign language

12. it will give me specialized training equivalent to a college degree

13. it will enable me to interact socially with German people

14. it will make me more attractive to future employers

15. it will provide me with better and more useful training than I could get by going to college

16. it will increase my prospects for one day working with an international firm

17. it will give me a chance to really get to know people who have different perspectives

18. it will make me more knowledgeable

19. it will help me protect my interests when I deal with German people

20. it will make me a candidate for interesting and exciting jobs in the future

21. it will help me get a job after I have completed my military service

22. it will enable me to establish more genuine relationships with persons of another culture

Agree Strongly	Agree Moderately	Agree Slightly	Disagree Slightly	Disagree Moderately	Disagree Strongly
A	B	C	D	E	F

23. It will provide me with a unique skill more quickly than I could get by going to college

24. It will allow me to come into contact with some important, powerful and influential people

Please indicate the extent to which you agree or disagree with each of the following statements about foreign languages and foreign language learning in general. Your opinions or feelings may lead you to agree with some statements and disagree with others. There are no right or wrong answers - just your point of view. REMEMBER:

IT IS YOUR HONEST OPINION THAT IS BEING REQUESTED, AND YOUR RESPONSE WILL BE TREATED WITH STRICT CONFIDENTIALITY.

MARK EACH STATEMENT ACCORDING TO YOUR FIRST IMPRESSION; IT IS NOT NECESSARY TO TAKE A LOT OF TIME FOR ANY ONE QUESTION.

Please read each statement carefully and darken the letter on the Answer Sheet which best represents your response.

Agree Strongly	Agree Moderately	Agree Slightly	Disagree Slightly	Disagree Moderately	Disagree Strongly
A	B	C	D	E	F

25. I would really like to learn many languages.

26. When I see a foreign film, I would rather hear the sound track in English than hear the original language and see English subtitles.

27. I enjoy meeting and listening to people who speak other languages.

28. If I planned to live in another country, and I thought I could get along in English, I would not make such effort to learn the language.

29. I often wish I could read newspapers and magazines in many languages.

30. I wish I could speak several languages fluently.

31. Studying a foreign language is not a pleasant experience.

32. Knowing foreign languages can help one convey many feelings and ideas that are not easily expressed in English.

33. Most foreign languages sound like gibberish to me.

34. I really have little interest in foreign languages.

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APPENDIX I

QUESTIONNAIRE "FORM B"

1. FOR THIS QUESTIONNAIRE YOU WILL RECORD YOUR ANSWERS ON A SEPARATE ANSWER SHEET.

   PLEASE REMEMBER THESE SPECIAL INSTRUCTIONS REGARDING THE USE OF ANSWER SHEETS.

   o   Make no stray marks on the Answer Sheet.
   o . If you change an answer, erase the old answer completely.
   o   Make sure that you enter only one answer per item.
   o   Make sure that the number of your response on the answer sheet corresponds to the number of the question in the questionnaire.

2. BEFORE YOU BEGIN THIS QUESTIONNAIRE PLEASE ENTER THE FOLLOWING INFORMATION ON THE ANSWER SHEET:

   ON SIDE TWO:

   A. Enter your LAST NAME ONLY in the block marked "Special Codes" and then blacken the corresponding circles beneath it.

   ON SIDE ONE:

   B. Enter TODAY'S DATE and then blacken the corresponding circles beneath it.

   C. Enter your SOCIAL SECURITY NUMBER and then blacken the corresponding circles beneath it.

   D. In the block marked FORM, blacken the "B".

3. When you finish, insert the completed answer sheet into the questionnaire and lay them aside, and go on to the STRATEGY INVENTORY FOR LANGUAGE LEARNING.

   PLEASE TURN THE PAGE, READ THE INSTRUCTIONS, AND BEGIN FORM B.

Please indicate the extent to which you agree or disagree with each of the following statements about foreign languages and foreign language learning in general. Your opinions or feelings may lead you to agree with some statements and disagree with others. There are no right or wrong answers - just your point of view.. REMEMBER:

· IT IS YOUR HONEST OPINION THAT IS BEING REQUESTED, AND YOUR RESPONSE WILL BE TREATED WITH STRICT CONFIDENTIALITY.

· MARK EACH STATEMENT ACCORDING TO YOUR FIRST IMPRESSION; IT IS NOT NECESSARY TO TAKE A LOT OF TIME FOR ANY ONE QUESTION.

Please read each statement carefully and darken the letter on the Answer Sheet which best represents your response.

Agree Strongly	Agree Moderately	Agree Slightly	Disagree Slightly	Disagree Moderately	Disagree Strongly
A	B	C	D	E	F

1. I keep up to date with German by working on it every evening.

2. I am glad to have the opportunity to learn German.

3. I would feel confident and relaxed if I had to ask street directions in German.

4. It embarrasses me to volunteer answers in class.

5. I wish I were fluent in German.

6. I tend to approach my German homework in a random and unplanned manner.

7. I sometimes daydream about dropping out of the German course.

8. I never feel quite sure of myself when I am speaking in class.

9. Making a hotel reservation in German would bother me.

10. The satisfaction of learning German makes the effort worthwhile.

11. When I study German outside of class, I tend to ignore distractions and stick to the job at hand.

12. If ever I should run into a group of people speaking German, I would feel relaxed in joining them.

13. When I have a problem understanding something we are learning in my German class, I always ask for help.

14. I wish I'd never started learning German.

15. I've learned just enough German to convince me I don't want to learn any more.

16. I do not get anxious when I have to respond in class.

17. To be really honest, I hate German.

18. I would get flustered if it were necessary to speak German when making a telephone call.

19. I hope I get the chance to come back and take the intermediate/advanced course.

20. I don't pay too much attention to the feedback I receive in class.

21. Most of the things we learn in our German classes are interesting.

22. I seldom go out of my way to attend German films, plays or other unofficial cultural activities.

23. I would feel uncomfortable speaking German in any real-world situation.

24. In all honesty, I would rather do almost anything other than study German.

25. I want to learn only enough German to get through the course.

26. I am generally relaxed in class.

27. I wish I had begun studying German at an early age.

28. I would feel calm and sure of myself if I had to order a meal in German.

29. It bothers me that other students speak German in class better than I do.

30. I really enjoy learning German.

31. I would like to learn as much German as possible.

32. I often feel uncomfortable when asked to speak German in class.

33. My motivation to learn German is at an all-time low.

34. I feel confident when active participation takes place in class.

35. If I had it to do over, I would avoid studying German.

36. I am sure I would get nervous if I had to speak German to a sales clerk.

37. I don't bother checking my corrected assignments.

38. As I get further along in the course, I find my desire to learn German continually increasing.

39. I often dread going to class.

40. Learning German takes so long the attempt does not seem worthwhile.

41. I would feel comfortable speaking German in an informal gathering where both English and German speaking persons were present.

42. I make a point of trying to understand all the German I see and hear.

43. I plan to continue my study of German after I complete this course.

44. I really work hard to learn German.

45. I think studying German is boring.

46. I really can't understand people who get uptight about using German in class.

47. I enjoy participating in class.

48. To be honest, I really have little desire to learn German.

In the following section we would like to get some idea of your impressions of your German course, your course materials, and your primary instructors. You will see that on each line there are two words expressing opposites.

For example, under Course as a Whole:

	A	B	C	D	E	F	G	
difficult	___	___	___	___	___	___	___	easy

If you were to mark "A" it would mean that you think the course was extremely difficult. If you were to mark "G" it would mean that you think the course was extremely easy. Note that the central position "D" indicates that you think the course is about like every other course on this dimension.

Please go rapidly through this section; it is your immediate impression in which we are interested.

PLEASE MARK YOUR ANSWERS ON THE ANSWER SHEET. (YOU MAY MARK THEM HERE FIRST IF YOU PREFER.)

COURSE AS A WHOLE

		A	B	C	D	E	F	G	
49.	meaningful	___	___	___	___	___	___	___	meaningless
50.	enjoyable	___	___	___	___	___	___	___	unenjoyable
51.	monotonous	___	___	___	___	___	___	___	absorbing
52.	effortless	___	___	___	___	___	___	___	hard
53.	awful	___	___	___	___	___	___	___	nice
54.	interesting	___	___	___	___	___	___	___	boring
55.	good	___	___	___	___	___	___	___	bad
56.	simple	___	___	___	___	___	___	___	complicated
57.	disagreeable	___	___	___	___	___	___	___	agreeable
58.	fascinating	___	___	___	___	___	___	___	tedious
59.	worthless	___	___	___	___	___	___	___	valuable

		A	B	C	D	E	F	G	
60.	necessary	___:	___:	___:	___:	___:	___:	___	unnecessary
61.	appealing	___:	___:	___:	___:	___:	___:	___	unappealing
62.	useless	___:	___:	___:	___:	___:	___:	___	useful
63.	elementary	___:	___:	___:	___:	___:	___:	___	complex
64.	pleasurable	___:	___:	___:	___:	___:	___:	___	painful
65.	educational	___:	___:	___:	___:	___:	___:	___	noneducational
66.	unrewarding	___:	___:	___:	___:	___:	___:	___	rewarding
67.	difficult	___:	___:	___:	___:	___:	___:	___	easy
68.	satisfying	___:	___:	___:	___:	___:	___:	___	unsatisfying
69.	unimportant	___:	___:	___:	___:	___:	___:	___	important
70.	pleasant	___:	___:	___:	___:	___:	___:	___	unpleasant
71.	exciting	___:	___:	___:	___:	___:	___:	___	dull
72.	clear	___:	___:	___:	___:	___:	___:	___	confusing
73.	colorful	___:	___:	___:	___:	___:	___:	___	colorless

COURSE MATERIALS

		A	B	C	D	E	F	G	
74.	important	___:	___:	___:	___:	___:	___:	___	unimportant
75.	meaningless	___:	___:	___:	___:	___:	___:	___	meaningful
76.	dull	___:	___:	___:	___:	___:	___:	___	stimulating
77.	interesting	___:	___:	___:	___:	___:	___:	___	boring
78.	organized	___:	___:	___:	___:	___:	___:	___	disorganized
79.	valuable	___:	___:	___:	___:	___:	___:	___	worthless
80.	confusing	___:	___:	___:	___:	___:	___:	___	coherent
81.	hard	___:	___:	___:	___:	___:	___:	___	easy

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		A	B	C	D	E	F	G	
82.	natural	___:	___:	___:	___:	___:	___:	___	artificial
83.	irrelevant	___:	___:	___:	___:	___:	___:	___	relevant
84.	clear	___:	___:	___:	___:	___:	___:	___	unintelligible
85.	useful	___:	___:	___:	___:	___:	___:	___	useless

PRIMARY INSTRUCTORS

		A	B	C	D	E	F	G	
86.	efficient	____:	____:	____:	____:	____:	____:	____	inefficient
87.	insensitive	____:	____:	____:	____:	____:	____:	____	sensitive
88.	cheerful	____:	____:	____:	____:	____:	____:	____	cheerless
89.	competent	____:	____:	____:	____:	____:	____:	____	incompetent
90.	insincere	____:	____:	____:	____:	____:	____:	____	sincere
91.	unapproachable	____:	____:	____:	____:	____:	____:	____	approachable
92.	pleasant	____:	____:	____:	____:	____:	____:	____	unpleasant
93.	trusting	____:	____:	____:	____:	____:	____:	____	suspicious
94.	incapable	____:	____:	____:	____:	____:	____:	____	capable
95.	tedious	____:	____:	____:	____:	____:	____:	____	fascinating
96.	friendly	____:	____:	____:	____:	____:	____:	____	unfriendly
97.	exciting	____:	____:	____:	____:	____:	____:	____	dull
98.	organized	____:	____:	____:	____:	____:	____:	____	disorganized
99.	unreliable	____:	____:	____:	____:	____:	____:	____	reliable
100.	unimaginative	____:	____:	____:	____:	____:	____:	____	imaginative
101.	impatient	____:	____:	____:	____:	____:	____:	____	patient
102.	polite	____:	____:	____:	____:	____:	____:	____	impolite

		A	B	C	D	E	F	G	
103.	colorful	___:	___:	___:	___:	___:	___:	___	colorless
104.	unintelligent	___:	___:	___:	___:	___:	___:	___	intelligent
105.	good	___:	___:	___:	___:	___:	___:	___	bad
106.	industrious	___:	___:	___:	___:	___:	___:	___	unindustrious
107.	boring	___:	___:	___:	___:	___:	___:	___	interesting
108.	dependable	___:	___:	___:	___:	___:	___:	___	undependable
109.	disinterested	___:	___:	___:	___:	___:	___:	___	interested
110.	inconsiderate	___:	___:	___:	___:	___:	___:	___	considerate

SCALE ITEMS BY INSTRUMENT/FORM

A	B	C	E		
					Integrative Orientation
3		3	3	Q3	Understand and appreciate their culture
6		6	6	Q7	Get to know them better
8		8	8	Q10	Meet greater variety of people
13		13	13	Q17	Interact socially with them
17		17	17	Q21	Get to know people with different perspectives
22		22	22	Q28	Establish genuine relationships
					Interest in Foreign Languages
25		26	25	Q33	Would like to learn many languages
26		31	29	Q34	Prefer sound track in English
27		37	32	Q36	Enjoy meeting FL others
28		38	33	Q39	Would get along in English
29		41	35	Q43	Wish could read press in many languages
30		45	38	Q49	Wish could speak several languages fluently
31		—	.	Q51	Studying FL not a pleasant experience
32		50	42	Q53	FL can help convey feelings and ideas
33		54	44	Q58	Most FLs sound like gibberish to me
34		82	59	Q62	Really have little interest in FLs
—		46	39	Q63	Will never study another FL
					Occupational
1		1	1	Q1	Get job I want in military
				Q6	Advantageous to military career
14		14	14	Q18	More attractive to future employers
16		16	16	Q20	Increase prospects with international firm
20		20	20	Q24	Candidate for interesting and exciting jobs
21		21	21	Q27	Help get job after military
				Q31	Useful for good jobs in future
10		10	10	Q13	Background needed to pursue career goals
					Educational
4		4	4	Q4	Make me better educated person
9		9	9	Q11	Help me earn college degree
12		12	12	Q16	Specialized training equivalent to college degree
15		15	15	Q19	Better and more useful training than via college
18		18	18	Q22	Make me more knowledgeable
				Q26	Help qualify for additional military training
23		23	23	Q30	Provide unique skill more quickly than college

A	B	C	E		
					Machiavellianism
2		2	2	Q2	Increase ability to influence others
5		5	5	Q5	Edge in competing with others
				Q8	Understand what they really want
7		7	7	Q9	Make me appear more cultured
				Q12	Prevent them from getting away with anything
11		11	11	Q14	Get more respect if know FL
				Q15	Important to know one's enemy
19		19	19	Q23	Protect interests when dealing with them
				Q25	More advantages over others
				Q29	Make good contacts
24		24	24	Q32	Contact important, powerful, etc. people

Class Anxiety

A	B	C	E		
	4	29	—	1.	It embarrasses me to volunteer answers in class.
	29	62	—	2.	It bothers me that the other students speak (x) in class better than I do.
	8	34	—	3.	I never feel quite sure of myself when I am speaking in class.
	32	65	—	4.	I often feel uncomfortable in class.
	39	72	—	5.	I often dread going to class.
	34	67	—	6.	I feel confident when active participation takes place in class.
	46	79	—	7.	I really can't understand people who get uptight about using (x) in class.
	16	47	—	8.	I do not get anxious when I have to respond in class.
	26	59	—	9.	I am generally relaxed in class.
	47	80	—	10.	I enjoy participating in class.

Use Anxiety

A	B	C	E		
	18	49	41	1.	When making a telephone call, I would get flustered if it were necessary to speak (x).
	9	35	30	2.	Making a hotel reservation in (x) would bother me.
	23	56	45	3.	I would feel uncomfortable speaking (x) in any real-world situation.
	36	69	52	4.	I am sure I would get nervous if I had to speak (x) to a sales clerk.

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A	B	C	E		
				Use Anxiety (continued)	
	12	40	34	5.	If ever I should run into a group of people speaking (x), I would feel relaxed in joining them.
	41	74	55	6.	I would feel comfortable speaking (x) in an informal gathering where both English and (x) speaking persons were present.
	3	28	27	7.	I would feel confident and relaxed if I had to ask street directions in (x).
	28	61	48	8.	I would feel calm and sure of myself if I had to order a meal in (x).
				Motivational Intensity	
	37	70	—	Q37	I don't bother checking corrected homework
	13	42	—	Q40	Always ask for help when need it
	1	25	—	Q41	Work on it every evening
	6	32	—	Q44	Approach homework randomly and unplanned
	33	66	—	Q45	Motivation at all-time low
	22	55	—	Q47	Seldom seek out cultural activities
	11	39	—	Q48	Ignore distractions when studying
	42	75	—	Q55	Try to understand all I see and hear
	20	52	—	Q56	Don't pay attention to feedback in class
	44	77	—	Q61	Really work hard to learn (FL)
				Desire to Learn Target Language	
	15	44	37	Q35	Have learned enough to not want more
	27	60	47	Q38	Wish had begun at early age
	25	58	—	Q42	Want just enough to get through course
	38	71	53	Q46	Desire to learn constantly increasing
	31	81	58	Q50	Would like to learn as much as possible
	7	33	—	Q52	Daydream about dropping out
	48	64	50	Q54	Have little desire to learn (x)
	19	51	—	Q57	Hope can take intermediate/advanced class
	14	43	36	Q59	Wish had never started
	5	30	28	Q60	Wish I were fluent in (x)
				Attitude Toward Target Language	
	2	27	26	1.	I am glad I have the opportunity to learn (x).
	21	53	43	2.	Most of things we learn in (x) are interesting.

A	B	C	E	
				Attitude Toward Target Language (continued)
	45	68	51	3. I really enjoy learning (x).
	30	63	49	4. I think studying (x) is boring.
	40	73	54	5. Learning (x) takes so long the attempt does not seem worthwhile.
	24	57	46	6. In all honesty, I would rather do almost anything other than study (x).
	43	76	56	7. I plan to continue my study of (x) after I complete this course.
	10	36	31	8. The satisfaction of learning (x) makes the effort worthwhile.
	35	78	57	9. If I had it to do over again, I would avoid studying (x).
	17	48	40	10. To be really honest, I hate (x).

A	B	C	E	
				Course as a Whole
	49	83	60	49. meaningful ___ meaningless
	50	84	61	50. enjoyable ___ unenjoyable
	51	85	62	51. monotonous ___ absorbing
	52	86	63	52. effortless ___ hard
	53	87	64	53. awful ___ nice
	54	88	65	54. interesting ___ boring
	55	89	66	55. good ___ bad
	56	90	67	56. simple ___ complicated
	57	91	68	57. disagreeable ___ agreeable
	58	92	69	58. fascinating ___ tedious
	59	93	70	59. worthless ___ valuable
	60	94	71	60. necessary ___ unnecessary
	61	95	72	61. appealing ___ unappealing
	62	96	73	62. useless ___ useful
	63	97	74	63. elementary ___ complex
	64	98	75	64. pleasurable ___ painful
	65	99	76	65. educational ___ noneducational
	66	100	77	66. unrewarding ___ rewarding
	67	101	78	67. difficult ___ easy
	68	102	79	68. satisfying ___ unsatisfying
	69	103	80	69. unimportant ___ important
	70	104	81	70. pleasant ___ unpleasant
	71	105	82	71. exciting ___ dull
	72	106	83	72. clear ___ confusing
	73	107	84	73. colorful ___ colorless

A	B	C	E		
				Course Materials	
74	108	85	74.	important __	unimportant
75	109	86	75.	meaningless __	meaningful
76	110	87	76.	dull __	stimulating
77	111	88	77.	interesting __	boring
78	112	89	78.	organized __	disorganized
79	113	90	79.	valuable __	worthless
80	114	91	80.	confusing __	coherent
81	115	92	81.	hard __	easy
82	116	93	82.	natural __	artificial
83	117	94	83.	irrelevant __	relevant
84	118	95	84.	clear __	unintelligible
85	119	96	85.	useful __	useless

A	B	C	E		
				Primary Instructors	
86	120	97	86.	efficient __	inefficient
87	121	98	87.	insensitive __	sensitive
88	122	99	88.	cheerful __	cheerless
89	123	100	89.	competent __	incompetent
90	124	101	90.	insincere __	sincere
91	125	102	91.	unapproachable __	approachable
92	126	103	92.	pleasant __	unpleasant
93	127	104	93.	trusting __	suspicious
94	128	105	94.	incapable __	capable
95	129	106	95.	tedious __	fascinating
96	130	107	96.	friendly __	unfriendly
97	131	108	97.	exciting __	dull
98	132	109	98.	organized __	disorganized
99	133	110	99.	unreliable __	reliable
100	134	111	100.	unimaginative __	imaginative
101	135	112	101.	impatient __	patient
102	136	113	102.	polite __	impolite
103	137	114	103.	colorful __	colorless
104	138	115	104.	unintelligent __	intelligent
105	139	116	105.	good __	bad
106	140	117	106.	industrious __	unindustrious
107	141	118	107.	boring __	interesing
108	142	119	108.	dependable __	undependable
109	143	120	109.	disinterested __	interested
110	144	121	110.	inconsiderate __	considerate

PERSONAL OUTLOOK INVENTORY

Listed below are statements which allow you to express your interests and
attitudes on a number of topics. None of these statements can in any way be
described as representing anything good or bad. Please indicate how well each
statement describes what you typically do or how you typically feel by using
the following scale.

Very Strongly Agree	Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree	Very Strongly Disagree
A	B	C	D	E	F	G

1. I prefer fishing to tennis.

2. When I hear of, or read about, a new idea that sounds interesting, I
   typically try to think about how I can use it.

3. I think it's important to find out about my instructor's opinions before
   telling about my own opinions in his (her) class.

4. It would be accurate to say that I really enjoy toying with ideas.

5. It doesn't make much difference to me if my grade in a course is to be
   based mostly on a term paper rather than multiple choice tests.

6. I would rather watch a heated debate on a controversial topic than a
   popular music program.

7. I would have more fun joining in a good debate than going fishing.

8. When it matters to me, I can usually figure out how to win an argument.

9. I would rather win an argument because my style of speaking (voice
   quality, word choice, etc.) was skillful, than because my arguments were
   logical.

10. If given a choice, I would take a course in the use of logic rather than a
    course in history or sports.

11. I think that courses in mathematics are basically a waste of limited time.

12. Most courses in the sciences, like physics and chemistry, are easy enough
    if you take the time to study.

13. Most teachers use uncommon technical terms just to make their classes
    appear difficult and their speech impressive rather than to help students
    to understand.

14. I think I have as much mental ability as most of my teachers.

Very Strongly Agree	Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree	Very Strongly Disagree
A	B	C	D	E	F	G

15. I don't like teachers who make you guess what their opinion is; I think the teacher should tell exactly what he believes.

16. I get annoyed when people use words I don't know.

17. If I hear or read a new word, and can't seem to get its meaning, then I make a point of finding out what it means.

18. I think it's best to rely on advice from my parents or friends when I'm not sure of the right thing to do.

19. I would rather take a guided vacation tour than take the trouble to work through the maps.

20. When I read books, I rarely check to see if the ideas presented are logically consistent.

21. I think that a collection of people working together in a group would almost always develop a better solution to a complex problem than any individual, regardless of his capabilities.

22. The most complicated intellectual problems are the most interesting to work out.

23. Purely mental games, like chess, usually bore me.

24. If I suspected that one of my instructors made a logical or mathematical error in working on a problem in class, I would politely point out his error.

25. Overall, entertainers, athletes, actors, and musicians have added more to mankind's happiness than scientists.

26. I would rather be a great actor, or actress, than a great scientist.

27. When I don't understand an instructor's explanation of a topic in class, I usually let it go and don't ask for another explanation.

28. If I disagree with an instructor's answer for a multiple choice test, I would politely, but definitely, challenge the answer.

29. I believe that too much study is required for most school work.

30. In general, I think most manuals are much too hard to read.

31. I would much rather have an instructor give me a specific assignment than have to choose my own topic.

APPENDIX D: LANGUAGE SKILLS RATINGS

INTERAGENCY LANGUAGE ROUNDTABLE
LANGUAGE SKILL LEVEL DESCRIPTIONS
LISTENING

Preface

The following proficiency level descriptions characterize comprehension of the spoken language. Each of the six "base levels" (coded 00, 10, 20, 30, 40, and 50) implies control of any previous "base level's" functions and accuracy. The "plus level" designation (coded 06, 16, 26, etc.) will be assigned when proficiency substantially exceeds one base skill level and does not fully meet the criteria for the next "base level." The "plus level" descriptions are therefore supplementary to the "base level" descriptions.

A skill level is assigned to a person through an authorized language examination. Examiners assign a level on a variety of performance criteria exemplified in the descriptive statements. Therefore, the examples given here illustrate, but do not exhaustively describe, either the skills a person may possess or situations in which he/she may function effectively.

Statements describing accuracy refer to typical stages in the development of competence in the most commonly taught languages in formal training programs. In other languages, emerging competence parallels these characterizations, but often with different details.

Unless otherwise specified, the term "native listener" refers to native speakers and listeners of a standard dialect.

"Well-educated," in the context of these proficiency descriptions, does not necessarily imply formal higher education. However, in cultures where formal higher education is common, the language-use abilities of persons who have had such education is considered the standard. That is, such a person meets contemporary expectations for the formal, careful style of the language, as well as a range of less formal varieties of the language.

Listening 0 (No Proficiency)

No practical understanding of the spoken language. Understanding is limited to occasional isolated words with essentially no ability to comprehend communication. (Has been coded L-0 in some nonautomated applications.) [Data Code 00]

Listening 0+ (Memorized Proficiency)

Sufficient comprehension to understand a number of memorized utterances in areas of immediate needs. Slight increase in utterance length understood but requires frequent long pauses between understood phrases and repeated requests on the listener's part for repetition. Understands with reasonable accuracy only when this involves short memorized utterances or formulae. Utterances understood are relatively short in length. Misunderstandings arise due to ignoring or inaccurately hearing sounds or word endings (both inflectional and non-inflectional), distorting the original meaning. Can understand only with difficulty even such people as teachers who are used to speaking with non-native speakers. Can understand best those statements where context strongly supports the utterance's meaning. Gets some main ideas. (Has been coded L-0+ in some nonautomated applications.) [Data Code 06]

Listening 1 (Elementary Proficiency)

Sufficient comprehension to understand utterances about basic survival needs and minimum courtesy and travel requirements. In areas of immediate need or on very familiar topics, can understand simple questions and answers, simple statements and very simple face-to-face conversations in a standard dialect. These must often be delivered more clearly than normal at a rate slower than normal, with frequent repetitions or paraphrase (that is, by a native used to dealing with foreigners). Once learned, these sentences can be varied for similar level vocabulary and grammar and still be understood. In the majority of utterances, misunderstandings arise due to overlooked or misunderstood syntax and other grammatical clues. Comprehension vocabulary inadequate to understand anything but the most elementary needs. Strong interference from the candidate's native language occurs. Little precision in the information understood owing to the tentative state of passive grammar and lack of vocabulary. Comprehension areas include basic needs such as meals, lodging, transportation, time and simple directions (including both route instructions and orders from customs officials, policemen, etc.) Understands main ideas. (Has been coded L-1 in some nonautomated applications.) [Data Code 10]

Listening 1+ (Elementary Proficiency, Plus)

Sufficient comprehension to understand short conversations about all survival needs and limited social demands. Developing flexibility evident in understanding into a range of circumstances

F-5

beyond immediate survival needs. Shows spontaneity in understanding by speed, although consistency of understanding uneven. Limited vocabulary range necessitates repetition for understanding. Understands more common time forms and most question forms, some word order patterns, but miscommunication still occurs with more complex patterns. Cannot sustain understanding of coherent structures in longer utterances or in unfamiliar situations. Understanding of descriptions and the giving of precise information is limited. Aware of basic cohesive features, e.g., pronouns, verb inflections, but many are unreliably understood, especially if less immediate in reference. Understanding is largely limited to a series of short, discrete utterances. Still has to ask for utterances to be repeated. Some ability to understand facts. (Has been coded L-1+ in some nonautomated applications.) [Data Code 16]

Listening 2 (Limited Working Proficiency)

Sufficient comprehension to understand conversations on routine social demands and limited job requirements. Able to understand face-to-face speech in a standard dialect, delivered at a normal rate with some repetition and rewording, by a native speaker not used to dealing with foreigners, about everyday topics, common personal and family news, well-known current events, and routine office matters through descriptions and narration about current, past and future events; can follow essential points of discussion or speech at an elementary level on topics in his/her special professional field. Only understands occasional words and phrases of statements made in unfavorable conditions, for example through loudspeakers outdoors. Understands factual content. Native language causes less interference in listening comprehension. Able to understand facts, i.e., the lines but not between or beyond the lines. (Has been coded L-2 in some nonautomated applications.) [Data Code 20]

Listening 2+ (Limited Working Proficiency, Plus)

Sufficient comprehension to understand most routine social demands and most conversations on work requirements as well as some discussions on concrete topics related to particular interests and special fields of competence. Often shows remarkable ability and ease of understanding, but under tension or pressure may break down. Candidate may display weakness or deficiency due to inadequate vocabulary base or less than secure knowledge of grammar and syntax. Normally understands general vocabulary with some hesitant understanding of everyday vocabulary still evident. Can sometimes detect emotional

F-6

overtones. Some ability to understand implications. (Has been coded L-2+ in some nonautomated applications.) [Data Code 26]

Listening 3 (General Professional Proficiency)

Able to understand the essentials of all speech in a standard dialect including technical discussions within a special field. Has effective understanding of face-to-face speech, delivered with normal clarity and speed in a standard dialect, on general topics and areas of special interest; understands hypothesizing and supported opinions. Has broad enough vocabulary that rarely has to ask for paraphrasing or explanation. Can follow accurately the essentials of conversations between educated native speakers, reasonably clear telephone calls, radio broadcasts, news stories similar to wire service reports, oral reports, some oral technical reports and public addresses on non-technical subjects; can understand without difficulty all forms of standard speech concerning a special professional field. Does not understand native speakers if they speak very quickly or use some slang or dialect. Can often detect emotional overtones. Can understand implications. (Has been coded L-3 in some nonautomated applications.) [Data Code 30]

Listening 3+ (General Professional Proficiency, Plus)

Comprehends most of the content and intent of a variety of forms and styles of speech pertinent to professional needs, as well as general topics and social conversation. Ability to comprehend many sociolinguistic and cultural references. However, may miss some subtleties and nuances. Increased ability to comprehend unusually complex structures in lengthy utterances and to comprehend many distinctions in language tailored for different audiences. Increased ability to understand native speakers talking quickly, using nonstandard dialect or slang; however, comprehension not complete. Can discern some relationships among sophisticated listening materials in the context of broad experience. Can follow some unpredictable turns of thought readily in, for example, informal and formal speeches covering editorial, conjectural and literary material in subject matter areas directed to the general listener. (Has been coded L-3+ in some nonautomated applications.) [Data Code 36]

Listening 4 (Advanced Professional Proficiency)

Able to understand all forms and styles of speech pertinent to professional needs. Able to understand fully all speech with extensive and precise vocabulary, subtleties and nuances in all standard dialects on any subject relevant to

professional needs within the range of his/her experience, including social conversations; all intelligible broadcasts and telephone calls; and many kinds of technical discussions and discourse. Understands language specifically tailored (including persuasion, representation, counseling, and negotiating) to different audiences. Able to understand the essentials of speech in some non-standard dialects. Has difficulty in understanding extreme dialect and slang, also in understanding speech in unfavorable conditions, for example through bad loudspeakers outdoors. Can discern relationships among sophisticated listening materials in the context of broad experience. Can follow unpredictable turns of thought readily in, for example, informal and formal speeches covering editorial, conjectural, and literary material in any subject matter directed to the general listener. (Has been coded L-4 in some nonautomated applications.) [Data Code 40]

Listening 4+ (Advanced Professional Proficiency, Plus)

Increased ability to understand extremely difficult and abstract speech as well as ability to understand all forms and styles of speech

pertinent to professional needs, including social conversations. Increased ability to comprehend native speakers using extreme nonstandard dialects and slang, as well as to understand speech in unfavorable conditions. Strong sensitivity to sociolinguistic and cultural references. Accuracy is close to that of the well-educated native listener but still not equivalent.(Has been coded L-4+ in some nonautomated applications.) [Data Code 46]

Listening 5 (Functionally Native Proficiency)

Comprehension equivalent to that of the well-educated native listener. Able to understand fully all forms and styles of speech intelligible to the well-educated native listener, including a number of regional and illiterate dialects, highly colloquial speech and conversations and discourse distorted by marked interference from other noise. Able to understand how natives think as they create discourse. Able to understand extremely difficult and abstract speech. (Has been coded L-5 in some nonautomated applications) [Data Code 50]

Intercorrelations of Three Skill Interviews with
Reading and Listening Proficiency Tests
Forms C and D

	OISP	OILC	OIRC	PTLCC	PTRCC	PTLCD	PTRCD
OISP	1.0000 (110)	0.8241 (110)	0.8132 (110)	0.5671 (74)	0.4843 (73)	0.4249 (64)	0.4247 (63)
OILC	0.8241 (110)	1.0000 (140)	0.9399 (140)	0.8005 (104)	0.7938 (103)	0.8245 (94)	0.8200 (93)
OIRC	0.8132 (110)	0.9399 (140)	1.0000 (140)	0.8238 (104)	0.8261 (103)	0.8616 (94)	0.8765 (93)
PTLCC	0.5671 (74)	0.8005 (104)	0.8238 (104)	1.0000 (104)	0.8972 (102)	0.8923 (59)	0.8766 (59)
PTRCC	0.4843 (73)	0.7938 (103)	0.8261 (103)	0.8972 (102)	1.0000 (103)	0.9041 (59)	0.9196 (57)
PTLCD	0.4249 (64)	0.8245 (94)	0.8616 (94)	0.8923 (59)	0.9041 (59)	1.0000 (100)	0.9077 (96)
PTRCD	0.4247 (63)	0.8200 (93)	0.8765 (93)	0.8766 (59)	0.9196 (57)	0.9077 (96)	1.0000 (98)

Source File 7 Oct 86

RUSSIAN DLPT III TEST STATISTICS

	N	Mean	Std Dev	KR-20	SEM
RCC	73	78.29	8.07	0.8233	3.39
RCD	68	78.53	8.92	0.8456	3.51
LCA	72	75.68	9.87	0.8676	3.59
LCB	97	73.12	10.52	0.8801	3.64
LCC	74	74.54	7.74	0.7841	3.60
LCD	70	81.16	8.04	0.8218	3.39

APPENDIX E: LSCP DATA FREQUENCIES & STATISTICS

DLICON_L DLPT-Listen @ DLI (Converted Score)

```
30.000 ▬ 1
31.000 ▬ 2
32.000 ▬▬▬▬▬▬ 15
33.000 ▬▬▬▬▬▬▬▬▬ 25
34.000 ▬▬▬▬▬▬▬▬▬▬▬▬▬ 40
35.000 ▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 46
36.000 ▬▬▬▬▬▬▬▬▬▬ 27
37.000 ▬▬▬▬▬▬▬▬▬▬▬ 30
38.000 ▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 64
39.000 ▬▬▬▬▬▬▬▬▬ 26
40.000 ▬▬▬▬▬▬▬▬▬ 26
41.000 ▬▬▬▬▬▬▬▬▬ 25
42.000 ▬▬ 3
43.000 ▬▬▬▬▬▬▬▬▬ 25
44.000 ▬▬▬▬▬▬▬▬ 23
45.000 ▬▬▬▬▬▬ 17
46.000 ▬▬▬▬▬ 13
47.000 ▬▬▬▬▬ 13
49.000 ▬▬▬▬ 10
50.000 ▬▬▬ 7
51.000 ▬▬ 5
52.000 ▬▬▬ 8
53.000 ▬▬ 5
54.000 ▬ 2
55.000 ▬ 1
57.000 ▬ 1
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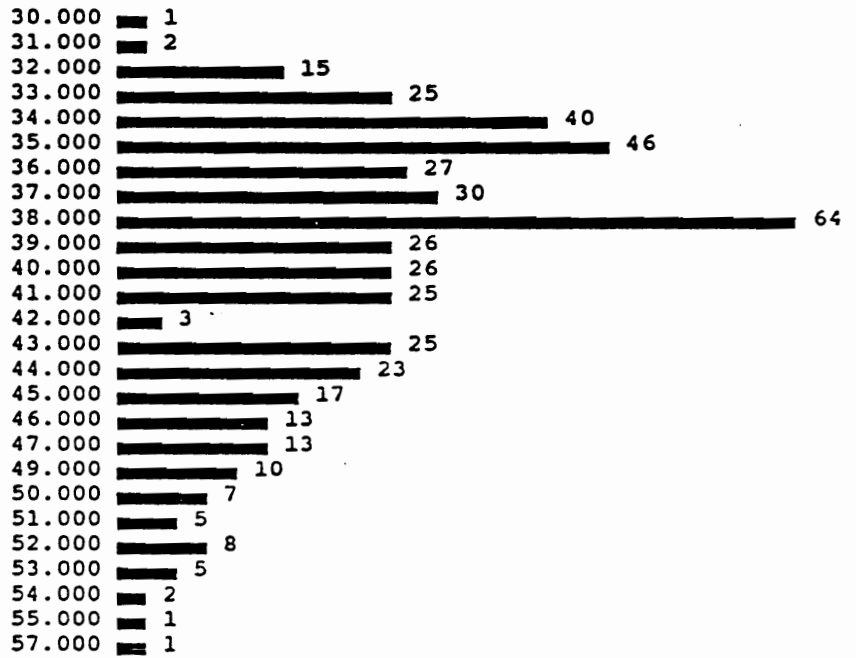
Mean	39.441	Median	38.000	Mode	38.000
Std Dev	5.333	Variance	28.443	Kurtosis	.073
Skewness	.821	Range	27.000	Minimum	30.000
Maximum	57.000				

Valid Cases	460	Missing Cases	222

AITCON_L DLPT-Listen @ AIT (Converted Score)

```
  .000 ████████████ 12
19.000 ██ 1
22.000 ██ 1
23.000 ██ 1
24.000 ██ 1
25.000 ███ 2
26.000 ██ 1
27.000 ██ 1
28.000 ████ 4
29.000 ███ 3
30.000 ███████ 8
31.000 ███████ 8
32.000 ██████████████████████████ 31
33.000 ████████████████████████████████████ 44
34.000 ██████████████████████ 27
35.000 ███████████████████████ 28
36.000 ███████████████████████ 28
37.000 ██████████████████ 22
38.000 █████████████████████ 26
39.000 █████████████ 15
40.000 ████████████████ 19
41.000 ████████████ 14
42.000 ███ 2
43.000 ███████████ 13
44.000 ███████ 8
45.000 ██████ 7
46.000 ████████ 9
47.000 █████ 6
48.000 ██ 1
49.000 █████ 5
50.000 █████ 5
51.000 ███ 3
52.000 ██ 1
53.000 ██ 1
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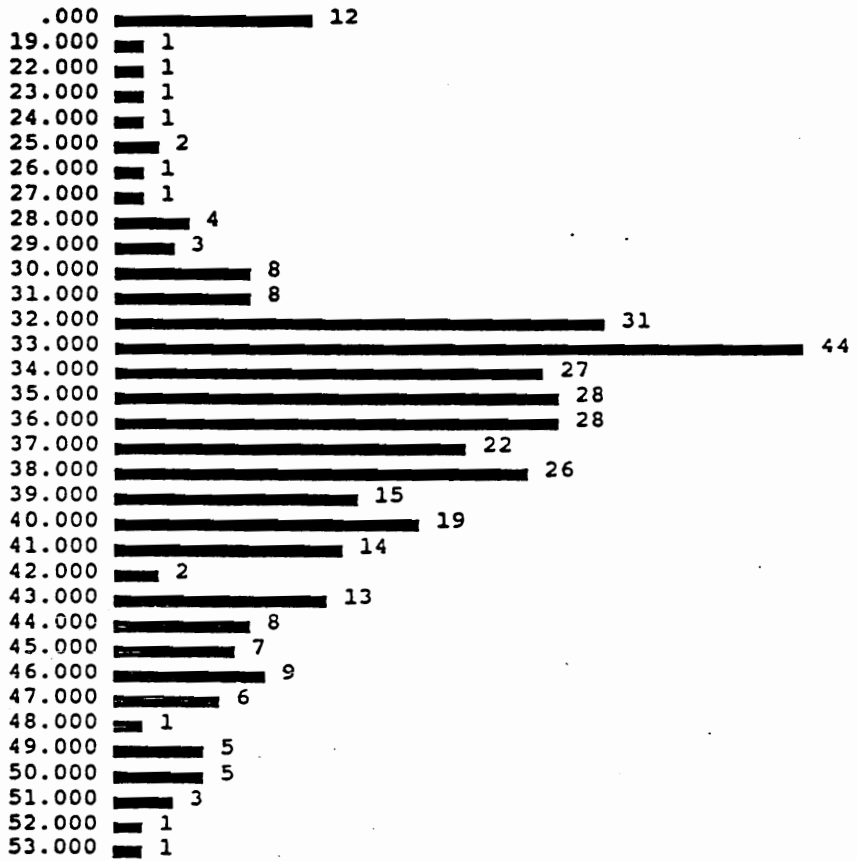
Mean	35.631	Median	36.000	Mode	33.000
Std Dev	8.560	Variance	73.281	Kurtosis	7.935
Skewness	-2.137	Range	53.000	Minimum	.000
Maximum	53.000				

Valid Cases	358	Missing Cases	324

223

```
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

DLPT2L      DLPT-Listening @ DLI (Level Score)
                   1.0  ████████████████████████████ 129
                   1.6  ████████████████████████████████ 147
                  .2.0  ████████████████████████████ 119
                   2.6  ███████████ 36
                   3.0  █████████ 29

DLPT2L      DLPT-Listening @ DLI (Level Score)

Mean            1.702    Median       1.600    Mode        1.600
Std Dev          .578    Variance      .335    Skewness     .543
Range           2.000    Minimum      1.000    Maximum     3.000


Valid Cases      460     Missing Cases     222

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

AL    ·     DLPT-Listen @ AIT (Level Score)
                    .0  ███ 5
                    .6  ████ 11
                   1.0  ████████████████████████████████ 146
                   1.6  ████████████████████ 94
                   2.0  ██████████████ 62
                   2.6  ████████ 20
                   3.0  █████ 10

Mean            1.463    Median       1.600    Mode        1.000
Std Dev          .586    Variance      .344    Skewness     .553
Range           3.000    Minimum       .000    Maximum     3.000


Valid Cases      348     Missing Cases     334
```

224

AGT　　　　ASVAB GT SCORE COGNITIVE ABILITY

```
 75 ▬ 1
 77 ▬ 1
 88 ▬ 1
 93 ▬ 2
 94 ▬ 1
 96 ▬ 2
 97 ▬▬ 4
 98 ▬ 1
 99 ▬ 1
100 ▬ 1
102 ▬ 3
103 ▬ 2
104 ▬▬ 4
105 ▬▬ 4
107 ▬ 2
108 ▬▬ 5
109 ▬▬▬▬ 11
110 ▬▬ 4
111 ▬▬▬ 8
112 ▬ 2
113 ▬▬ 5
114 ▬▬▬▬▬▬ 19
115 ▬▬▬▬▬▬ 18
116 ▬▬▬▬▬▬▬ 23
117 ▬▬▬▬▬▬▬ 23
118 ▬▬▬▬▬▬▬ 22
120 ▬▬▬▬▬▬ 21
121 ▬▬▬▬▬▬▬▬ 28
122 ▬▬▬▬▬▬▬▬▬▬ 36
123 ▬▬▬▬▬▬▬▬▬▬ 37
124 ▬▬▬▬▬▬▬▬▬▬ 36
125 ▬▬▬▬▬▬▬▬▬▬▬▬ 48
126 ▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 69
127 ▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 57
128 ▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 65
129 ▬▬▬▬▬▬▬ 25
130 ▬▬▬▬▬ 14
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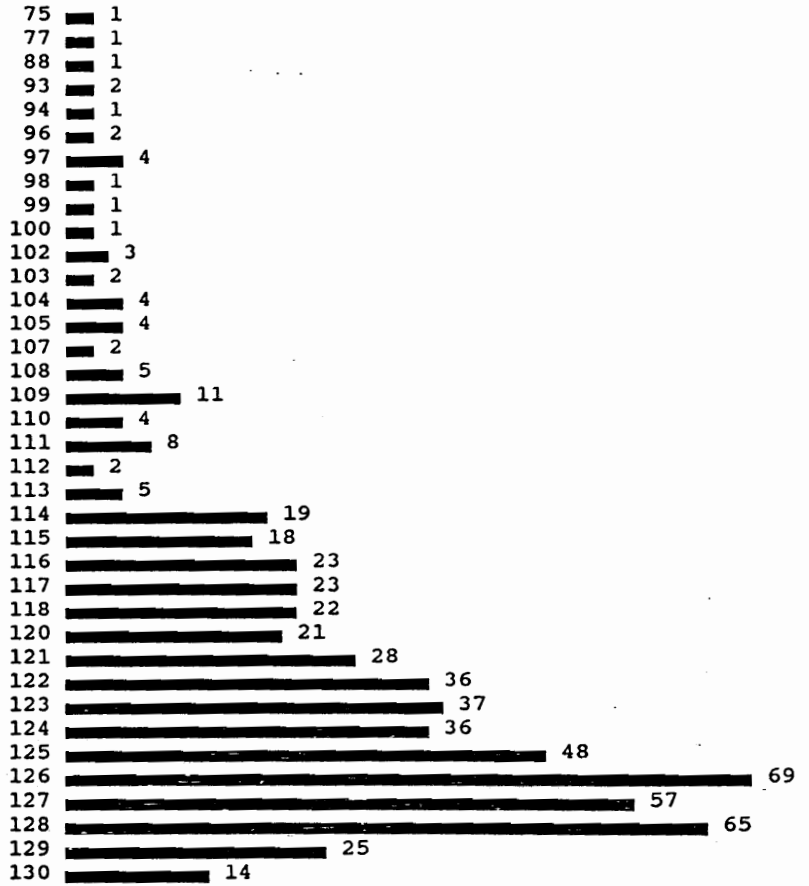
Mean	121.483	Median	124.000	Mode	126.000
Std Dev	7.553	Variance	57.050	Skewness	-1.988
Range	55.000	Minimum	75.000	Maximum	130.000

Valid Cases	606	Missing Cases	76

225

DLAB   LANGUAGE APTITUDE
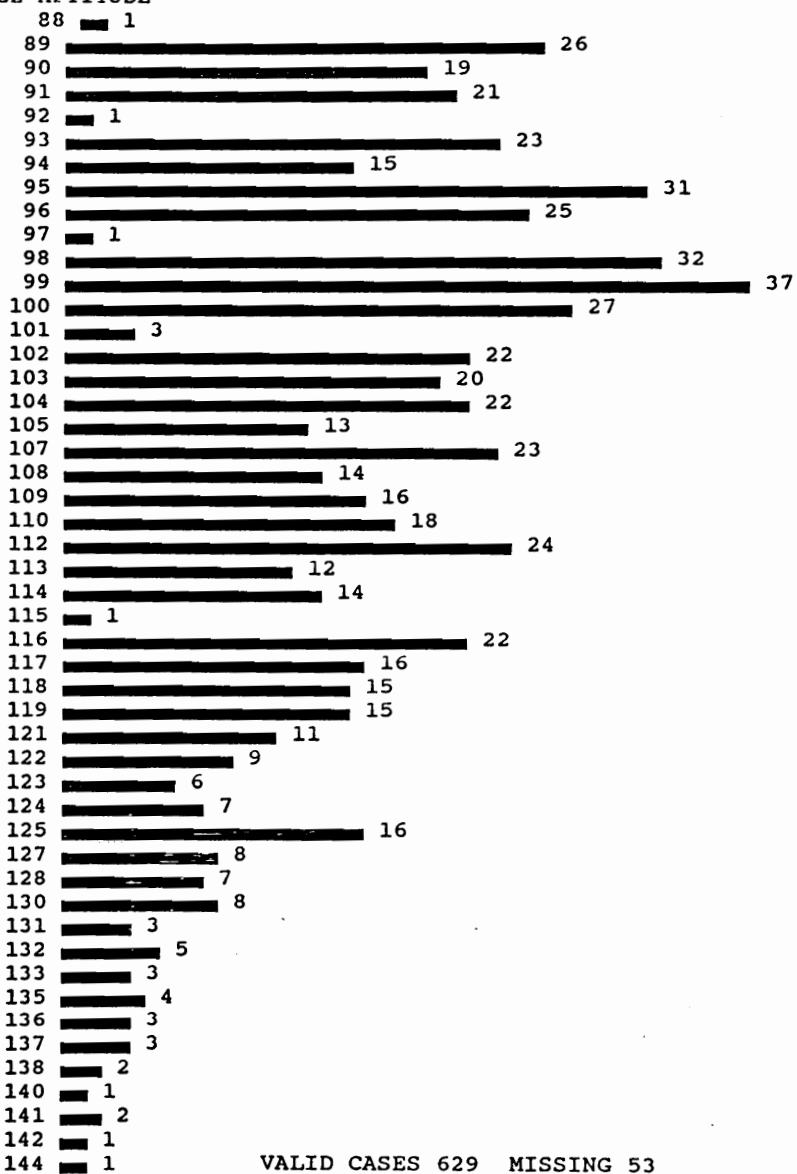
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 88 ■ 1
 89 ████████████████████████████ 26
 90 ████████████████████ 19
 91 ██████████████████████ 21
 92 ■ 1
 93 ████████████████████████ 23
 94 ████████████████ 15
 95 █████████████████████████████████ 31
 96 ██████████████████████████ 25
 97 ■ 1
 98 ██████████████████████████████████ 32
 99 ███████████████████████████████████████ 37
100 █████████████████████████████ 27
101 ███ 3
102 ███████████████████████ 22
103 █████████████████████ 20
104 ███████████████████████ 22
105 ██████████████ 13
107 ████████████████████████ 23
108 ███████████████ 14
109 █████████████████ 16
110 ███████████████████ 18
112 █████████████████████████ 24
113 █████████████ 12
114 ███████████████ 14
115 ■ 1
116 ███████████████████████ 22
117 █████████████████ 16
118 ████████████████ 15
119 ████████████████ 15
121 ████████████ 11
122 ██████████ 9
123 ███████ 6
124 ████████ 7
125 █████████████████ 16
127 █████████ 8
128 ████████ 7
130 █████████ 8
131 ███ 3
132 █████ 5
133 ███ 3
135 ████ 4
136 ███ 3
137 ███ 3
138 ██ 2
140 ■ 1
141 ██ 2
142 ■ 1
144 ■ 1
```
VALID CASES 629   MISSING 53

Mean	106.642	Median	104.000	Mode	99.000
Std Dev	12.487	Variance	155.921	Skewness	.602
Range	56.000	Minimum	88.000	Maximum	144.000

```
GEF        FIELD INDEPENDENCE
                    0 ▄▄ 4
                    1 ▄▄▄ 8
                    2 ▄▄▄ 6
                    3 ▄▄ 5
                    4 ▄▄▄▄ 17
                    5 ▄▄▄▄ 12
                    6 ▄▄▄▄▄ 20
                    7 ▄▄▄▄▄ 20
                    8 ▄▄▄▄▄ 24
                    9 ▄▄▄▄▄▄ 29
                   10 ▄▄▄▄▄▄▄ 34
                   11 ▄▄▄▄▄▄▄ 32
                   12 ▄▄▄▄▄▄▄▄ 39
                   13 ▄▄▄▄▄▄▄▄▄ 47
                   14 ▄▄▄▄▄▄▄▄▄ 51
                   15 ▄▄▄▄▄▄▄▄▄ 47
                   16 ▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄ 87
                   17 ▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄ 101
                   18 ▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄ 99
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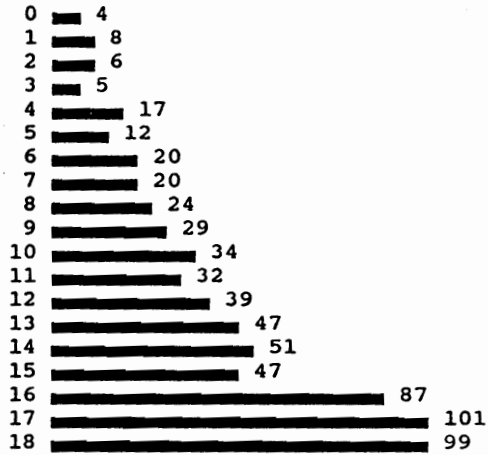
Mean	13.133	Median	14.000	Mode	17.000
Std Dev	4.458	Variance	19.878	Skewness	-.917
Range	18.000	Minimum	.000	Maximum	18.000

Valid Cases   682   Missing Cases   0

FE   FLANAGAN EXPRESSION VERBAL ABILITY

```
 6  ▬ 3
 7  ▬ 3
 8  ▬▬ 6
 9  ▬▬ 8
10  ▬▬▬ 11
11  ▬▬▬▬▬▬▬ 24
12  ▬▬▬▬▬▬▬▬ 27
13  ▬▬▬▬▬▬▬▬▬ 32
14  ▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 53
15  ▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 53
16  ▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 58
17  ▬▬▬▬▬▬▬▬▬▬▬▬▬ 50
18  ▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 64
19  ▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 63
20  ▬▬▬▬▬▬▬▬▬▬▬▬ 46
21  ▬▬▬▬▬▬▬▬▬▬▬▬▬ 51
22  ▬▬▬▬▬▬▬▬▬▬ 36
23  ▬▬▬▬▬▬▬▬ 29
24  ▬▬▬▬▬▬ 21
25  ▬▬▬▬▬▬ 20
26  ▬▬▬▬ 14
27  ▬▬ 4
28  ▬ 3
29  ▬ 2
30  ▬ 1
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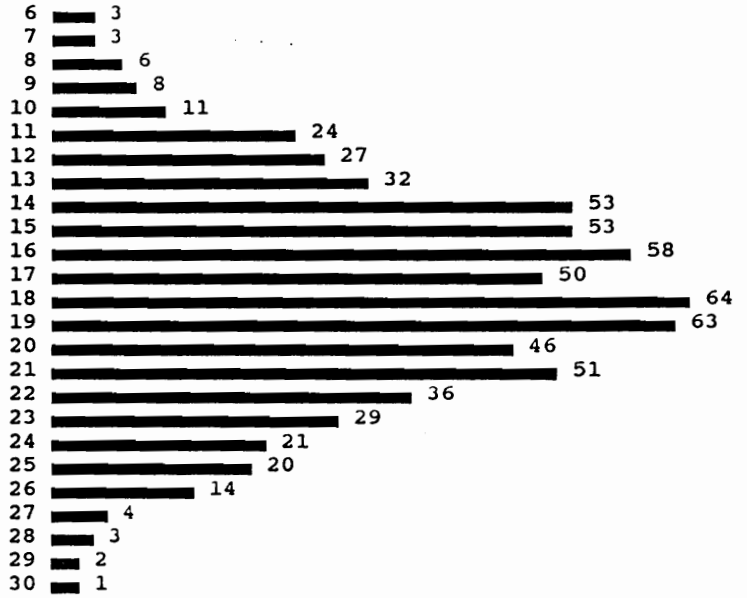
Mean	17.647	Median	18.000	Mode	18.000
Std Dev	4.347	Variance	18.893	Skewness	.004
Range	24.000	Minimum	6.000	Maximum	30.000

Valid Cases	682	Missing Cases	0

FM   FLANAGAN MEMORY

```
 3 ███ 3
 5 ███ 4
 6 ███ 4
 7 ████████ 11
 8 █████████ 13
 9 ██████████████ 21
10 █████████████ 19
11 ████████████████████ 29
12 █████████████████████████ 36
13 █████████████████ 24
14 ███████████████████████ 33
15 ██████████████████████████ 37
16 ██████████████████ 26
17 ██████████████████████████ 37
18 ██████████████████████ 32
19 ██████████████████████████ 37
20 █████████████████████████ 35
21 ██████████████████ 26
22 ██████████████ 21
23 ████████████ 17
24 █████████████ 19
25 █████████████████ 24
26 ███████████████ 22
27 ██████████████ 20
28 █████████ 13
29 ███████████ 16
30 █████████ 13
31 ████████ 12
32 ██████████ 15
33 ██████ 9
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37 ███ 5
38 ████ 6
39 ████ 6
40 ████████ 11
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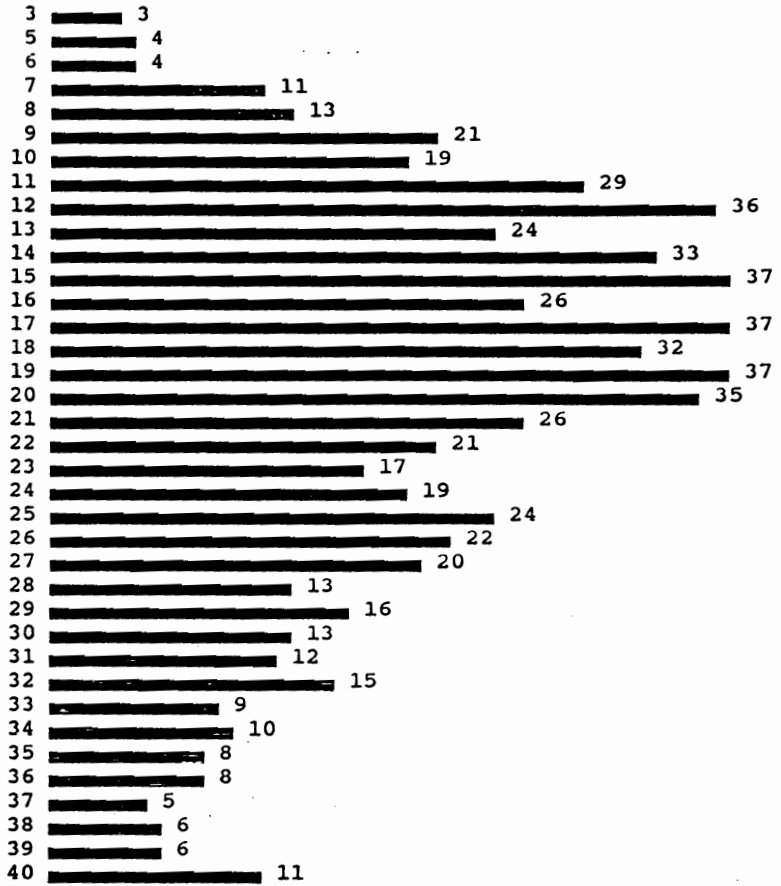
Mean	20.009	Median	19.000	Mode	15.000
Std Dev	8.294	Variance	68.784	Skewness	.488
Range	37.000	Minimum	3.000	Maximum	40.000

Valid Cases   682   Missing Cases   0

WG   WATSON GLAZER   CRITICAL THINKING

```
26  ▇ 2
32  ▇▇ 4
34  ▇ 2
35  ▇ 2
36  ▇ 3
37  ▇ 2
38  ▇▇ 4
39  ▇▇▇ 6
40  ▇▇▇ 6
41  ▇ 2
42  ▇▇▇ 5
43  ▇▇▇▇▇ 9
44  ▇▇▇▇▇▇▇▇ 15
45  ▇▇▇▇ 8
46  ▇▇▇▇▇ 9
47  ▇▇▇▇▇▇▇ 13
48  ▇▇▇▇▇▇▇▇ 15
49  ▇▇▇▇▇▇▇▇▇ 16
50  ▇▇▇▇▇▇▇ 13
51  ▇▇▇▇▇▇▇ 14
52  ▇▇▇▇▇▇▇▇▇▇▇▇▇▇▇▇▇ 30
53  ▇▇▇▇▇ 10
54  ▇▇▇▇▇▇▇▇▇▇▇▇▇ 24
55  ▇▇▇▇▇▇▇▇▇▇▇▇▇ 24
56  ▇▇▇▇▇▇▇▇▇▇▇▇▇▇▇▇ 30
57  ▇▇▇▇▇▇▇▇▇▇▇▇▇▇▇▇ 30
58  ▇▇▇▇▇▇▇▇▇▇▇▇▇▇▇ 27
59  ▇▇▇▇▇▇▇▇▇ 17
60  ▇▇▇▇▇▇▇▇▇▇▇▇▇▇ 26
61  ▇▇▇▇▇▇▇▇▇▇▇▇▇ 24
62  ▇▇▇▇▇▇▇▇▇▇▇▇▇▇▇ 28
63  ▇▇▇▇▇▇▇▇▇▇▇▇▇▇▇▇ 31
64  ▇▇▇▇▇▇▇▇▇▇▇▇ 23
65  ▇▇▇▇▇▇▇▇▇▇▇▇▇▇▇▇▇▇ 33
66  ▇▇▇▇▇▇▇▇▇▇▇▇ 23
67  ▇▇▇▇▇▇▇▇▇▇▇ 22
68  ▇▇▇▇▇▇▇▇▇▇▇ 22
69  ▇▇▇▇▇▇▇▇▇▇▇ 22
70  ▇▇▇▇▇▇▇▇▇▇▇▇▇ 25
71  ▇▇▇▇▇▇▇▇▇ 18
72  ▇▇▇▇▇▇▇ 14
73  ▇▇▇▇▇▇ 12
74  ▇▇▇▇ 8
75  ▇▇▇ 7
76  ▇ 1
77  ▇ 1
```
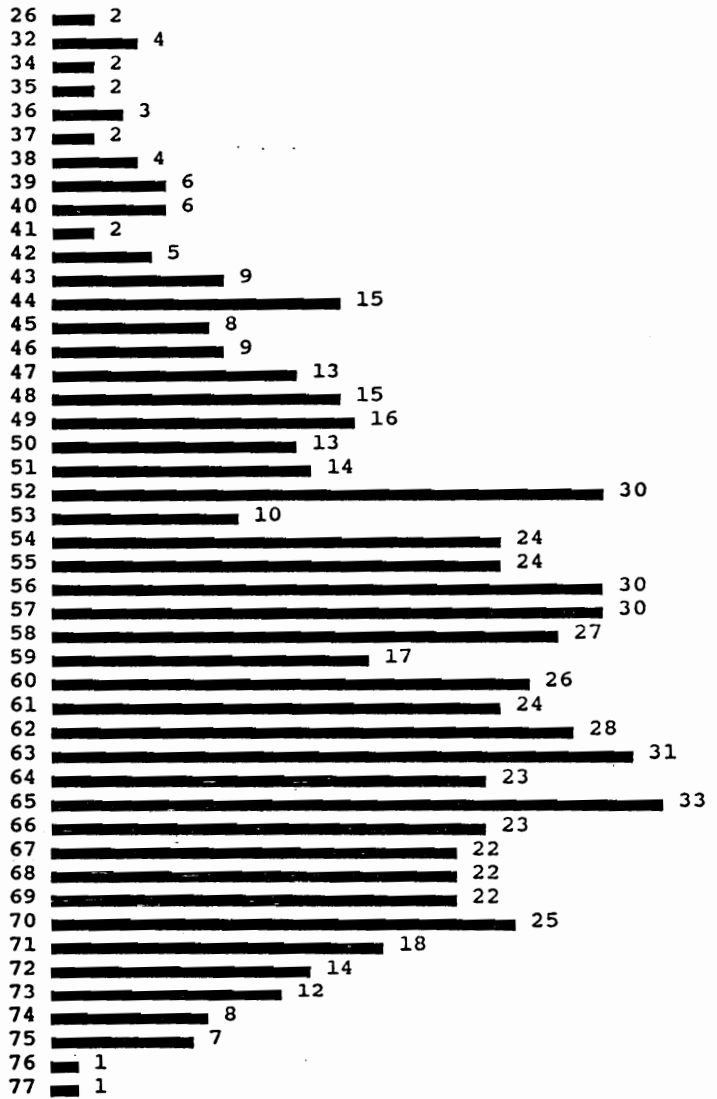
Mean	58.506	Median	59.000	Mode	65.000
Std Dev	9.482	Variance	89.916	Skewness	-.512
Range	.51.000	Minimum	26.000	Maximum	77.000
Valid Cases	682	Missing Cases	0		

230

```
CPIS1      EMPATHY
                  3  ▬ 1
                  9  ▬ 1
                 10  ▬ 1
                 11  ▬ 1
                 12  ▬ 3
                 13  ▬▬▬▬ 9
                 14  ▬▬▬ 6
                 14  ▬ 1
                 15  ▬▬▬ 8
                 15  ▬ 2
                 16  ▬▬▬▬▬▬▬▬▬▬▬▬ 25
                 17  ▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 36
                 17  ▬ 1
                 18  ▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 32
                 19  ▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 53
                 20  ▬ 1
                 20  ▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 47
                 20  ▬ 1
                 21  ▬▬ 4
                 21  ▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 69
                 22  ▬ 1
                 22  ▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 73
                 22  ▬ 1
                 23  ▬ 1
                 23  ▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 56
                 23  ▬ 1
                 23  ▬ 1
                 24  ▬ 1
                 24  ▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 51
                 25  ▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 37
                 25  ▬ 1
                 26  ▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 53
                 27  ▬▬▬▬▬▬▬▬▬▬▬▬▬ 31
                 28  ▬▬▬▬▬▬▬▬▬▬▬ 28
                 29  ▬ 1
                 29  ▬▬▬▬▬▬▬▬ 20
                 30  ▬▬▬▬▬ 12
                 31  ▬▬▬ 6
                 32  ▬ 2
```
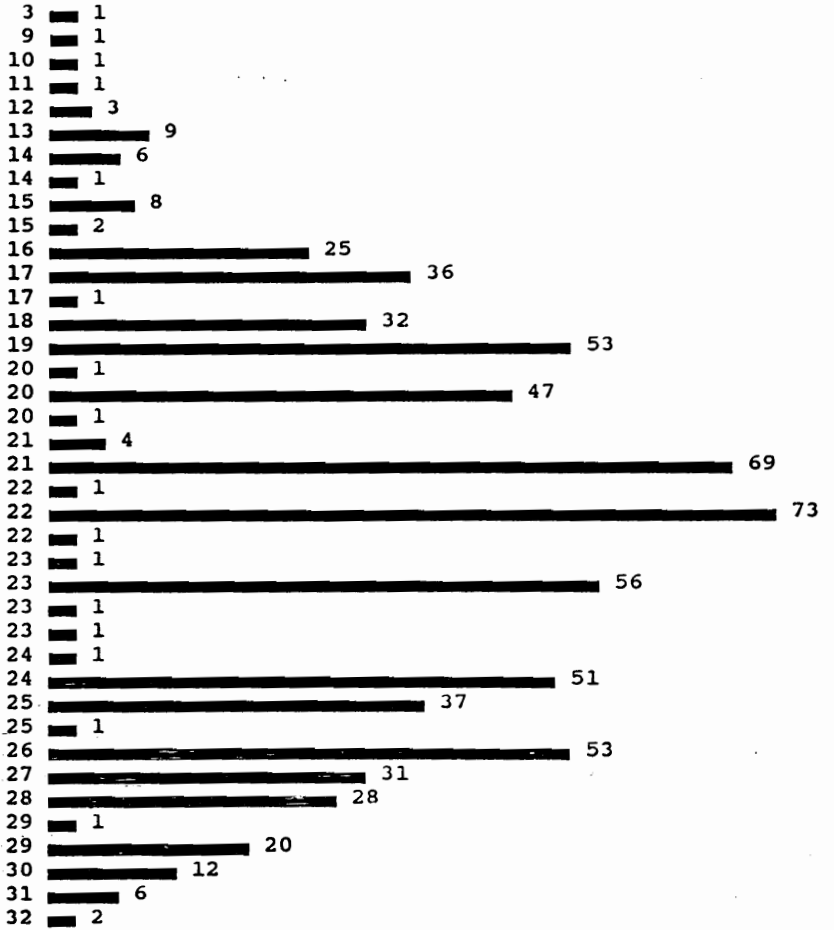
Mean	22.064	Median	22.000	Mode	22.000
Std Dev	4.128	Variance	17.037	Skewness	-.214
Range	29.000	Minimum	3.000	Maximum	32.000

Valid Cases	679	Missing Cases	3

```
EPIES     EXTROVERSION
             2  ▬▬ 4
             3  ▬▬ 5
             4  ▬ 1
             4  ▬▬▬ 12
             5  ▬▬▬▬▬▬ 25
             6  ▬▬▬▬▬▬ 26
             6  ▬ 2
             7  ▬▬▬▬▬▬ 29
             8  ▬▬▬▬▬▬▬ 34
             8  ▬ 1
             9  ▬▬▬▬▬▬▬ 35
            10  ▬▬▬▬▬▬▬▬ 41
            11  ▬ 1
            11  ▬▬▬▬▬▬▬▬▬▬ 52
            12  ▬▬▬▬▬▬▬▬▬▬▬ 62
            13  ▬ 1
            13  ▬▬▬▬▬▬▬▬▬▬▬▬▬ 74
            14  ▬▬▬▬▬▬▬▬▬▬▬▬ 67
            15  ▬ 1
            15  ▬▬▬▬▬▬▬▬▬▬ 54
            16  ▬▬▬▬▬▬▬▬▬ 50
            17  ▬ 1
            17  ▬▬▬▬▬▬▬ 40
            18  ▬▬▬▬▬ 22
            19  ▬▬▬▬ 15
            20  ▬▬▬▬ 14
            21  ▬▬▬ 10
            22  ▬ 3
```
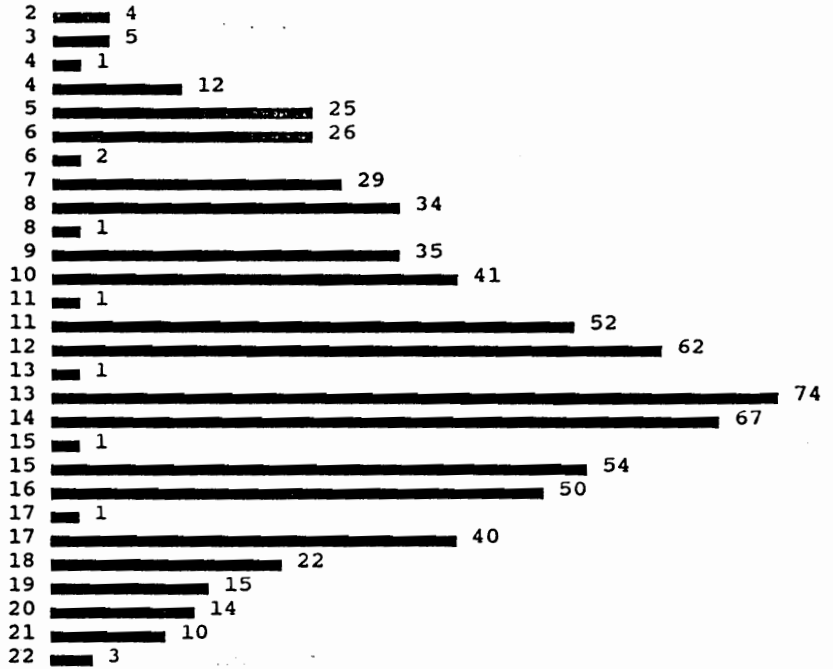
Mean	12.279	Median	13.000	Mode	13.000
Std Dev	4.166	Variance	17.355	Skewness	-.168
Range	20.000	Minimum	2.000	Maximum	22.000

Valid Cases   682   Missing Cases   0

ED   EDUCATION LEVEL
```
11    1
12   ████████████████████████████ 249
13   ███████████████████████████ 243
14   ██████ 55
15   ███ 22
16   █████████████ 102
17    1
18   ██ 7
20    2
```

Valid Cases   682   Missing Cases   0

- -

GENDER   SEX
```
FEMALE  ██████████████████ 167
MALE    ████████████████████████████████████████████████ 515
```

Valid Cases   682   Missing Cases   0

- -

RIGHTHAN   RIGHTHANDEDNESS
```
.00   ██████████ 112
1.00  ███████████████████████████████████████████████████ 570
```

Valid Cases   682   Missing Cases   0

- -

NLANG   # OF LANGUAGES
```
.00   ████████████████████████████████████████ 443
1.00  ███████████████████████████ 212
2.00  ████ 25
3.00    2
```

Valid Cases   682   Missing Cases   0

POIS1 Count	POI Midpoint
0	42
0	44
1	46
0	48
1	50
1	52
0	54
0	56
2	58
8	60
7	62
6	64
7	66
4	68
11	70
11	72
13	74
6	76
15	78
20	80
18	82
19	84
18	86
19	88
28	90
35	92
38	94
41	96
33	98
39	100
45	102
40	104
31	106
29	108
27	110
19	112
22	114
13	116
10	118
12	120
9	122
7	124
4	126
5	128
3	130
1	132
2	134
0	136
1	138
1	140
0	142

234

POIS1   **POI**

Mean	96.009	Median	97.000	Mode	92.000
Std Dev	15.553	Variance	241.911	Kurtosis	.077
Skewness	-.315	Range	95.000	Minimum	45.000
Maximum	140.000				

Valid Cases   682   Missing Cases   0

```
MATS1        AMB1GUITY TOLERANCE
   Count     Midpoint

      2          8   |███
      0         29   |
      1         36   |█
      0        106   |
      1        113   |█
      2        120   |██
      3        127   |██
      5        134   |███
      2        141   |██
      6        148   |████
      4        155   |██
     12        162   |████████
     18        169   |██████████
     31        176   |██████████████████
     38        183   |█████████████████████
     43        190   |███████████████████████
     50        197   |████████████████████████████
     53        204
████████████████████████████████
     55        211
|████████████████████████████████████
     57        218
|███████████████████████████████████
     47        225   |█████████████████████████████████
     51        232   |██████████████████████████████████
     50        239   |████████████████████████████████
     39        246   |████████████████████████
     34        253   |█████████████████████
     28        260   |█████████████████
     15        267   |██████████
     14        274   |█████████
      6        281   |████
      5        288   |███
      2        295   |██
      1        302   |█
      1        309   |█
      3        316   |██
      2        323   |██
      1        330   |█
      0        337   |
      0        344   |

 I....+....I....+....I....+....I....+....I....+....I
            0        12       24       36       48
   60
                      Histogram Frequency
```

236

MATS1   AMBIGUITY TOLERANCE

Mean	216.126	Median	216.000	Mode	218.000
Std Dev	36.164	Variance	1307.834	Kurtosis	3.854
Skewness	-.654	Range	326.000	Minimum	6.000
Maximum	332.000				

Valid Cases   682   Missing Cases   0

```
MOT_A          MOTIV AT START
     Count    Midpoint
         0      -1.8 |
         0      -1.7 |
         1      -1.6 |■
         2      -1.5 |■
         6      -1.4 |▄▄▄
         6      -1.3 |▄▄▄
        14      -1.2 |▄▄▄▄▄▄▄
        15      -1.1 |▄▄▄▄▄▄▄▄
         8      -1.0 |▄▄▄▄
        15       -.9 |▄▄▄▄▄▄▄▄
        13       -.8 |▄▄▄▄▄▄▄
        26       -.7 |▄▄▄▄▄▄▄▄▄▄▄▄▄
        38       -.6 |▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄
        33       -.5 |▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄
        17       -.4 |▄▄▄▄▄▄▄▄
        37       -.3 |▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄
        41       -.2 |▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄
        47       -.1 |▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄
        31        .0 |▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄
        45        .1 |▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄
        36        .2 |▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄
        27        .3 |▄▄▄▄▄▄▄▄▄▄▄▄▄▄
        22        .4 |▄▄▄▄▄▄▄▄▄▄▄
        35        .5 |▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄
        23        .6 |▄▄▄▄▄▄▄▄▄▄▄
        21        .7 |▄▄▄▄▄▄▄▄▄▄
        18        .8 |▄▄▄▄▄▄▄▄▄
        16        .9 |▄▄▄▄▄▄▄▄
        18       1.0 |▄▄▄▄▄▄▄▄▄
        15       1.1 |▄▄▄▄▄▄▄▄
        10       1.2 |▄▄▄▄▄
         5       1.3 |▄▄▄
         3       1.4 |■
        10       1.5 |▄▄▄▄▄
         2       1.6 |■
         3       1.7 |■
         4       1.8 |▄▄
         2       1.9 |■
         4       2.0 |▄▄
         3       2.1 |■
         1       2.2 |■
         1       2.3 |■
         3       2.4 |■
         2       2.5 |■
         0       2.6 |
         0       2.7 |
         0       2.8 |
         0       2.9 |
         1       3.0 |■
         0       3.1 |
```

238
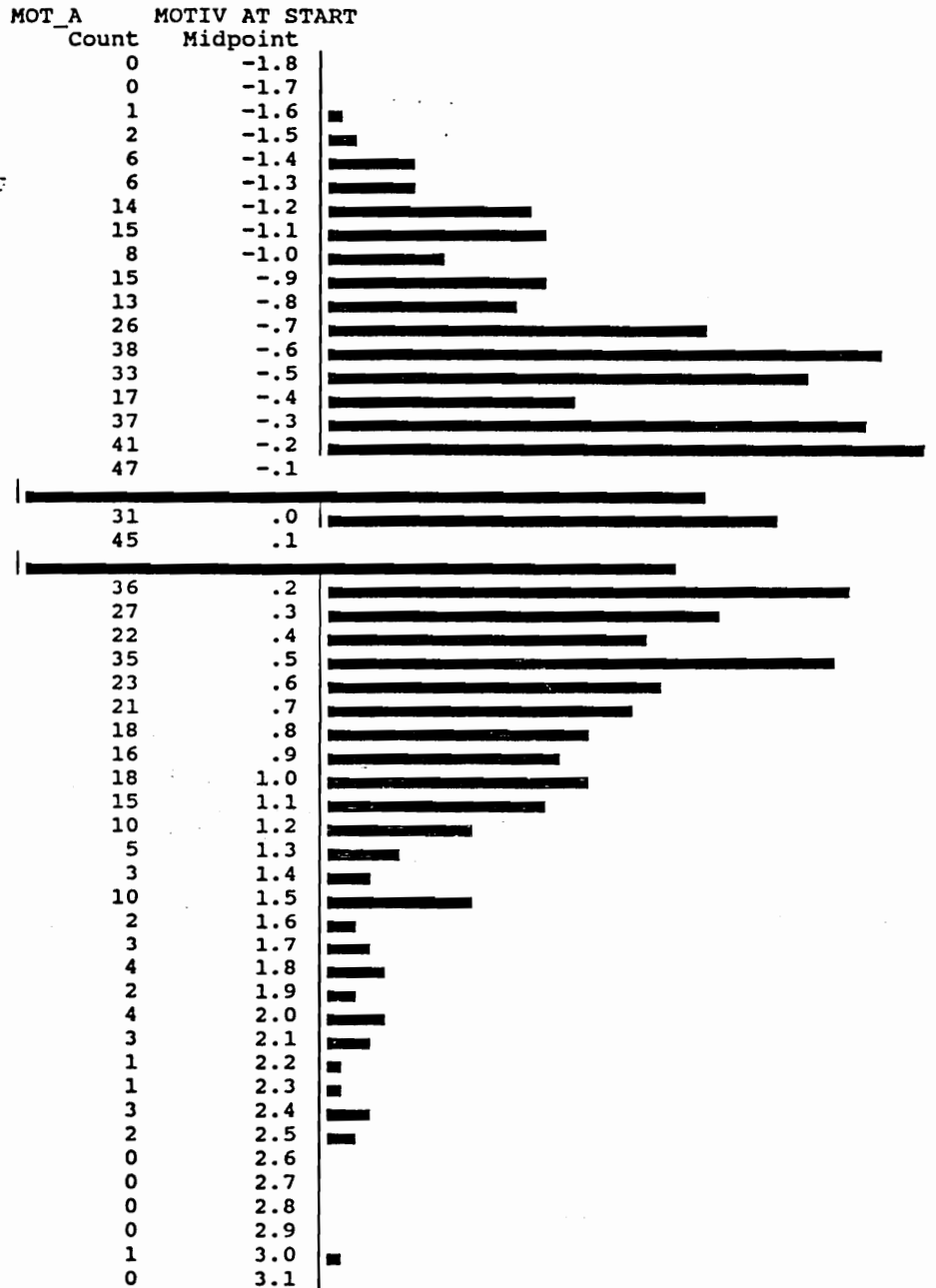
MOT_A   MOTIV AT START

Mean	.079	Median	.018	Mode	-1.500
Std Dev	.760	Variance	.577	Kurtosis	.456
Skewness	.544	Range	4.622	Minimum	-1.610
Maximum	3.013				

Valid Cases	680	Missing Cases	2

```
MOT_B       MOTIV DURING TRAINING
    Count    Midpoint
        0     -4.85   |
        0     -4.70   |
        0     -4.55   |
        0     -4.40   |
        0     -4.25   |
        0     -4.10   |
        1     -3.95   ■
        0     -3.80   |
        0     -3.65   |
        0     -3.50   |
        0     -3.35   |
        0     -3.20   |
        0     -3.05   |
        0     -2.90   |
        1     -2.75   ■
        1     -2.60   ■
        1     -2.45   ■
        2     -2.30   ■■
        1     -2.15   ■
        1     -2.00   ■
        4     -1.85   ■■■
        0     -1.70   |
        6     -1.55   ■■■■■
       12     -1.40   ■■■■■■■■■
       10     -1.25   ■■■■■■■■
       21     -1.10   ■■■■■■■■■■■■■■■■■
       14      -.95   ■■■■■■■■■■■
       19      -.80   ■■■■■■■■■■■■■■■
       18      -.65   ■■■■■■■■■■■■■■
       32      -.50   ■■■■■■■■■■■■■■■■■■■■■■■■■
       29      -.35   ■■■■■■■■■■■■■■■■■■■■■■■
       35      -.20   ■■■■■■■■■■■■■■■■■■■■■■■■■■■■
       39      -.05   ■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■
       34       .10   ■■■■■■■■■■■■■■■■■■■■■■■■■■■
       53       .25   ■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■
       51       .40   ■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■
       35       .55   ■■■■■■■■■■■■■■■■■■■■■■■■■■■
       40       .70   ■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■
       27       .85   ■■■■■■■■■■■■■■■■■■■■■
       18      1.00   ■■■■■■■■■■■■■■
       16      1.15   ■■■■■■■■■■■■■
       10      1.30   ■■■■■■■■
        3      1.45   ■■
        1      1.60   ■
        1      1.75   ■
        0      1.90   |
        0      2.05   |
        0      2.20   |
        0      2.35   |
        0      2.50   |
        0      2.65   |
```
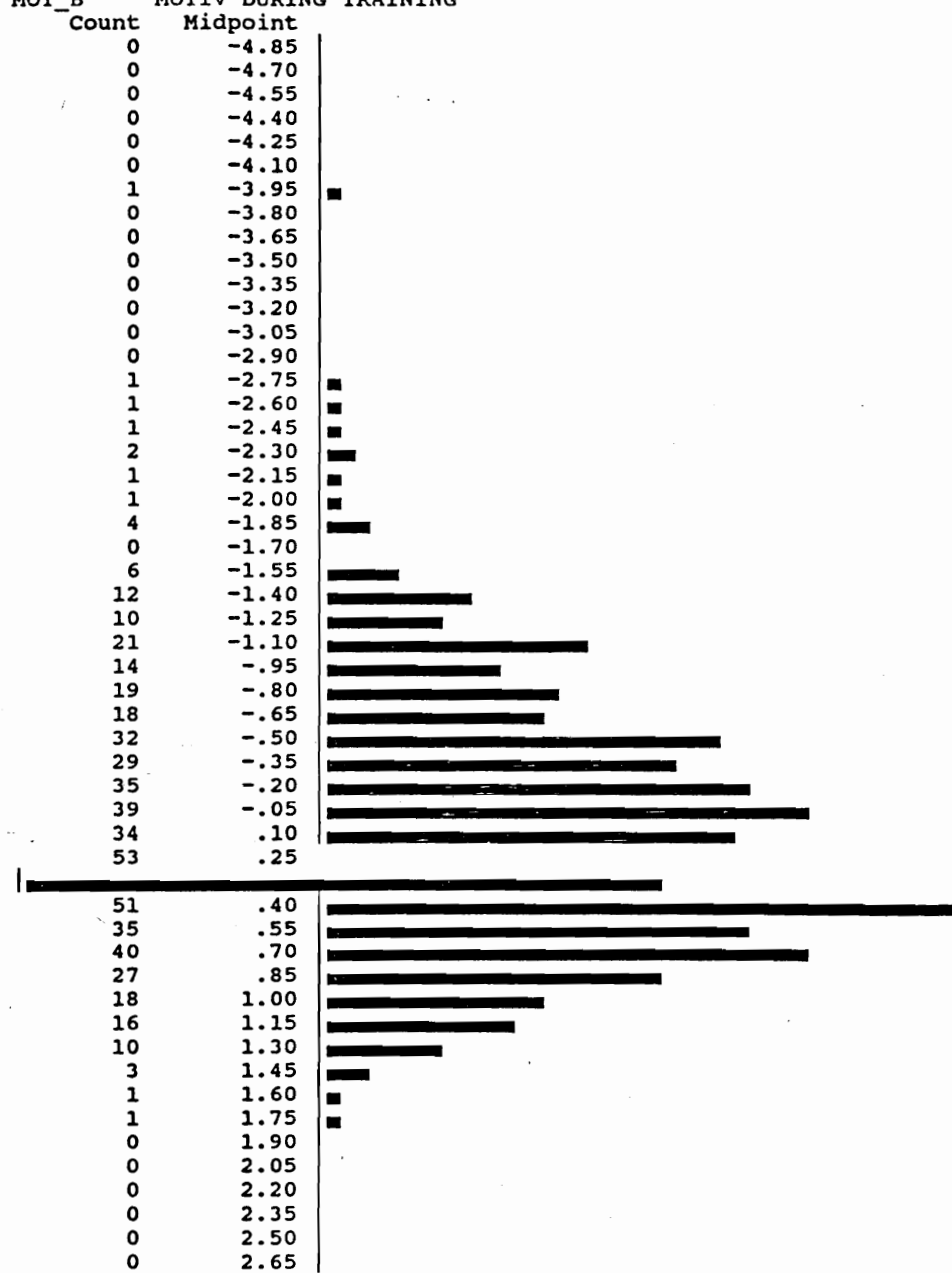
MOT_B   MOTIV DURING TRAINING

Mean	-.003	Median	.129	Mode
-3.895				
Std Dev	.774	Variance	.599	Kurtosis
1.109				
Skewness	-.770	Range	5.593	Minimum
:-3.895				
Maximum	1.699			

Valid Cases	536	Missing Cases	146

SILL_1   ACTIVELY USES L2 IN FUNCTIONAL PRACTICE

```
1.19  ▆ 1
1.56  ▆▆ 2
1.63  ▆▆▆▆ 4
1.69  ▆▆▆ 3
1.75  ▆▆ 2
1.81  ▆▆▆▆ 4
1.88  ▆▆▆▆▆▆▆ 7
1.94  ▆▆▆▆▆▆ 6
2.00  ▆▆▆▆▆▆▆ 7
2.06  ▆▆▆▆▆▆▆▆▆ 9
2.13  ▆▆▆▆▆▆▆ 7
2.19  ▆▆▆▆▆▆▆ 7
2.25  ▆▆▆▆▆▆▆▆▆▆▆ 11
2.31  ▆▆▆▆▆▆▆▆▆▆▆ 11
2.38  ▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆ 20
2.44  ▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆ 16
2.50  ▆▆▆▆▆▆▆▆▆▆▆▆▆▆ 14
2.56  ▆▆▆▆▆▆▆▆▆▆▆ 11
2.63  ▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆ 23
2.69  ▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆ 20
2.75  ▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆ 16
2.81  ▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆ 22
2.88  ▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆ 16
2.94  ▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆ 21
3.00  ▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆ 18
3.06  ▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆ 20
3.13  ▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆ 15
3.19  ▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆ 16
3.25  ▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆ 17
3.31  ▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆ 15
3.38  ▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆ 18
3.44  ▆▆▆▆▆▆▆▆▆▆▆▆▆▆ 14
3.50  ▆▆▆▆▆▆▆▆ 8
3.56  ▆▆▆▆▆▆▆▆▆▆▆▆ 12
3.63  ▆▆▆▆▆▆▆▆▆▆▆ 11
3.69  ▆▆▆▆▆▆▆▆▆ 9
3.75  ▆▆▆▆▆▆▆▆▆▆ 10
3.88  ▆▆▆▆▆▆▆▆▆▆▆▆▆ 13
3.94  ▆▆▆▆▆▆▆ 7
4.00  ▆▆▆▆▆▆ 6
4.06  ▆▆▆▆ 4
4.13  ▆▆▆▆▆▆ 6
4.19  ▆▆▆▆ 4
4.25  ▆▆▆▆ 4
4.31  ▆▆▆ 3
4.38  ▆▆▆ 3
4.56  ▆ 1
4.63  ▆▆ 2
4.69  ▆▆ 2
4.75  ▆ 1
4.81  ▆ 1
5.00  ▆▆ 2
```

242
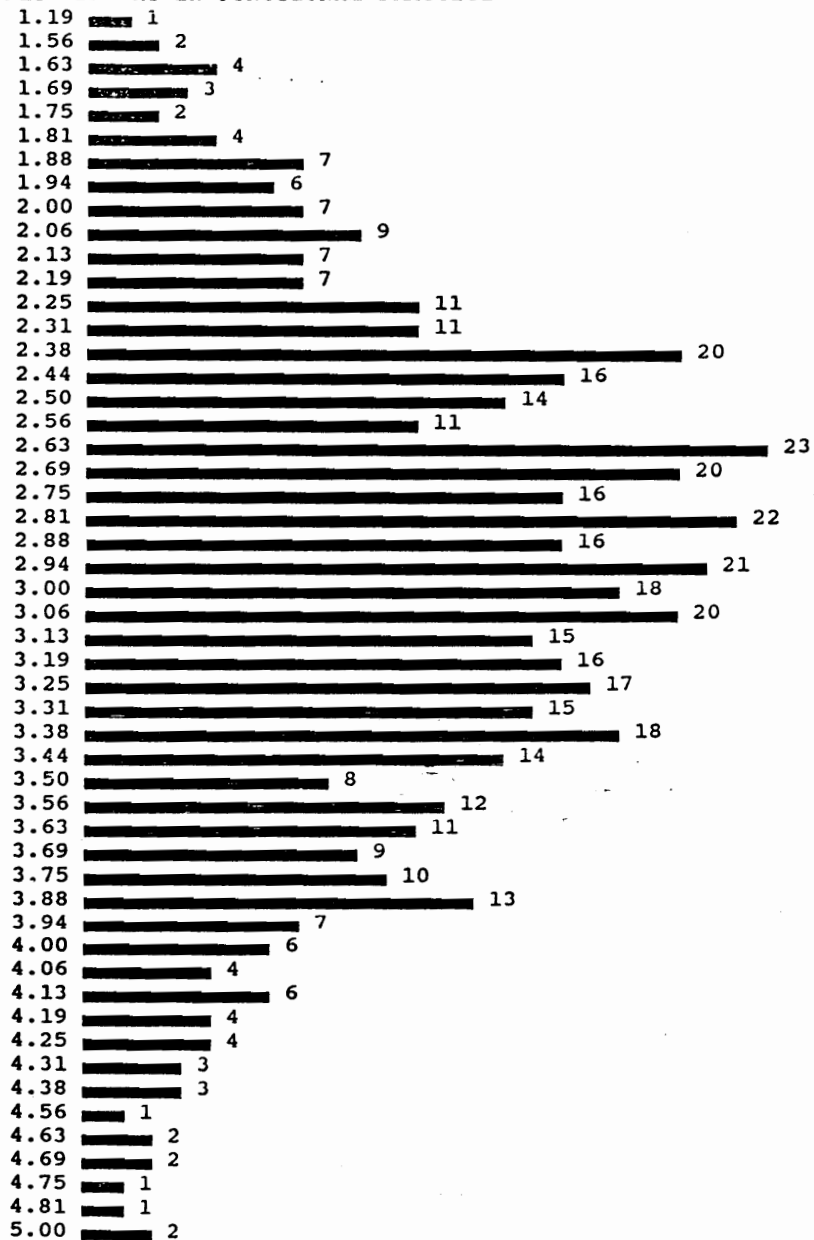
SILL_1   ACTIVELY USES L2 IN FUNCTIONAL PRACTICE (CONT)

Mean	2.983	Median	2.938	Mode	2.625
Std Dev	.671	Variance	.450	Skewness	.274
Range	3.813	Minimum	1.188	Maximum	5.000

Valid Cases   506   Missing Cases   176

SILL_2   GOOD STUDY HABITS
1.00 ▬ 1
1.35 ▬ 1
1.53 ▬▬▬ 4
1.59 ▬ 1
1.65 ▬▬ 3
1.82 ▬▬▬ 4
1.88 ▬▬ 2
1.94 ▬▬▬▬▬ 7
2.00 ▬▬▬▬▬ 7
2.06 ▬▬ 2
2.12 ▬▬▬▬▬▬▬ 10
2.18 ▬▬▬▬▬▬ 8
2.24 ▬▬▬▬▬▬▬▬▬▬▬▬▬ 19
2.29 ▬▬▬▬▬▬▬ 10
2.35 ▬▬▬▬▬▬▬▬▬ 13
2.41 ▬▬▬▬▬▬▬▬ 12
2.47 ▬▬▬▬▬▬▬▬▬ 13
2.53 ▬▬▬▬▬▬ 9
2.59 ▬▬▬ 4
2.65 ▬▬▬▬ 5
2.71 ▬▬▬▬▬▬▬▬▬▬ 14
2.76 ▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 23
2.82 ▬▬▬▬▬▬▬▬▬▬▬ 15
2.88 ▬▬▬▬▬ 7
2.94 ▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 21
3.00 ▬▬▬▬▬▬▬▬▬▬▬▬▬ 19
3.06 ▬▬▬▬▬▬▬▬▬▬▬▬ 17
3.12 ▬▬▬▬▬▬▬▬▬▬▬▬▬ 19
3.18 ▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 20
3.24 ▬▬▬▬▬▬▬▬▬▬▬▬▬ 19
3.29 ▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 25
3.35 ▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 23
3.41 ▬▬▬▬▬▬▬▬▬▬▬▬ 18
3.47 ▬▬▬▬▬▬▬▬▬▬▬▬ 17
3.53 ▬▬▬▬▬▬▬▬▬▬▬▬ 17
3.59 ▬▬▬▬▬▬▬ 10
3.65 ▬▬▬▬▬▬▬▬ 12
3.71 ▬▬▬▬▬▬▬▬ 11
3.76 ▬▬▬▬▬ 7
3.82 ▬▬▬▬ 6
3.88 ▬▬▬▬▬▬ 8
3.94 ▬▬ 3
4.00 ▬▬▬ 4
4.06 ▬▬▬▬ 6
4.12 ▬▬▬ 4
4.18 ▬▬ 2
4.24 ▬▬▬▬ 5
4.29 ▬▬ 3
4.35 ▬▬ 2
4.53 ▬▬ 2
4.76 ▬ 1
4.82 ▬ 1
4.94 ▬ 1
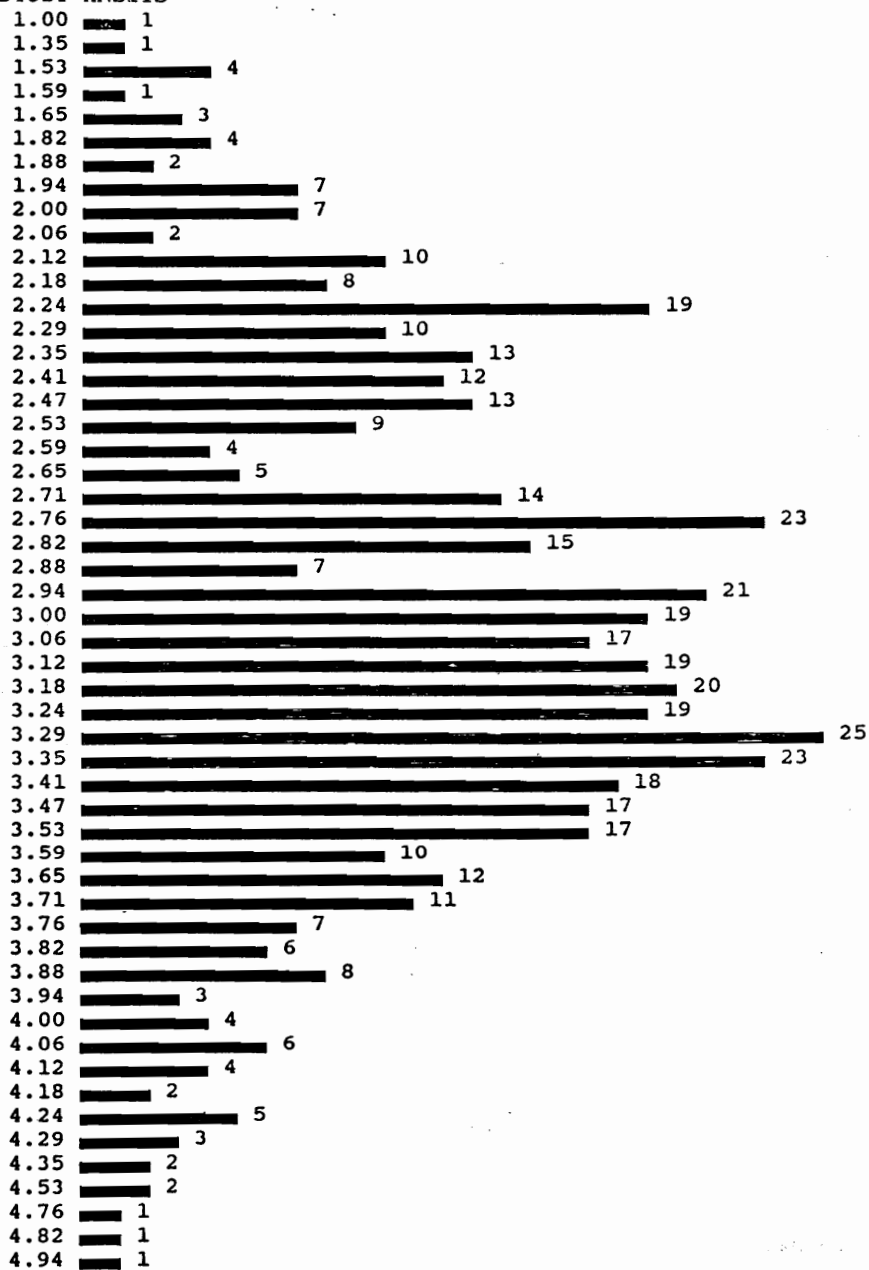
```
SILL_2   GOOD STUDY HABITS (CONT)
Mean           3.021    Median      3.059    Mode        3.294
Std Dev         .642    Variance     .412    Skewness    -.096
Range          3.941    Minimum     1.000    Maximum     4.941


Valid Cases     502     Missing Cases    180

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

SILL_3    GIVES MEANING TO LANGUAGE
              1.83  ▬ 1
              2.25  ▬▬ 2
              2.33  ▬ 1
              2.50  ▬ 1
              2.58  ▬ 1
              2.67  ▬▬ 2
              2.75  ▬▬ 2
              2.92  ▬ 1
              3.00  ▬▬▬▬ 5
              3.08  ▬▬▬▬▬ 6
              3.17  ▬▬▬ 3
              3.25  ▬▬▬▬▬▬ 7
              3.33  ▬▬▬▬▬▬▬ 9
              3.42  ▬▬▬▬▬▬▬▬▬▬▬▬ 16
              3.50  ▬▬▬▬▬▬▬▬ 11
              3.58  ▬▬▬▬▬▬▬ 10
              3.67  ▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 25
              3.75  ▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 20
              3.83  ▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 28
              3.92  ▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 23
              4.00  ▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 33
              4.08  ▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 25
              4.17  ▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 23
              4.25  ▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 37
              4.33  ▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 38
              4.42  ▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 29
              4.50  ▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 37
              4.58  ▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 22
              4.67  ▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 24
              4.75  ▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 25
              4.83  ▬▬▬▬▬▬▬▬▬▬▬▬ 19
              4.92  ▬▬▬▬▬ 8
              5.00  ▬▬▬▬▬▬▬▬ 12

Mean           4.122    Median      4.167    Mode        4.333
Std Dev         .525    Variance     .275    Skewness    -.783
Range          3.167    Minimum     1.833    Maximum     5.000

Valid Cases     506     Missing Cases    176
```
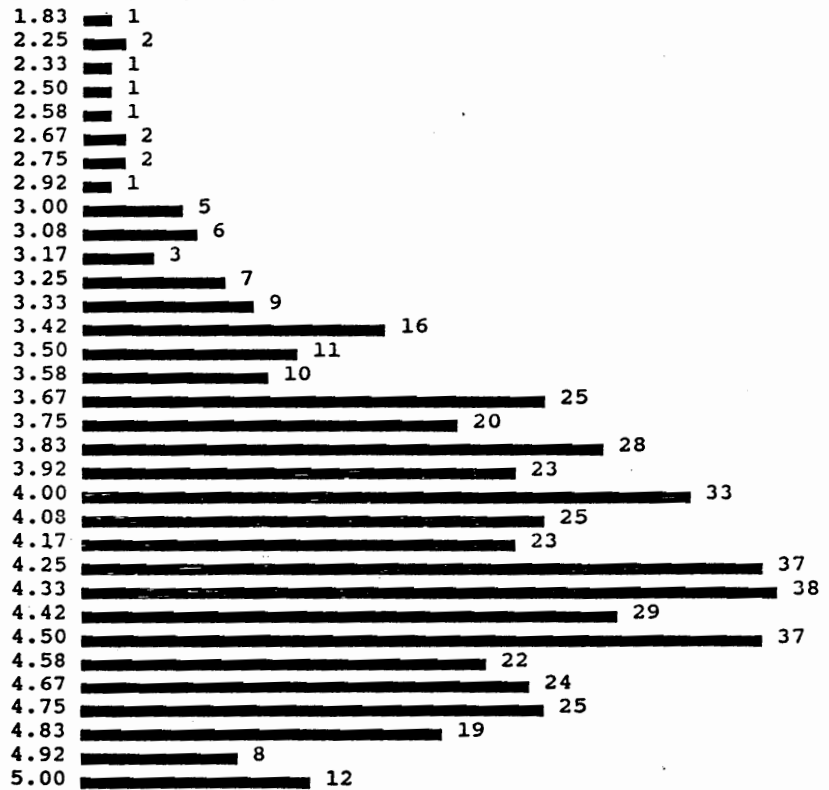
245

```
SILL_4     USES MENTAL IMAGES
          1.00  ▄▄▄ 2
          1.17  ▄▄▄▄ 3
          1.33  ▄▄▄▄▄ 5
          1.50  ▄▄▄▄▄▄ 6
          1.67  ▄▄▄▄▄▄▄▄ 9
          1.83  ▄▄▄▄▄▄▄ 8
          2.00  ▄▄▄▄▄▄▄▄ 9
          2.17  ▄▄▄▄▄▄▄▄▄ 10
          2.33  ▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄ 20
          2.50  ▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄ 25
          2.67  ▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄ 26
          2.83  ▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄ 43
          3.00  ▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄ 32
          3.17  ▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄ 34
          3.33  ▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄ 47
          3.50  ▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄ 27
          3.67  ▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄ 35
          3.83  ▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄ 42
          4.00  ▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄ 32
          4.17  ▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄ 21
          4.33  ▄▄▄▄▄▄▄▄▄▄▄▄ 17
          4.50  ▄▄▄▄▄▄▄▄▄▄▄▄ 17
          4.67  ▄▄▄▄▄▄▄▄▄ 12
          4.83  ▄▄▄▄▄▄▄ 9
          5.00  ▄▄▄▄▄▄▄▄▄ 12
```
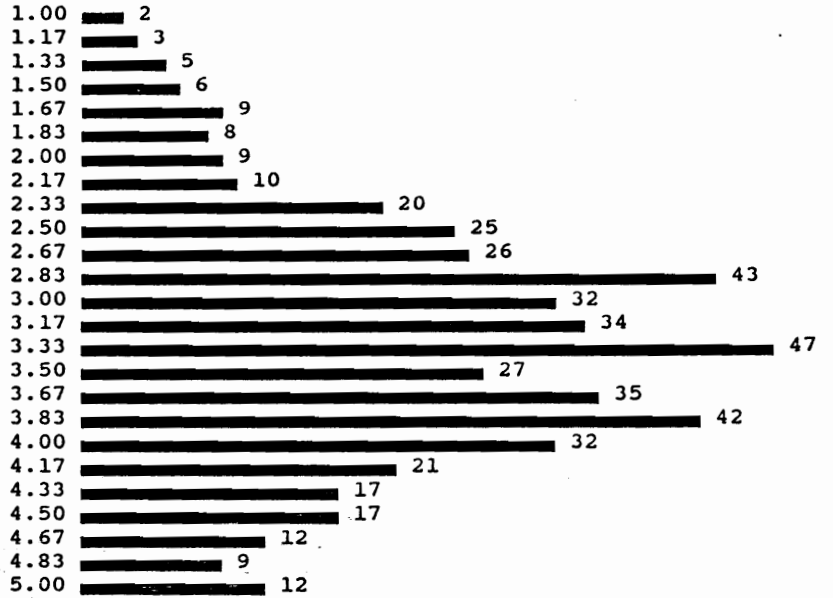
Mean	3.301	Median	3.333	Mode	3.333
Std Dev	.847	Variance	.718	Skewness	-.215
Range	4.000	Minimum	1.000	Maximum	5.000

Valid Cases	503	Missing Cases	179

```
SILL_5     INTENSITY OF STUDY
              2.29  ▬▬▬ 4
              2.43  ▬▬ 3
              2.57  ▬▬▬ 4
              2.71  ▬▬▬▬ 8
              2.86  ▬▬▬ 4
              3.00  ▬▬▬▬▬▬▬ 13
              3.14  ▬▬▬▬▬▬▬▬ 15
              3.29  ▬▬▬▬▬▬▬▬▬▬▬ 21
              3.43  ▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 30
              3.57  ▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 31
              3.71  ▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 33
              3.86  ▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 48
              4.00  ▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 37
              4.14  ▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 49
              4.29  ▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 48
              4.43  ▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 48
              4.57  ▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 33
              4.71  ▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 27
              4.86  ▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 29
              5.00  ▬▬▬▬▬▬▬▬▬▬ 19
```
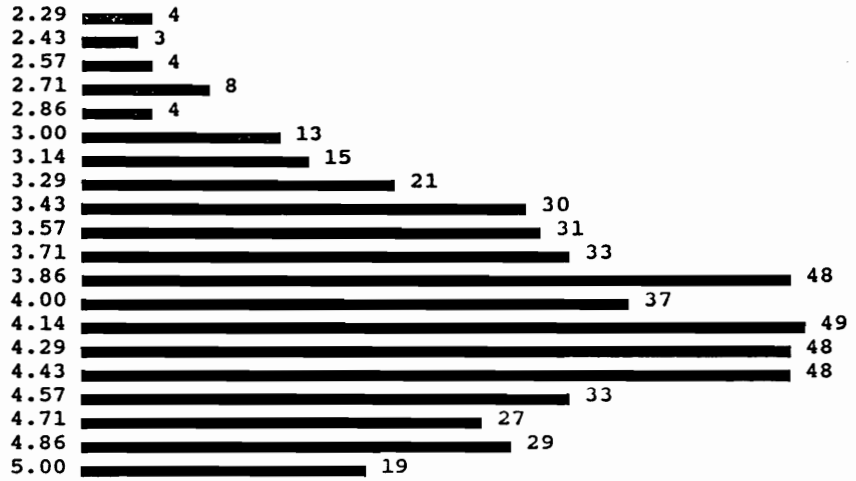
Mean	4.007	Median	4.143	Mode	4.143
Std Dev	.595	Variance	.354	Skewness	-.482
Range	2.714	Minimum	2.286	Maximum	5.000

Valid Cases	504	Missing Cases	178

PASSFAIL   COURSE COMPLETION/ATTRITION

```
FAIL  .00 ███████████████ 173
PASS 1.00 █████████████████████████████████████ 441
```

Valid Cases   614   Missing Cases   68

GPDLI   GROUPS 0/1 AT DLI

```
< LEV 2   .00 ██████████████████████████████ 276
≥ LEV 2  1.00 ████████████████████ 184
```

Valid Cases   460   Missing Cases   222

GPAIT   GROUPS 0/1 AT AIT

```
< LEV 2   .00 ███████████████████████ 251
≥ LEV 2  1.00 █████████ 92
```

Valid Cases   343   Missing Cases   339

```
SILL_6    STUDY PLANNING
            1.00  ▬▬ 2
            1.33  ▬ 1
            1.50  ▬ 1
            1.67  ▬ 1
            1.83  ▬ 1
            2.00  ▬▬ 2
            2.17  ▬▬▬▬ 8
            2.33  ▬▬▬ 6
            2.50  ▬▬▬▬▬▬ 13
            2.67  ▬▬▬▬ 8
            2.83  ▬▬▬▬▬▬▬▬▬▬▬▬ 27
            3.00  ▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 33
            3.17  ▬▬▬▬▬▬▬▬▬▬▬ 26
            3.33  ▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 58
            3.50  ▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 42
            3.67  ▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 45
            3.83  ▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 46
            4.00  ▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 40
            4.17  ▬▬▬▬▬▬▬▬▬▬▬▬▬ 30
            4.33  ▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 38
            4.50  ▬▬▬▬▬▬▬▬▬ 21
            4.67  ▬▬▬▬▬▬▬▬▬▬ 26
            4.83  ▬▬▬▬▬▬▬ 19
            5.00  ▬▬▬▬▬ 12
```

Mean	3.665	Median	3.667	Mode	3.333
Std Dev	.713	Variance	.509	Skewness	-.384
Range	4.000	Minimum	1.000	Maximum	5.000

Valid Cases   506   Missing Cases   176

249

MCODE   MOS   SKILL SPECIALTY

```
98C ■■■■■■■■■■■ 138
98G ■■■■■■■■■■■■■■■■■■■■■■■■■■■■■ 544
```

Valid Cases   682   Missing Cases   0

APPENDIX F: LSCP DATA CORRELATIONS

CORRELATIONS:

Variable	Cases	Mean	Std Dev	
DLICON_L	257	39.1712	5.0646	DLI RAW SCORE
AITCON_L	257	36.8054	4.9884	AIT RAW SCORE
DLPT2L	257	1.6708	.5470	DLI LEV SCORE
AL	257	1.4568	.5406	AIT LEV SCORE
AGT	257	122.6109	6.8056	COG ABIL
DLAB	257	108.7549	12.9092	LANG APT
MATS1	257	215.2646	35.6181	AMB TOL
MCODE	257	3.8482	.3595	SKILL SPEC
GEF	257	13.4747	4.3347	FLD INDEP
FE	257	18.1245	4.3643	VERB ABIL
FM	257	20.4708	8.4373	MEMORY
WG	257	59.3307	9.1538	CRIT THNK
CPIS1	257	22.1861	3.8171	EMPATHY
EPIES	257	12.1940	4.0432	EXTRAV
POIS1	257	95.3514	15.0691	SELF CON
ED	257	13.3035	1.4768	EDUCATION
GENDER	257	1.7471	.4355	SEX
RIGHTHAN	257	.8405	.3669	HANDEDNESS
NLANG	257	.3813	.5471	PRI LANG
SILL_1	257	2.9759	.6398	LANG USE
SILL_2	257	3.0025	.6342	STDY HAB
SILL_3	257	4.1462	.4982	MNG TO LANG
SILL_4	257	3.2613	.8348	MENT IMGS
SILL_5	257	4.0862	.5607	STDY INT
SILL_6	257	3.6595	.7099	STDY PLNG
MOT_A	257	.0438	.7059	MOT STRT
MOT_B	257	.0548	.7124	MOT IN TNG
PASSFAIL	257	1.0000	.0000	COMP/ATTRIT
GPDLI	257	.3852	.4876	GP 0/1 DLI
GPAIT	257	.2451	.4310	GP 0/1 AIT

CORRELATIONS (CONT):

Correlations:	DLI RAW SCORE DLICON_L	AIT RAW SCORE AITCON_L	DLI LEV SCORE DLPT2L	AIT LEV SCORE AL	COG ABIL AGT	LANG APT DLAB
DLICON_L	1.0000	.5326**	.9556**	.5078**	.2855**	.2929**
AITCON_L	.5326**	1.0000	.5110**	.9437**	.2031**	.3154**
DLPT2L	.9556**	.5110**	1.0000	.4852**	.2563**	.2762**
AL	.5078**	.9437**	.4852**	1.0000	.1738*	.2979**
AGT	.2855**	.2031**	.2563**	.1738*	1.0000	.2718**
DLAB	.2929**	.3154**	.2762**	.2979**	.2718**	1.0000
MATS1	.0882	.0514	.1035	.0838	.1967**	.1309
MCODE	-.1573*	-.0797	-.1478*	-.0922	-.1041	-.1175
GEF	.0968	.0681	.0688	.0641	.2538**	.3155**
FE	.2758**	.3058**	.2817**	.2937**	.2113**	.2865**
FM	.2144**	.1687*	.2617**	.1335	.1780*	.2306**
WG	.2973**	.2767**	.2699**	.2381**	.4754**	.3357**
CPIS1	.0134	.0114	.0280	.0332	.0880	.1060
EPIES	-.0557	-.1078	-.0211	-.0593	-.0371	-.0918
POIS1	-.0110	-.0050	-.0126	.0199	-.2831**	-.1720*
ED	.1225	.0367	.0806	.0409	.1607*	.0424
GENDER	.0374	-.0569	.0197	-.0217	.1103	-.1604*
RIGHTHAN	-.0042	.0321	.0020	.0222	.0924	-.0000
NLANG	.1173	.0158	.1287	.0533	-.0418	.1134
SILL_1	.0805	.1961**	.0989	.1635*	-.0161	-.0485
SILL_2	-.1566*	-.1139	-.1522*	-.1370	-.1360	-.1637*
SILL_3	.1042	.1645*	.1002	.1839*	.0344	.0759
SILL_4	-.0539	-.1461*	-.0495	-.1375	.0457	-.0466
SILL_5	.0274	.1477*	.0335	.1418	-.0488	-.0439
SILL_6	.0012	.0759	-.0111	.0743	-.0865	-.0641
MOT_A	.1661*	.1018	.1609*	.1057	.1040	.0274
MOT_B	-.0429	.0853	-.0271	.0895	-.0991	.0214
PASSFAIL	.	.	.	.	.	.
GPDLI	.8274**	.4292**	.8054**	.3968**	.2631**	.2304**
GPAIT	.4835**	.8017**	.4762**	.8084**	.1685*	.2917**

N of cases: 257   1-tailed Signif: * - .01   ** - .001

" . " is printed if a coefficient cannot be computed

253

Correlations:	AMB TOL MATS1	SKILL SPEC MCODE	FLD IND GEF	VERB ABIL FE	MEM FM	CRIT THNK WG
DLICON_L	.0882	-.1573*	.0968	.2758**	.2144**	.2973**
AITCON_L	.0514	-.0797	.0681	.3058**	.1687*	.2767**
DLPT2L	.1035	-.1478*	.0688	.2817**	.2617**	.2699**
AL	.0838	-.0922	.0641	.2937**	.1335	.2381**
AGT	.1967**	-.1041	.2538**	.2113**	.1780*	.4754**
`DLAB	.1309	-.1175	.3155**	.2865**	.2306**	.3357**
MATS1	1.0000	-.0466	.0338	.0067	.0132	.1825*
MCODE	-.0466	1.0000	.0063	-.0327	-.0407	-.0808
GEF	.0338	.0063	1.0000	.1239	.1343	.1963**
FE	.0067	-.0327	.1239	1.0000	.2859**	.3884**
FM	.0132	-.0407	.1343	.2859**	1.0000	.2037**
WG	.1825*	-.0808	.1963**	.3884**	.2037**	1.0000
CPIS1	.2014**	-.0837	-.0521	.0176	.1000	.1600*
EPIES	.1477*	.0463	-.1023	-.1079	-.0293	-.0694
POIS1	-.2491**	.0611	-.1460*	-.0308	-.0909	-.3531**
ED	.0585	-.0527	-.1928**	.1778*	-.0222	.1870*
GENDER	-.0599	.1780*	-.0003	-.1211	-.0706	.0740
RIGHTHAN	-.0186	.0527	.0355	.0661	-.0160	.0239
NLANG	.0429	-.0224	-.1227	.1796*	.0938	.0262
SILL_1	.0259	.0286	-.0361	-.0122	.0354	-.0091
SILL_2	-.0728	.0964	-.1210	-.1819*	-.1535*	-.1543*
SILL_3	-.0452	.0662	.0636	.1325	.1381	.1634*
SILL_4	-.0681	.0350	.0946	-.0629	-.0773	-.0280
SILL_5	-.1139	.1067	-.0295	.0522	.0138	.0278
SILL_6	-.1138	.1003	-.0645	-.0373	-.0349	-.0498
MOT_A	.1852*	-.0309	.1133	-.0043	.0623	.0911
MOT_B	.0000	.0888	-.0989	.0070	.0677	.0600
PASSFAIL	.	.	.	.	.	.
GPDLI	.1070	-.0886	.0610	.2197**	.1523*	.2794**
GPAIT	.1021	-.1119	.0755	.3264**	.1787*	.2368**

N of cases: 257   1-tailed Signif: * - .01   ** - .001

" . " is printed if a coefficient cannot be computed

254

Correlations:	EMPATH CPIS1	EXTRAV EPIES	SELF CON POIS1	EDUC ED	SEX GENDER	HANDNS RIGHTHAN
DLICON_L	.0134	-.0557	-.0110	.1225	.0374	-.0042
AITCON_L	.0114	-.1078	-.0050	.0367	-.0569	.0321
DLPT2L	.0280	-.0211	-.0126	.0806	.0197	.0020
AL	.0332	-.0593	.0199	.0409	-.0217	.0222
AGT	.0880	-.0371	-.2831**	.1607*	.1103	.0924
DLAB	.1060	-.0918	-.1720*	.0424	-.1604*	-.0000
MATS1	.2014**	.1477*	-.2491**	.0585	-.0599	-.0186
MCODE	-.0837	.0463	.0611	-.0527	.1780*	.0527
GEF	-.0521	-.1023	-.1460*	-.1928**	-.0003	.0355
FE	.0176	-.1079	-.0308	.1778*	-.1211	.0661
FM	.1000	-.0293	-.0909	-.0222	-.0706	-.0160
WG	.1600*	-.0694	-.3531**	.1870*	.0740	.0239
CPIS1	1.0000	.4154**	-.3988**	.1131	-.0969	.0221
EPIES	.4154**	1.0000	-.0624	-.0795	-.0253	.0157
POIS1	-.3988**	-.0624	1.0000	-.0136	.0831	-.0615
ED	.1131	-.0795	-.0136	1.0000	-.0381	.0897
GENDER	-.0969	-.0253	.0831	-.0381	1.0000	-.0335
RIGHTHAN	.0221	.0157	-.0615	.0897	-.0335	1.0000
NLANG	.1704*	.1130	-.0464	.1559*	-.1510*	-.0071
SILL_1	.1984**	.1377	-.1966**	-.0243	-.0053	-.0258
SILL_2	.0936	.0501	-.1597*	-.0155	.0581	.0719
SILL_3	.1682*	.0959	-.3182**	-.0336	-.0389	.0337
SILL_4	.1156	.0741	-.1298	-.0725	.0357	.0198
SILL_5	-.0103	-.0615	-.1194	.0175	-.0292	.0372
SILL_6	.0547	.0067	-.1793*	-.0228	.0678	.0056
MOT_A	-.0712	-.0442	-.0221	.0916	.0154	.0516
MOT_B	.2328**	.1486*	-.2424**	-.0468	.0005	.0407
PASSFAIL	.	.	.	.	.	.
GPDLI	-.0023	-.0113	.0215	.1625*	.0743	.0828
GPAIT	-.0413	-.0812	-.0044	.0054	-.0846	.0012

N of cases: 257   1-tailed Signif: * - .01 ** - .001

" . " is printed if a coefficient cannot be computed

Correlations:	PRI LANG NLANG	LANG USE SILL_1	STDY HAB SILL_2	MNG TO LANG SILL_3	MENT IMGS SILL_4	STDY INT SILL_5
DLICON_L	.1173	.0805	-.1566*	.1042	-.0539	.0274
AITCON_L	.0158	.1961**	-.1139	.1645*	-.1461*	.1477*
DLPT2L	.1287	.0989	-.1522*	.1002	-.0495	.0335
AL	.0533	.1635*	-.1370	.1839*	-.1375	.1418
AGT	-.0418	-.0161	-.1360	.0344	.0457	-.0488
DLAB	.1134	-.0485	-.1637*	.0759	-.0466	-.0439
MATS1	.0429	.0259	-.0728	-.0452	-.0681	-.1139
MCODE	-.0224	.0286	.0964	.0662	.0350	.1067
GEF	-.1227	-.0361	-.1210	.0636	.0946	-.0295
FE	.1796*	-.0122	-.1819*	.1325	-.0629	.0522
FM	.0938	.0354	-.1535*	.1381	-.0773	.0138
WG	.0262	-.0091	-.1543*	.1634*	-.0280	.0278
CPIS1	.1704*	.1984**	.0936	.1682*	.1156	-.0103
EPIES	.1130	.1377	.0501	.0959	.0741	-.0615
POIS1	-.0464	-.1966**	-.1597*	-.3182**	-.1298	-.1194
ED	.1559*	-.0243	-.0155	-.0336	-.0725	.0175
GENDER	-.1510*	-.0053	.0581	-.0389	.0357	-.0292
RIGHTHAN	-.0071	-.0258	.0719	.0337	.0198	.0372
NLANG	1.0000	.0717	-.0657	.0932	.0161	.0362
SILL_1	.0717	1.0000	.5470**	.4155**	.2584**	.3560**
SILL_2	-.0657	.5470**	1.0000	.3558**	.3544**	.4505**
SILL_3	.0932	.4155**	.3558**	1.0000	.3776**	.5036**
SILL_4	.0161	.2584**	.3544**	.3776**	1.0000	.1701*
SILL_5	.0362	.3560**	.4505**	.5036**	.1701*	1.0000
SILL_6	-.1103	.5330**	.6127**	.4902**	.2300**	.5299**
MOT_A	.0489	-.1458*	-.1688*	-.1657*	-.0970	-.1047
MOT_B	.0126	.5484**	.4007**	.4598**	.0926	.5280**
PASSFAIL	.	.	.	.	.	.
GPDLI	.1208	.0854	-.1146	.0754	-.0676	.0394
GPAIT	.0162	.2145**	-.1258	.1902*	-.0792	.1178

N of cases: 257   1-tailed Signif: * - .01   ** - .001

" . " is printed if a coefficient cannot be computed

Correlations:	STDY PLNG SILL_6	MOT STRT MOT_A	MOT IN TNG MOT_B	COMP/ ATTRIT PASSFAIL	GP 0/1 DLI GPDLI	GP 0/1 AIT GPAIT
DLICON_L	.0012	.1661*	-.0429	.	.8274**	.4835**
AITCON_L	.0759	.1018	.0853	.	.4292**	.8017**
DLPT2L	-.0111	.1609*	-.0271	.	.8054**	.4762**
AL	.0743	.1057	.0895	.	.3968**	.8084**
AGT	-.0865	.1040	-.0991	.	.2631**	.1685*
DLAB	-.0641	.0274	.0214	.	.2304**	.2917**
MATS1	-.1138	.1852*	.0000	.	.1070	.1021
MCODE	.1003	-.0309	.0888	.	-.0886	-.1119
GEF	-.0645	.1133	-.0989	.	.0610	.0755
FE	-.0373	-.0043	.0070	.	.2197**	.3264**
FM	-.0349	.0623	.0677	.	.1523*	.1787*
WG	-.0498	.0911	.0600	.	.2794**	.2368**
CPIS1	.0547	-.0712	.2328**	.	-.0023	-.0413
EPIES	.0067	-.0442	.1486*	.	-.0113	-.0812
POIS1	-.1793*	-.0221	-.2424**	.	.0215	-.0044
ED	-.0228	.0916	-.0468	.	.1625*	.0054
GENDER	.0678	.0154	.0005	.	.0743	-.0846
RIGHTHAN	.0056	.0516	.0407	.	.0828	.0012
NLANG	-.1103	.0489	.0126	.	.1208	.0162
SILL_1	.5330**	-.1458*	.5484**	.	.0854	.2145**
SILL_2	.6127**	-.1688*	.4007**	.	-.1146	-.1258
SILL_3	.4902**	-.1657*	.4598**	.	.0754	.1902*
SILL_4	.2300**	-.0970	.0926	.	-.0676	-.0792
SILL_5	.5299**	-.1047	.5280**	.	.0394	.1178
SILL_6	1.0000	-.2711**	.5067**	.	-.0372	.1228
MOT_A	-.2711**	1.0000	-.2135**	.	.1221	.0536
MOT_B	.5067**	-.2135**	1.0000	.	-.0137	.1102
PASSFAIL	.	.	.	1.0000	.	.
GPDLI	-.0372	.1221	-.0137	.	1.0000	.4039**
GPAIT	.1228	.0536	.1102	.	.4039**	1.0000

N of cases: 257   1-tailed Signif: * - .01   ** - .001

" . " is printed if a coefficient cannot be computed

APPENDIX G: INTERVIEW FORM

NAME:_____ ORG:_____ DTE:_____

RANK:_____ MOS: _____

PLEASE CIRCLE THE DEGREE TO WHICH YOU BELIEVE THE IMPORTANCE OF
THE FOLLOWING INDIVIDUAL CHARACTERISTICS CONTRIBUTE TO AN ABILITY
TO ACQUIRE AND RETAIN LISTENING AND COMPREHENSION SKILLS FOR THE
RUSSIAN LANGUAGE:

	IMPORTANCE						
	LOW◄--------------------------►HIGH						
GENERAL INTELLIGENCE LEVEL:	1	2	3	4	5	6	7
LANGUAGE APTITUDE:	1	2	3	4	5	6	7
MEMORY:	1	2	3	4	5	6	7
FIELD INDEPENDENCE:	1	2	3	4	5	6	7
ANALYTIC REASONING:	1	2	3	4	5	6	7
MOTIVATION:	1	2	3	4	5	6	7
EXTROVERSION:	1	2	3	4	5	6	7
EMPATHY:	1	2	3	4	5	6	7
TOLERANCE OF AMBIGUITY:	1	2	3	4	5	6	7
SELF CONFIDENCE:	1	2	3	4	5	6	7

OTHER FACTORS? (LIST)

CONVERSATION RECORD			TIME		DATE		

TYPE						ROUTING	
DLQ2	☐ VISIT	☐ CONFERENCE	☐ TELEPHONE			NAME/SYMBOL	INT
				☐ INCOMING			
Location of Visit/Conference:				☐ OUTGOING			

NAME OF PERSON(S) CONTACTED OR IN CONTACT WITH YOU	ORGANIZATION (Office, dept., bureau, etc.)	TELEPHONE NO.

SUBJECT
WHAT, IN YOUR MIND, ARE THE PRIMARY FACTORS AFFECTING
AN ABILITY TO ACQUIRE RUSSIAN LANGUAGE LISTENING SKILLS?

SUMMARY

ACTION REQUIRED

NAME OF PERSON DOCUMENTING CONVERSATION	SIGNATURE	DATE

ACTION TAKEN

SIGNATURE	TITLE	DATE

CONVERSATION RECORD		TIME	DATE	. . .

TYPE
DLQ3 ☐ VISIT   ☐ CONFERENCE   ☐ TELEPHONE

☐ INCOMING
☐ OUTGOING

ROUTING

NAME/SYMBOL	INT

Location of Visit/Conference:

NAME OF PERSON(S) CONTACTED OR IN CONTACT WITH YOU	ORGANIZATION (Office, dept., bureau, etc.)	TELEPHONE NO.

SUBJECT
WHAT FACTORS CONTRIBUTE TO THE RETENTION OF THE
RUSSIAN LANGUAGE LISTENING SKILLS?

SUMMARY

ACTION REQUIRED

NAME OF PERSON DOCUMENTING CONVERSATION	SIGNATURE	DATE

ACTION TAKEN

SIGNATURE	TITLE	DATE

80271-101   ☀ U.S. CPO: 1980-801-700/80020   (40231) CONVERSATION RECORD

VITA

D. BRENT POPE
Colonel, US Army (ret)

Personal

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Education

United States Military Academy, BS, Engineering, 1963
Athens College, MA, Education, 1969
University of Utah, MBA, Business, 1974
US Army Command & General Staff College, MMAS, Military
   Science, 1975
Other Military:
   Air War College, 1976
   Defense Systems Management College, 1980
   Army War College, 1984
   Industrial College of the Armed Forces, 1984

Experience

        Executive Officer/Military Assistant, Land
        Warfare, Office of the Under Secretary of Defense
        for Acquisition, Office of the Secretary of
        Defense, July 1989 - September 1990.

        Executive Office/Military Assistant, Directorate
        for Operational Test and Evaluation, Office of the
        Secretary of Defense, october 1988 - June 1989.

        Commander, 60th Ordnance Group, US Army, Europe,
        October 1986-October 1988.

        Deputy for Artillery and Air Defense Systems,
        Office of the Assistant Secretary of the Army for
        Research, Development and Acquisition,

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Headquarters, Department of the Army, February
1986 - October 1986.

Deputy Director, Systems Review and Analysis,
Office of the Deputy Chief of Staff (Research,
Development and Acquisition), Headquarters,
Department of the Army, June 1984 - February 1986.

Commander, Lake City Army Ammunition Plant, US
Army Armaments Command, July 1980 - July 1983.

D. Brent Pope
_____
D. Brent Pope