

English Spatial Prepositions with
Particular Reference
to
Arabic-Speaking Learners

By

Abdullah S. Dera

A Thesis Submitted for The Degree of
Doctor of Philosophy

in

the Department of English Language and Linguistics,
the University of Sheffield.

September, 1994

Acknowledgements

I would like to express my sincere thanks and appreciation to Mr. G. Nixon, my supervisor, who has followed the progress of this thesis with constant encouragement, assistance and invaluable advice even when other pressures made its progress slower than I would have liked.

My deepest thanks are extended to professor N. F. Blake, the Head of the Department of English Language and Linguistics, for his invaluable suggestions and comments, and for his understanding.

My heartfelt appreciation and gratitude go to my dear father and mother, brothers and sisters, relatives, and my wife's family for their love, support and patience in enduring the inconveniences and difficulties as a result of my long absence from home.

Thanks are also due to my friends H. Kari and A. Basulieyman for their artistic skills in drawing the pictures needed for the picture test; and to E. B. Fosam for his valuable comments on the statistical techniques used for this study.

I am also grateful to King Saud University, Abha branch, for granting me a financial support to pursue my postgraduate studies.

Finally, I wish to thank my wife for her patience and support for me throughout the various stages of this thesis. I should also thank my sons, Khalid and Abdulaziz, for being always source of inspiration and happiness. I pray to God to give them knowledge, wisdom and bright future.

Transliterations System

All translations and transliterations of Arabic texts and alphabets other than the QURĀNIC verses which are taken from "THE HOLY QURĀN English translation of the meanings and commentary" are those of the present writer unless otherwise stated.

English	Arabic
a, ā,	أ، آ، ا
b	ب
t	ت
th	ث
j	ج
h	ح
kh	خ
d	د
th	ذ
r	ر
z	ز
s	س
sh	ش

s	ص
d	ض
t	ط
dh	ظ
à	ع
gh	غ
f	ف
q	ق
k	ك
l	ل
m	م
n	ن
h	هـ
w, ú	و
y, i, í	ي

Abstract

The learner's first language (L1) plays a significant role in the learning of a second language (L2). This role is depicted as interfering with acquisition and production of (L2). The notion of interference has emerged as a legitimate area of linguistic investigation (Lado, 1957; Selinker, 1972; James, 1980).

This study explores and assesses the Arab learners' performance in using English spatial prepositions. It focuses on the role of the Arab learners' first language in learning English, particularly spatial prepositions, as a second/foreign language.

The data of this study consists of the results of five tests which are designed firstly: to examine the learners' performances in acquiring certain English prepositions, which are considered to be among the most difficult items for Arab learners of English (Al-Sayed, 1983; Mukattash, 1985; Zughoul, 1979); and secondly to assess the degree of interference from Arabic in learning English spatial prepositions, the main objective of this study.

Three statistical techniques were employed in analysing the data: The ANOVA test, regression analysis and chi-square test. These procedures were used to examine performance of the learners over the years, possible sources of errors, and the interchangeability of English spatial prepositions in the responses to tests.

The results of this study confirm that a high percentage (48%) of errors committed in the use of English spatial prepositions by Arab learners of English can be attributed to the influence exerted by their first language (Arabic). These findings support the claims of Tadros (1966), Scott and Tucker (1974) and Mukattash (1988).

Table of contents

CHAPTER ONE.....	1
INTRODUCTION	1
1.1 Preliminaries	1
1.2 Statement of the Problem	3
1.3 Purpose of the Study	4
1.4 Hypotheses.....	5
1.5 Scope of the Study	6
1.6 Arabic as a National Language	7
1.7 English in Saudi Arabia	11
CHAPTER TWO.....	13
REVIEW OF RELATED THEORIES IN SLA AND THE ROLE OF THE LEARNERS' L1	13
2.1 Introduction.....	13
2.2 Language Acquisition	13
2.2.1 The Behaviourist Approach.....	14
2.2.2 The Nativist Theory.....	16
2.2.3 Functional Theory.....	20
2.3 Second Language Acquisition (SLA)	20
2.4 The Role of the First Language.....	22
2.5 Language Transfer.....	23

2.5.1 Distance	28
2.5.2 Cognitive Development	29
2.5.3 Is Transfer a Process?.....	31
2.5.4 Transfer of training.....	34
2.5.5 Criticisms of Language Transfer	35
2.6 Interference.....	37
2.6.1 Significance of Interference.....	39
2.7 Contrastive Analysis.....	40
2.7.1 The Strong Version	42
2.7.2 The Weak Version.....	46
2.7.3 Pedagogical Use of CA.....	47
2.7.4 CA: Summary.....	51
2.8 Error Analysis.....	53
2.9 Interlanguage	61
2.9.1 IL Hypothesis.....	64
2.9.2 Fossilisation.....	65
2.9.3 Systematicity and Variability in IL	67
2.10 Conclusion.....	69
CHAPTER THREE.....	71
DISTINCTIONS BETWEEN ARABIC AND ENGLISH	
SPATIAL PREPOSITIONS	71
3.1 Introduction	71
3.2 Definition of "Preposition"	72
3.3 English Spatial Prepositions.....	76
3.4 Acquisition of English Spatial Prepositions by L1 Learners.....	90
3.5 Acquisition of English Spatial Prepositions by L2 Learners.....	93

3.6 Arabic Spatial Prepositions	95
3.6.1 'bi-' = <i>in, at, by, with</i>	98
3.6.2 'fi' = <i>in, at</i>	103
3.6.3 'alā' = <i>on</i>	107
3.7 Locative Adverbs	109
3.7.1 'bayna' = <i>between, among(st)</i>	111
3.7.2 'inda' = <i>at, by, with, near</i>	112
3.7.3 'amāma' and 'quddama' = <i>in front of</i>	116
3.7.4 'tahta' = <i>underneath, under, beneath, below</i>	117
3.7.5 'dúna' = <i>below, near</i>	118
3.7.6 'asfla' = <i>below</i>	119
3.7.7 'fawqa' = <i>above, on, on top of, over</i>	119
3.7.8 'wasta' = <i>among(st), in the middle of</i>	121
3.7.9 'khalfa' and 'warā' = <i>behind</i>	121
CHAPTER FOUR	123
RESEARCH METHODOLOGY	123
4.1 Introduction	123
4.2 Hypotheses	123
4.3 Subjects.....	124
4.4 Instrument.....	126
4.4.1 Introduction.....	126
4.4.2 Fill-in-the-blank Test (FBT).....	127
4.4.3 Picture Test (PT).....	129
4.4.4 Translation Tests (ATT, ETT)	130
4.4.5 Composition Test (CT)	133
4.5 Data Collection Procedure.....	135
4.6 Analytical Statistical Techniques	136
4.6.1 ANOVA.....	136
4.6.2 Chi-Square.....	136

4.6.3 Regression.....	137
CHAPTER FIVE	138
DATA ANALYSIS AND RESULTS.....	138
5.1 Introduction.....	138
5.2 Learners' Performance.....	139
5.3 Composition Test (CT)	147
5.4 The Hypotheses	150
5.4.1 Hypothesis 1.....	150
5.4.2 Hypothesis 2.....	153
5.4.3 Hypothesis 3.....	155
5.4.4 Hypothesis 4.....	158
5.4.5 Hypothesis 5.....	159
CHAPTER SIX.....	162
DISCUSSIONS AND INTERPRETATIONS OF RESULTS.....	162
6.1 Introduction.....	162
6.2 Learners' General Performance	163
6.2.1 Summary	186
6.2.1.1 Lack of progress	188
6.2.1.2 Year 2 scores.....	189
6.2.1.3 PT and FBT scores.....	190
6.2.1.4 The translation tests	191
6.2.1.5 Composition test.....	193
6.2.1.6 Acquisition order.....	195
6.3 L1 (Arabic) Interference in the Acquisition of English Spatial Prepositions.....	203
6.3.1 Introduction	203

6.3.2 Definition of Terms.....	204
6.4 Hypotheses	214
6.4.1 Hypothesis 1.....	214
6.4.2 Hypothesis 2.....	224
6.4.3 Hypothesis 3.....	231
6.4.4 Hypothesis 4.....	241
6.4.5 Hypothesis 5.....	244
CHAPTER SEVEN	249
SUMMARY, EVALUATION AND CONCLUSIONS.....	249
7.1 Introduction.....	249
7.2 Summary	249
7.3 Evaluation.....	252
7.4 Conclusion	256
Appendix 1 Fill-in-the-blank Test (FBT)	261
Appendix 2 Picture Test (PT)	263
Appendix 3 Arabic Translation Test (ATT).....	267
Appendix 4 English Translation Test (ETT).....	271
Appendix 5 Composition Test (CT)	275
Bibliography	277

CHAPTER ONE

INTRODUCTION

1.1 Preliminaries

Teaching and learning English as a second/foreign language has become a topic of interest to many linguists. C. Fries (1945) is one of those who have imbued the field of teaching English as a second language with new teaching methodologies, and incorporated linguistics into second language teaching materials. This new interest has led many linguists to discuss the source of errors which are made by second language learners.

Theories in linguistics about language universals, including the ability to learn language, such as transformational grammar (Chomsky, 1965) and cognitive theory (Lenneberg, 1967), have emerged. In addition, other theories (e.g. Contrastive Analysis, Error Analysis, Interlanguage) have inspired research on second language acquisition. The primary aim of these theories is to discuss and tackle the source of learning difficulties, which are attributed mostly to language transfer where the learner's first

language interferes when learning a second language. These theories have emerged from and defined a legitimate area of linguistic investigation (Corder, 1967; James, 1980; Richards, 1974 and Selinker, 1972).

Interference of the first language (L1) in the learning of the second language (L2) is claimed to be evident (Lado, 1957). On the other hand, some studies claim that errors made by second language learners cannot necessarily be attributed to L1 interference (Dulay and Burt, 1973 and 1974 and Dulay, Burt and Krashen, 1982) despite the warnings made by Stern (1970:64):

The presence of the first language in the individual as a second language learner is a factor that cannot and must not be ignored. The claim that it would be possible to repeat the first language acquisition process in second language instruction is an illusion.

Interference frequently takes place in L2 learning and can be found in all levels: phonology, morphology, syntax, semantics, and lexis (Lehiste, 1988).

Mukattash (1988) similarly maintains that a large number of errors made by Arab learners of English are attributable to the interference of Arabic.

1.2 Statement of the Problem

Acquiring proficiency in a second language requires hard work and a long period of practice; in the process of learning a second language, a student faces many difficulties. One of these difficulties concerns the correct usage of prepositions.

In the process of learning, it has been claimed that the learner's first language interferes with or conditions the use of prepositions of the second language; one problem in learning a new language results from interference from the first language, L1. Fries, in his foreword to Lado's "Linguistics across cultures" (1957: Foreword), states:

A child in learning his native language had learned not only to attend to the particular contrasts that function as signals in that language; he also learned to ignore all those features that do not so function. ... The basic problems arise not out of any essential difficulty in the features of the new language themselves but primarily out of the special "set" created by the first language habits.

In the case in point, the learner is conditioned by his/her first language when learning the prepositions of a second language since they have different roles and features from those of the first language. Arab learners encounter problems when learning English specifically with the use of prepositions and the use of prepositions in Arabic, governed by the Arabic language rules and systems, differs significantly from the use of English prepositions. This study focuses on the sources of errors made by Saudi Arabian college students in the use of English spatial prepositions.

The acquisition of English spatial prepositions in childhood by native speakers of English has been one of the syntactic areas in first language acquisition which has been of interest to many linguists and psychologists (e.g. Clark, 1973; Clark, 1976; Cox, 1979 and Stockman and Vaughn-Cooke, 1992).

In the area of second language acquisition (SLA), there are few studies that deal with the acquisition of English prepositions by speakers of other languages in general and by native Arabic-speaking learners in particular. The studies carried out on Arab learners of English reveal that: a) spatial prepositions cause more difficulty than other prepositions; b) a high percentage of errors committed are due to the interference of Arabic prepositions (see Al-Sayed, 1982; Naser, 1983; Bourenane, 1984 and Mukattash, 1985).

1.3 Purpose of the Study

The purpose of this study is to describe and explain the problems that Arab learners encounter when learning English as a second language, especially with the acquisition of English spatial prepositions. Arab learners (Saudi Arabian learners, in particular) as well as teachers of a second language will benefit from this study, which intends to provide new insights into common problems which have otherwise been overlooked by many researchers and linguists in the field of second language acquisition in the Arab world.

In this respect the study is of interest to linguists from Saudi Arabia as well as to those from the English-speaking countries where most of the English teaching syllabuses and linguistic theories are developed.

It is further to be hoped that Saudi Arabian learners of English will be made aware of the problems which they are likely to encounter in terms of the usage of English spatial prepositions.

As a result of the findings of this study, it will be possible to re-examine the approaches that have been used in teaching English in Saudi Arabia, particularly at university level.

1.4 Hypotheses

The goal of this study is to test and assess the following hypotheses:

- 1) Standard Arabic will interfere with Arab learners' acquisition of English spatial prepositions.
- 2) Arabic dialects will interfere in Arab learners' acquisition of English spatial prepositions.
- 3) Arab learners will tend to have difficulty determining which English spatial preposition is appropriate in contexts where there is a shared primary counterpart in Arabic.

- 4) Arab learners will tend to omit spatial prepositions in English where there is no preposition in the equivalent Arabic context.
- 5) Arab learners will tend to use English spatial prepositions incorrectly in contexts where their use is different from the use of their counterparts in Arabic.

1.5 Scope of the Study

This study investigates the acquisition of English spatial prepositions as well as the role of their counterparts in Arabic. The study focuses on Saudi Arabia which is the country of the researcher, and where it is therefore feasible to carry out an investigation.

For the purpose of carrying out the necessary experiments (tests) to support the main objectives of this research, students from King Saud University, Abha branch, were selected to participate in the study. King Saud University was selected because it has a well-established department of English.

This study focuses on ten English spatial prepositions: *at, on, in, above, below, under, among(st), between, behind, and in front of*. These ten prepositions have been identified as the ones which cause considerable problems in their usage and application by Arab learners. Mukattash (1985) states:

English prepositions are an everlasting problem for Arab learners of English. Indeed, they are notoriously difficult and do not cease to cause confusion and uncertainty to Arab learners even at a fairly advanced level of learning.

From the Arabic side, this study will look at the Arabic spatial prepositions (*hurúf-al-jarr*), 'fí' = *in* and *at*, 'bi' = *in*, *at* and *by* and 'àlā' = *on*, and the adverbs of place which embody locative notions, for example, 'tahta' = *under*, 'inda' = *at*, and 'fawqa' = *above*.

Because of logistical problems and the fact that the researcher is based in the UK where he is studying, it was considered impossible to cover more than one university from which to select students for the investigation. Furthermore, the assumption is that the Saudi Arabian population is homogeneous in terms of culture and language, which means the sample which is selected for the study would yield results that can be statistically generalised as representing the general trends in the country.

1.6 Arabic as a National Language

Arabic is the official language of Saudi Arabia and the first language of all nationals of the country. Arabic is the language of Islam and the traditional vehicle of Islamic civilisation. The government states that Arabic is the language of law, politics, education, and of all cultural aspects in Saudi Arabia, except when there is a need for a foreign language (which is usually English). Although Standard Arabic is the medium of instruction and is supposedly spoken by all educated people,

Arabic varieties (dialects) are spoken by a majority of people. These dialects are not formally acknowledged by most Arabic linguists nor do ordinary people agree to be categorised by their dialects as this might imply inferior status. However, a few decades ago, C. A. Ferguson (1959:325-340) in his article, which has become a classic, dealt with Arabic among other languages (e.g. Modern Greek and Swiss German) from a diglossic viewpoint. Ferguson (1959:336) defines diglossia as:

... a relatively stable language situation in which, in addition to the primary dialects of the language (which may include a standard or regional standards) there is a very divergent, highly codified (often grammatically more complex) superposed variety, the vehicle of a large and respected body of written literature either of an earlier period or in another speech community, which is learned largely by formal education and is used for most written and formal spoken purposes, but not used by any sector of the community for ordinary conversation.

In all of the Arab countries, 'standard' or 'literary' Arabic is the normative variety alongside the, colloquial, dialectal varieties of each region. Only standard Arabic is taught in schools and higher institutions of learning throughout the Arab region.

In view of this situation, the question arises: how does this variety of the Arabic language affect Arab learners of English? Mackey (1965:80), who believes in the validity of contrastive analysis, says:

if we subtract the characteristics of the first language from those of the second, what presumably remains is a list of the learner's difficulties.

With respect to Arabic, the question that ought to be addressed is "what is the first language?" Is it the standard or the colloquial Arabic? And what is the significance, if any, of this distinction with respect to 1st and 2nd language acquisition? Colloquial Arabic is acquired as a "first" language by most Arabs today; it is the ordinary speech that is used for the informal conversations of the communities. However, while standard Arabic is considered to be merely a special variety of the first language in Saudi Arabia and Yemen, because their dialects differ very little from standard Arabic, it is almost a kind of "second language" in some Arab countries whose dialect may differ considerably from standard Arabic even though standard Arabic is acquired through formal education, and is used in the media and written literature (the exception is folk literature, which uses the medium of colloquial Arabic).

This diglossic situation in Arabic leads to diverse interpretations of what form of Arabic the first language is and therefore how this would influence the process of learning of a second language. This viewpoint has been discussed in two ways:

- a) The learners' dialect of spoken Arabic alone should be considered to be the learners' first language. An example of this attitude is that of Lehn and Slager (1959), who made it clear that they consider colloquial Egyptian Arabic alone to be the Egyptian students' first language.

- b) Standard Arabic should be considered to be the Arab students' first language. The proponents of this approach exclude the possibility of any comparison between English (or any other language) and any dialect of spoken Arabic. An instance of this approach can be seen in Nasr (1963), where some aspects of standard Arabic and English were contrasted for the benefit of teaching English to Arab learners.

The above claims are not acceptable for the following reasons :

- 1) Those who consider that colloquial Arabic alone is the first language forget that among the errors which Arab learners of English make there are some errors which cannot be accounted for except with reference to standard Arabic. Furthermore, this attitude ignores an important cultural fact concerning the diglossic situation of Arabic. With regard to this situation, Fishman (1966:142) says that:

The superimposed variety is not viewed as a foreign tongue, and it is not merely a symbol of status snobbery. It is a cultural positive of all the people.

- 2) The proponents of standard Arabic forget that it is acquired through formal education and not as a first (native) language by most Arabs today. The colloquial dialects are acquired as first (native) languages and, because of this fact, cannot be ignored in any consideration of teaching a second language to Arab learners.

A more realistic approach is to consider both colloquial Arabic and standard Arabic as the basis of spoken Arabic today, in particular in Saudi Arabia and Yemen, where the colloquial dialects are relatively close to standard Arabic. In countries such as those of North Africa, the local dialects are more divergent from standard Arabic. In respect of this approach, Ibrahim (1977:159) maintains that:

This possibility is actually more than logical necessity, for it represents a ... plausible approach to the Arab students' difficulties in learning English (or ... in learning any other foreign language).

A full description of Arabic variation is beyond the scope of this study; however, interference from both standard (H) and dialect (L) forms of Arabic in learning English spatial prepositions is examined below (see Ch. Six) in spite of the difficulties which Ibrahim (1977:159) describes:

Since classical and spoken Arabic have a lot in common in the realms of phonology, lexicon, and syntax it is often impossible to decide whether a certain error should be attributed to the learners' knowledge of classical Arabic or to his native dialect.

1.7 English in Saudi Arabia

In Saudi Arabia, the English language has become important as a result of technological developments. It has become the medium of instruction at university level in the fields of science, medicine, and engineering.

The teaching of English starts in the first level of the middle grade, at the age of thirteen, and continues through secondary school. The use of English plays a vital role in the strong economic and political relations between Saudi Arabia and the western countries. English is widely used by professional people and businessmen. Moreover, a large number of educated people receive their higher education in English-speaking countries (e.g. Great Britain and the United States).

CHAPTER TWO

REVIEW OF RELATED THEORIES IN SLA AND THE ROLE OF THE LEARNERS' L1

2.1 Introduction

The main concern of this chapter is to highlight the major issues in the area of language acquisition (LA), particularly of first and second languages. These issues are related to the present study and should therefore be reviewed. The areas of research are: language acquisition and theories of first language acquisition; second language acquisition; the role of the first language; language transfer; interference; contrastive analysis; error analysis; and interlanguage.

2.2 Language Acquisition

Children do not usually have difficulties in acquiring their first language or languages. As they reach the age of one year, they begin to attempt to

imitate words or sounds around them. Young children can understand or comprehend a great deal of linguistic behaviour and they continue to produce increasingly complete structures with fluency until they reach school age (Brown, 1987).

Different theoretical positions have emerged in the study of first language (henceforth L1) acquisition. The three main theories representing contrasting views will be briefly examined. The behaviourist position is that children come into this world with no knowledge about the world or language; consequently they are conditioned or shaped by the environment around them. On the other hand, the nativist theory claims that children come to this world with specific innate grammatical knowledge of the nature of language. The third position is that of functionalism, which deals with language and language use in a broader cognitive context than the nativist theory (see Skinner, 1957; Chomsky, 1959 and Slobin, 1985).

2.2.1 The Behaviourist Approach

The behaviourist approach focuses on language as a pattern of correct behavioural responses to the stimuli of the events of the surrounding world. Brown (1987:17) states that:

According to Skinner, verbal behavior, like other behavior, is controlled by its consequences. When consequences are rewarding, behavior is maintained and is increased in strength and perhaps frequency.

B. F. Skinner is well-known for his construction of a behaviourist model of linguistic behaviour, which is presented in his classic work Verbal Behaviour (1957). Skinner believes that language can be explained within reinforcement theory, and suggests that talking and listening are responses that are influenced by reinforcement. He classifies verbal responses as: Mand, Tact, Echoic Behaviour and Autoclitic Behaviour.

Skinner (1957:37) describes Mand, which appears early in the language behaviour of the child, as:

characterized by the unique relationship between the form of the response and the reinforcement characteristically received in a given verbal community.

A second function is Tact, which is largely concerned with appropriately naming objects or events in the environment, and its reinforcement comes from other people who reinforce what seems to be a match between the environment and the language. Skinner (1957:81) explains this in the following way:

This type of operant is exemplified when, in the presence of a doll, a child frequently achieves some sort of generalized reinforcement by saying "doll"; ...

A third term is Echoic Behaviour. According to Skinner, it is a prerequisite to more complicated behaviour: that is, a child must imitate a word before he/she can learn how that word is related to other words or events.

A fourth term is Autoclitic Behaviour, which provides a grammatical framework for language. Skinner (1957:315) defines the term 'autoclitic' as:

... intended to suggest behavior which is based upon or depends upon other verbal behavior.

Reinforcement results in 'operant conditioning', where a human being produces a response (e.g. a sentence) without necessarily any stimuli: the operant has been learned by reinforcement.

Skinner's theory in Verbal Behaviour made a great contribution to acquisition theory, and to our understanding of the human learning process; however its significance has receded in the light of later theories of LA.

2.2.2 The Nativist Theory

The central question in the study of language acquisition is that of how a child is able to achieve, within a few years, full and expert knowledge of the structure, or grammar, of its first language. McNeill (1968: 412) criticised the behaviourist theory saying that:

because S-R theory is so limited, the problem of language acquisition simply falls beyond its domain.

Chomsky's (1959) review of Skinner's Verbal Behavior (1957) gives the most severe critique of Skinner's explanation of linguistic behaviour. He

argues that knowledge of a multitude of stimulus and response (S-R) relations does not alone give an explanation for behaviour. Our task is to understand the internal structure and organisation of the organism that underlies and produces such S-R relations.

In his arguments against the validity of Skinner's concepts of stimulus, response, reinforcement, and response strength, Chomsky adopts the main line of cognitive psychology and psycholinguistics. This is that there are some difficulties with Skinner's position in that there seems no way to identify reinforcers that will be effective for all occasions and for strengthening any and every response. He strongly criticises Skinner's attempts to extrapolate his concepts of what Chomsky calls the "rat-in-a-Skinner-box" domain to the phenomena of human mental and social life. Chomsky's argument is that the concepts of common-sense terms such as **want**, **like**, and **plan** are inadequately translated into three-term contingencies by Skinner's system.

In attempting to explain how the child can achieve adult language within a short period of two or three years, Chomsky (1965) and McNeill (1966) proposed an theory of innate developmental psycholinguistics. Interpreting recent empirical studies in the light of transformational linguistic theory, they argued that children must come to the language situation equipped with a language acquisition device (LAD) that includes both formal and substantive linguistic universals.

The term 'nativist' refers to this idea that the foundations of language acquisition are innately determined. That is, children are born not with a clean slate as behaviourists claim but with a built-in device that helps

them to recognise and acquire elements of the language around them. These elements correspond to an innate, or “pre-wired”, knowledge of universal grammatical principles, known as UG. Eric Lenneberg (1967) observes that since language is species-specific, behaviour and language-related mechanisms may well be biologically determined.

McNeill (1966) described the LAD as consisting of four innate linguistic properties: (1) the ability to distinguish speech sounds from other sounds in the environment, (2) the capacity to organise linguistic events into various classes which can later be refined, (3) the knowledge that only a certain kind of linguistic system is possible and that other kinds are not, (4) the ability to engage in constant evaluation of the developing linguistic system.

Studies such as Brown (1973) revealed that the children who were observed in these studies passed through the same stages of grammatical development, moving from the earliest two-word utterances, at around the age of eighteen months, to hierarchical constructions of three or more words. These three-word "sentences" are commonly referred to as “telegraphic” utterances, (Brown, 1987).

A child's earliest productive grammar was interpreted in terms of **pivot** and **open class** words. The systematic increase of the use of the language by children as they grow up, combined with observation from studies of first language acquisition, support the rejection of the behaviourists' theory of language learning. Those observations could be summarised as follows:

Firstly, some of the children's utterances like **Allgone milk** were obviously not repetitions of adult speech, and could only be explained in terms of the systematic grammar of the child at a particular stage of development.

Secondly, overgeneralisation from newly acquired rules of the language, such as the regular past tense, was another example of rule-formation taking place. Even when the correct irregular form of the verb had been learned and used, the children tended to apply the regular rule to the verb, which led them to produce such deviations as **comed** and **goed**.

Thus Brown (1987:22) writes:

Nativistic approaches to child language made at least two important contributions to the understanding of the first language process: (1) freedom from the restrictions of the "scientific method" to explore the unseen, unobservable, ... abstract linguistic structures being developed in the child; (2) description of the child's language as a legitimate, rule-governed, consistent system.

The idea that linguistic competence is based on the activation of innate psychological structures rather than merely on habits acquired through responses to external stimuli suggests that if there is negative transfer from L1 in second language acquisition the cause may run deeper than anticipated by the behaviourists, and that errors in L2 production may result from the learners' efforts to apply UG principles to the L2 rather than from simple L1 interference. These views will be discussed below.

2.2.3 Functional Theory

The generative rules within the nativists' framework are concerned with linguistic form, whilst the functional theory deals with the broader context of language, the level of memory, thought, and meaning in the structure of the human mind. The functional theory claims that language cannot be detached from the overall human cognitive, affective and volitional framework. Language works as a manifestation of development and an aspect of cognition that helps us to deal with the environment around us and with ourselves, so that cognitive development is an essential factor in language acquisition. Bloom (1978) and Slobin (1985), among others, believe that language learning depends on cognitive development, which is an important base for linguistic behaviour.

2.3 Second Language Acquisition (SLA)

Second Language Acquisition (SLA) is a broad term which includes all aspects of language that the learner needs to acquire. The field of SLA has been investigated from different points of view by many linguists. These different approaches and views make it very difficult to reach a unified or clear understanding of the field of SLA. Nonetheless, a discussion of a wide range of works and theories will be conducted in order to provide a theoretical background to this study.

There are theories of SLA based on the notion that a learner develops the habit of forming his/her language through practice and reinforcement (e.g. the behaviourist theory). The process of learning a second language (L2) would then be controlled by the amount or complexity of the language introduced to the learner. The features of the language would become familiar by ensuring continuity of learning and practice. Furthermore, learning a second language from the behaviourists' point of view relies on building up chains of stimulus-response. However, the view of the behaviourists, which looks at the learner as a passive participant in the process of language acquisition, has been challenged. Ellis (1985:12) comments:

In this behaviourist view of learning there was little room for any active processing by learner. Language learning - first or second - was an external not internal phenomenon.

As noted earlier (see Section 2.2.2), in the early 1970s a new theory emerged challenging the views of the behaviourists, expounded most notably by Chomsky. The theme of this theory is that there are innate mental processes in the learner's mind which enable the learner to recognise and develop linguistic structures. These processes derive from what Chomsky calls the Language Acquisition Device (LAD). From the nativist point of view, this Device, rather than the environment, is believed to play the major role in language learning and acquisition (including SLA). In addition, other researchers have focused on the acquisition process through change in the learner's production and comprehension performance, not only through grammatical competence.

The Cognitive theory is more concerned with the form of acquisition from a practical or pragmatic point of view. McLaughlin (1987:133) said:

It represents the application of a broader framework to the domain of second language research.

It also considers the process of learning a second language as the acquisition of a complex of cognitive skills.

Finally, the field of second language research has been presented in a wide array of findings which, it has been claimed (Klein, 1990 and 1991), have moved us closer to an understanding of the acquisition process but which, it has also been suggested (Gregg, 1989), presents more puzzles than it resolves.

2.4 The Role of the First Language

The learner's first language (L1) plays a crucial role in the acquisition of the second language (L2). This role is sometimes depicted as interfering with the production of the second language (L2). Such interference is clearly exhibited in the foreign accents in the second language (L2) speech of learners. Arab learners for example do not differentiate between /b/ and /p/ sounds in English because of the unavailability of the sound /p/ in Arabic, which causes the interference of the /b/ sound. This type of interference is an example of negative transfer, where the features of L1 are inappropriately transferred into L2.

More positively, it has been argued that L2 learners use the principles and parameters which are used to acquire and construct L1. In cases

where L1 grammatical principles differ from those of L2, second language learners rely upon the grammatical principles of their first language to guide them in constructing those of the second language (see Flynn, 1989).

Many linguists believe that knowledge of L1 acquisition is an essential principle or foundation to understanding SLA. Brown (1987:16) writes,

A coherent grasp of the nature of first language learning is an invaluable aid, if not an essential component, in the construction of a theory of second language acquisition.

Studies of second language acquisition have indeed benefited from those of first language acquisition. First language acquisition studies serve as a baseline to understanding second language acquisition. Ellis (1992:2) states,

... studies of L1 acquisition informed early work in L2 acquisition in a number of ways. First, they demonstrated that it was possible to investigate how language was acquired in valid reliable ways. Second, they offered a set of methodological procedures that could be used equally well in the study of L2 acquisition. Third, they provided a body of descriptive information about how children acquired English as their L1 which could serve as a baseline for investigating how learners acquired English as an L2.

2.5 Language Transfer

The notion of language transfer (Selinker, 1969) refers to the process through which the learner's previous linguistic knowledge (L1)

influences his/her learning and performance in the target language (TL) (Di Pietro, 1971 and Kellerman, 1977). Language transfer refers to a cognitive strategy employed by L2 learners when they approach the task of learning a second language. The term language transfer, referring to either a process or a strategy, exists in two types: positive and negative (Selinker, 1983).

Corder's (1967) observation on the issue of language transfer is that a large number of errors of second language learners are transfer errors from their native languages.

Some of the earliest systematic studies of language learners' errors were carried out by Corder (1967, 1971 and 1981) and Selinker (1969 and 1972) among others. Learners were seen as actively constructing their own linguistic systems based on the data available to them, and the claim was that a systematic study of the language learner's language (interlanguage) system would yield a great deal of insight into the kinds of strategies that the learners used.

Although second language learners possess faculties that are actively involved in the learning process, the importance of the influence of the first language on the learning of a second language remains undiminished. Corder (1967) defines the role of L1, as well as the contribution of linguistics and psychology to second language acquisition. Corder (1981:5) writes:

The application of linguistic and psychological theory to the study of language learning added a new dimension to the discussion of errors; people now believed they had a principled means for accounting for these errors, namely

that they were the result of interference in the learning of a second language from the habits of the first language.

Selinker (1972) claims that observable data relevant to the study of learners' interlanguage are: (a) utterances in the learner's native language, (b) the learner's interlanguage and (c) target language utterances by native speakers of the target language. Therefore, the notion of language transfer is central and it is the idea of a comparison of the learners' native language system with the target language's system. The errors of the language learner are seen merely as resulting from the interference of one system with the other.

Selinker (1969:90) defines language transfer in terms of "binary choices"; he states that:

Whenever there are such binary choices, *Language Transfer* may be operationally defined as a process occurring from the native to the foreign if frequency analysis shows that a statistically significant trend in the speaker's native language is then paralleled by a significant trend toward the same alternative in the speaker's interlanguage behavior, ...

The above definition of transfer is proposed by Selinker as an operational definition of language transfer in terms of any native and foreign language situation.

Gass (1983) examines language transfer in terms of universal grammatical relations, and addresses "background fundamental issues", for example that of what types of language phenomena are generally transferable. Gass focuses on relative clause formation as a specific syntactic construction, and she takes her point of departure from work by

Keenan & Comrie (1977) and Comrie & Keenan (1979) on relative clause formation. They claim that there exists a universal hierarchy out of which items can be relativised, and that if a constituent can be relativised out of any given position on the hierarchy, it can be relativised out of all higher positions as well. Although Gass (1983:71) concludes that:

seemingly contradictory evidence as to whether or not language transfer is present to any significant degree has been presented.

She has made an important contribution to the discussion of language transfer.

She demonstrates in her study that language transfer cannot be viewed as a simple process that can be easily identified and isolated. Gass (1983:80) claims:

It is apparent from this study that the likelihood of transferability of linguistic phenomena must take into account both target language facts and rules of universal grammar.

In Gass (1980), she presents the following hypothesis:

Universal factors determine the general outline of learning. Language specific considerations (of either the native or the target language) can come into play only where universal factors underdetermine the result.

Gass (1983:79-80) concludes her work on language transfer by hypothesising three characteristics in predicting language transfer: 1) the most salient characteristic is the involvement of the "surface" features

which are crucial in instances of phonological transfer; 2) the "distance" between the relevant structures in the TL and the transferred pattern in the interlanguage and 3) the closeness of the interlanguage form to the underlying logical structures of relative clauses. In support of the factors stated above, Gass (1983:80) states that:

Even though we are unable to determine at present which of these factors is dominant and what interplay between them might be, we hypothesise that these three characteristics are universally valid in predicting language transfer.

Gass's work, focuses on syntactic structures in order to determine the extent to which possible "universal" linguistic rules as evident in linguistic behaviour. She believes that such universals are more observable in second language learning than in first language acquisition (Gass, 1984), and comments on evidence of transfer in the area of pronoun retention in relative clause formation (Gass, 1980) and the placement of object pronouns (Gass, 1984).

Ard and Homburg (1983), in another study, investigated the responses of native Spanish and Arabic speakers to vocabulary questions on one version of the standardised Michigan Test, using a statistical procedure to compare the overall shapes of the response curves of the two groups. The result of this study demonstrates that:

- (1) Spanish speakers performed significantly better than Arabic speakers.
- (2) There is evidence of native language influence in lexical learning.

- (3) There is native language effect even in the absence of similarity between native and target languages.

Hakuta (1976:342) writes, in response to some studies that point out the inadequacy of language transfer, that:

We must broaden our perspective in looking into the effects that the native language has on second language acquisition. In fact, it is impossible to prove that there is no language transfer, for there always remains the possibility that the researcher is simply looking at the wrong place. Finding a low percentage of acquisition for a restricted set of grammatical morphemes is no licence to jump to the conclusion that everything must be due to "universal cognitive mechanisms".

2.5.1 Distance

Kellerman (1979) suggests that language transfer has to do with the learners' perception of the distance between the native and target language. The contrastive analysis (see Section 2.7) hypothesis implies that the greater the distance between the native and the target languages, the greater the interference of the native language with the learning of the target language. In contrast, Kellerman (1979:39) claims that:

The greater the distance, perceptually, between NL and TL, the lower the incidence of interference.

The main evidence for this claim comes from studies carried out by Kellerman. These studies involve subjects who already speak two

languages and are involved in learning a third one. Schachter et al's (1976) findings, cited in Kellerman (1979), support Kellerman's idea of distance; they found that Arabic-speaking learners of English tended (a) to accept English relative clauses as correct, (b) not to accept Arabic-based English relative clauses and (c) not to accept English relative clauses based on other languages. The reason for this is that the Arabic speakers, who turned out to be bilinguals in French in this particular experiment, had come to see a closer relationship between English and French than between Arabic and English.

Kellerman (1979:40) describes the attitude of L2 learners towards language transfer. He states:

If he believes that in a relevant point of linguistic detail, or in very general terms, NL and TL are in some senses "the same", or that there is a good chance that they are, transfer is on the cards.

To find evidence for this, Kellerman describes his experiment's results as involving a shift from "strongly strategic" to "knowledgeable" in the judgements of the learners. The learner's view of his native language and the target language is a strong factor affecting language transfer, and can also be viewed as facilitating an important learning strategy.

2.5.2 Cognitive Development

The image of the L2 learner has changed from an externally controlled "passive" being, to an "active" being, who develops his own linguistic

system for the TL. This way of viewing L2 learners fits cognitive learning theory, which stresses that learning is essentially a matter of meaningful dynamics in which the individual constantly reconstructs his cognitive field.

Brown (1987:83) adopts a cognitive view of second language learning and explains his view of language transfer and overgeneralisation:

First, interference and overgeneralisation are the negative counterparts of the facilitating strategies of transfer and generalization. Second, while they are indeed aspects of somewhat different strategies, they represent fundamental and interrelated components of all human learning. Interference of the first language in the second is simply a form of generalization that takes prior first language experiences and applies them incorrectly ... all generalizing involves transfer, and all transfer involves generalizing.

Corder (1981) argues that L2 learning involves two processes: (a) a restructuring continuum and (b) a recreating continuum. The notions of restructuring and recreating suggest discussing language transfer and overgeneralisation within a single model of L2 learning. Restructuring operates in the reorganisation of L1-dependent hypotheses, while recreating operates in the reorganisation of L1-independent hypotheses.

L2 learning occurs as a function of the learners actively applying a hypothesis-testing process, which can be constrained by their knowledge about the target language (Zobl, 1982). In this sense, language transfer can be viewed as a part of a “creative” hypothesis-testing process (Kellerman, 1979).

B. Taylor (1975) suggested that the acquisition of some syntactic structures characteristically occurs with restructuring in the early stages of L2 learning, and later with recreating.

2.5.3 Is Transfer a Process?

Despite the claims of the studies stated above that language transfer is a process (Gass, 1980 and 1984 and Selinker, 1969), it is instructive to look at this notion from a different perspective. To begin the discussion as to whether transfer is a process or not, the paragraphs of Schachter's article (1983:98) may be quoted in some detail:

Many of us have, for some time, thought of transfer as a process. Transfer was something that the learner did. In fact, the very word itself implies some sort of a process. We say "the learner transferred" a structure, phone, or lexical item from one language to another, and when we do we envision some sort of action or movement, even though it may be an abstract action or movement.

My current view is that transfer is not a process at all, and is in fact a misnamed phenomenon ... an unnecessary carryover from the heyday of behaviourism. What is currently viewed as evidence for the process of transfer is more appropriately viewed as evidence of a constraint on the learners' hypothesis testing process. It is both a facilitating and a limiting condition on the hypothesis testing process, but it is not in and of itself a process.

Schachter's approach to analysing transfer data is based on the work done by psychologists. She adapts Levin's (1975) "hypothesis theory" to

adult language learning. The hypothesis theory claims the following: (a) the learner has available a universe of hypotheses; (b) the hypotheses are clustered into domains; (c) the learner chooses a domain and samples hypotheses within it and; (d) the learner tests the hypotheses against the input.

Schachter's adaptation of the hypothesis theory by Levin leads her to formulate what she calls the "transfer hypothesis". Schachter (1983:103) states that:

The learner infers from previous knowledge the domain within the universe from which the solution to the current target language problems will be taken. Then, the learner samples hypotheses from that domain.

She claims that within her framework, transfer error is more extensive than has been claimed by other researchers, due to the availability of various possible choices to the learner in the selection of domains and hypotheses.

Within Schachter's model, transfer refers to a set of constraints that one's previous knowledge imposes on the domains and from which one selects a hypothesis about the data one is dealing with. Schachter (1983:105) also maintains that:

There is simply no need to infer from transfer data an underlying process of transfer. It can be explicated more simply in terms of such basic concepts as inferencing and sampling behavior, domains and hypotheses, concepts which are headed within the model for other reasons anyway.

Schachter's understanding of the phenomenon (transfer) as a constraint rather than a process seems to be well-motivated. Her non-behaviourist, cognitive, account of transfer emphasises the fact that language learning is a primarily cognitive process.

James (1977:9) proposes to reconcile the behaviourist and cognitively-based views of language learning, claiming that:

A second language learning theory which allows for both a cognitive factor and the formation of habits could accommodate the discrepancies surrounding the concept of language transfer.

His point is that there often seems to be an interaction of both cognitive and behaviourist tendencies in adult language learners. The errors committed show both transfer and overgeneralisation. James (1977:12) comments on the way in which language transfer is accounted for in both aspects of learning:

The phenomenon of transfer must . . . be considered as part of both aspects of the learning process. On the cognitive level, one uses previous knowledge for the assimilation of the new language items which can result in facilitative effects, depending on the similarities between L1 and L2 or general linguistic knowledge of the learner, or in inhibiting effects of the L1 structure; attitudes and lack of general linguistic knowledge lead to a wrong assimilation of L2 elements. On the level of automatization, transfer occurs if the already developed habits are the same for L1 and L2, or when the old habits interfere, being better practised and more firmly established than the new habits.

A similar point is made by Flynn (1987), where a synthesis of these two aspects of language learning is attempted. She recognises that the behaviourist approach and the cognitive approach were each able to capture the sense of one important aspect of the language acquisition process.

2.5.4 Transfer of training

Some learners' errors seem to arise not from language transfer, but from other sources such as transfer of training, that is the influences that arise from the way learners are taught in classrooms (Odlin, 1989 and Selinker, 1972). While some influences from teaching are no doubt of benefit, others can induce errors that might not otherwise occur. Stenson (1974:54) says that:

A teacher may inadvertently mislead students by the way he defines a lexical item, or by the order in which he presents materials.

Felix (1981:106) notes that drills can produce errors such as the following:

Teacher: Am I your teacher?

Student: Yes, I am your teacher.

Felix observes that the student automatically uses the same pronouns that occurred in the teacher's question. He suggests that the student ignored

his L1 (German) interlingual assistance, for the German pronominal system is, with few exceptions, similar to the English one.

On the other hand, despite the fact that induced errors appear to contribute to the variables which characterise learners' interlanguage, the analysis of the data of this study does not enable us to determine whether certain errors are in fact induced errors. Furthermore, observation is an essential procedure in classroom situations in order to assess transfer of training, which is beyond the scope of this study. However, the teachers of the students involved in this study were all highly qualified native English speakers and it would therefore be unlikely that the errors observed were caused by any significant degree of transfer of training.

2.5.5 Criticisms of Language Transfer

Some empirical studies revealed that there are many cases of errors which cannot be attributed to the influence of the learners' first language. Cook's (1973) findings on comprehension of relative clauses by children acquiring English as their first language (L1) and adults acquiring English as a second language (L2) suggest that the adults' native languages did not play a significant role in the acquisition of English relative clauses.

It has become apparent that some linguists and teachers of L2 learners believe that transfer or the use of the first language cannot be considered the only active factor in the field of second language acquisition. Dulay and Burt (1974) claim that it is the second language, and not the native

language, that plays a significant role in the acquisition process. Language transfer has been dealt with as a general phenomenon, and it has been suggested that it should not be treated as a major factor in L2 learning (George, 1972). In this vein, Dulay, Burt and Krashen (1982:103) contend:

Studies conducted on the speech and writing of adults learning English as a second language have reached similar conclusions, namely, that the majority of non-phonological errors observed for adults do not reflect the first language. ... Approximately 8% to 23% of the adult errors may be classified as interlingual. Though this proportion is larger than it is for children, it still represents a minority of the total errors adults make.

There are other linguists who support the idea of minimising language transfer as a significant variable in the acquisition of a second language. Ervin-Trip's (1974) notion of a similarity between L1 and L2 acquisition supports the claims that have been made in criticising language transfer. Ervin-Trip (1974:126) states that:

The conclusion is tenable that first and second language learning is similar in natural situations.

An experiment by Ioup & Kruse (1977), cited in Gass (1980), reached the conclusion that there was minimal native language interference for adult English learners in the comprehension and grammaticality judgements of English relative clauses since the errors made by them were similar to those of children acquiring English as a native language.

The phenomenon referred to in the above discussion as 'negative transfer' has been recognised for some time and has been described as 'interference'.

2.6 Interference

The issue of interference has been a major concern of linguists since the beginning of the 20th century. Thus linguists in the 1940s and 50s, such as Fries (1945); Weinrich (1953); Lado (1957), and others in the 1960s focused on the similarities and differences between certain languages, which resulted in the emergence of the contrastive analysis hypothesis (CA).

CA maintains that second language learners' achievement in learning a foreign/second language is either easy or difficult depending on the features of both L1 and L2 . Lado (1957:2) states that:

... we assumed that the student who comes in contact with a foreign language will find some features of it quite easy and others extremely difficult.

James (1980:27) considers CA as “a form of linguistics” which adopts techniques of comparison in analysing language components in three areas: phonology, grammar, and lexis. The goal of CA is to juxtapose these three levels in both languages (L1 and L2) in order to establish criteria of comparison which can be helpful in avoiding the production of errors in the target language.

CA is founded on the hypothesis that the learners' native language (mother tongue) systems, depending on the degree of difficulty and the relationship between the two languages, interfere with those of the target language, which results in the production of certain structures that are deviant from the target language norms.

The writer has no reservation in saying that when an Arabic-speaking person learns English his first language will inevitably influence the English he produces because of the tendency to rely on direct translation in his search for appropriate structures in the target language.

According to Selinker (1983:50-51), there are three types or categories of language transfer:

- 1) Positive language transfer: This type happens whenever there is a similarity between two entities in two languages. These entities represent a kind of parallel predominance in the two languages. Such transfer is non-erroneous because it matches the linguistic entities of the two languages.
- 2) Negative language transfer: This type occurs when one element of the learners' native language plays a negative role in the learning of a second language. This type of transfer is erroneous in as much as it deviates from the norms of the target language.
- 3) Neutral language transfer: Neutral transfer happens when there are two linguistic entities in the learners' native language which are parallel to a similar pair in the second language, but one of

them matches that of the second language whilst the other does not. The latter type is erroneous, and the first type is not.

2.6.1 Significance of Interference

Contrastive studies have shown that the incidence of errors caused by mother tongue interference is high.

Richards (1971) found that 53% of the errors he observed were due to interlingual factors. Mukattash (1977) found 23% of the syntactic errors committed by his Arab students of English could be attributed to first language interference (Arabic).

Sheen (1980) came to the conclusion that negative transfer (NT) is the most important factor in causing lexical and grammatical errors. He found 79% of syntactic errors are due to mother tongue interference.

Mukattash (1988), in his article Persistent Fossilization, notes that the persistence of errors is attributed to interference from Arabic. Mukattash (1988:72) maintains that:

... a large number of the grammatical errors made by the subjects are in fact the result of interference from Arabic.

There are other studies, such as that of Broselow (1988), which claim that the errors of learners of Egyptian Arabic are the result of language transfer. Graham and Belnap (1988) also suggest that the acquisition of lexical boundaries in English by Spanish learners is consistently influenced by their mother tongue.

Tadros (1966) analysed syntactic errors in the compositions written by secondary school Sudanese students. She assumed that the frequency of occurrence of grammatical errors in the written English of these students was evidence of the interference of Arabic. In her analysis, she found that the largest number of errors is in the use of functional words, especially **prepositions** and articles. She concluded that 50% of the errors were due to Arabic interference.

Scott and Tucker (1974) examined the oral and written errors produced by twenty two Arabic-speaking students taking an intensive English course before being admitted to the American University of Beirut. The written production was elicited by the use of pictures which the students were asked to describe. The result of the analysis of their errors revealed that interference is clear in copula deletion, wrong tense etc. Interference of **prepositions**, however, is attributed to the several translations that English prepositions, such as *to* and *on*, have in Arabic.

These instances of interference indicate that a considerable portion of the second language learners' errors is due to the influence exerted by the mother tongue on the target language.

2.7 Contrastive Analysis

Contrastive analysis (CA) is an important field within the areas of applied linguistics that are relevant to second language acquisition (SLA) (Esser, 1980). The contrastive analysis approach emerged as an integral component of the field of foreign language teaching in 1945.

Charles Fries (1945) developed CA as a result of his observation that, in learning a foreign language, the learner tends to bring with him knowledge of the first language (L1). With regard to teaching a second language (L2), Fries suggested a comparative analysis of (L1) and (L2). Fries (1945:9) contends that for L2 teaching his contrastive analysis hypothesis (CAH) entails that:

The most effective materials are those that are based upon a scientific description of the language to be learned, carefully compared with a parallel description with the native language of the learner.

Lado (1957:2) further supports and clarifies Fries' statement, saying:

Those elements that are similar to his native language will be simple for him, and those elements that are different will be difficult.

He recommends that CA could therefore be utilised to address the teaching of the target language in a systematic fashion, based on the predicted difficulty of structures.

Esser (1980:182), in support of this idea, reports

... Contrastive analysis can ... predict or explain those errors that derive from structural differences between native and target language.

CA entails the description of both native language and target language and a comparison of those descriptions. Concerning the actual descriptions of the two languages, approaches from two different directions can be applied: the structuralist/behaviourist's approach,

which was advocated by Fries (1945) and Lado (1957), and the generative transformationalist's approach (Di Pietro, 1971).

Lado (1957) claims that a description of the differences between the target language and the native language is important in learning a foreign language. In his book, Linguistics Across Cultures (1957:preface) the most significant book in the early history of CA, he proposes the CA approach, stating that:

We can predict and describe the patterns that will cause difficulty in learning, and those that will not cause difficulty, by comparing systematically the language and culture of the student. In our view, the preparation of up-to-date pedagogical and experimental materials must be based on this kind of comparison.

Nickel (1971:15) acknowledges the task of contrastive analysis. He wrote:

Both the teacher and the author require a knowledge of contrastive grammar in order to predict, explain, correct and eliminate errors due to interference between source and target language.

2.7.1 The Strong Version

The contrastive analysis hypothesis started from its early days with the assumption that most, and possibly all, the difficulties that the learner of a foreign language encounters are due to the influence of his first language.

It was assumed that the sharper the differences between L1 and L2 the more difficult the process of L2 learning would become and hence more errors would occur. By contrast, the common features between L1 and L2 were assumed to be potentially useful factors in facilitating the learning process. Lado (1957:2), one of the early proponents of this hypothesis, expressed his view in this regard in unambiguous terms:

Those elements that are similar to his [the student's] native language will be simple for him, and those elements that are different will be difficult.

One of the main convictions of contrastive analysis in its strong form is that it is possible to predict and describe the learner's difficulties if a systematic comparison of L1 and L2 patterns and structures is carried out. Lado (1957:Preface, vii) maintains that:

The plan of the book "Linguistics Across Cultures" rests on the assumption that we can predict and describe the patterns that will cause difficulty in learning and those that will not cause difficulty, by comparing systematically the language and culture to be learned with the native language and culture of the student.

Another crucial issue is that the contrastive analysts who made the strong claims regarded errors as a negative aspect of the learning process - an undesirable sign resulting from L1 habits interfering with the development of L2 habits, as is particularly evident in the case of phonology.

It should be mentioned that errors can be predicted on the grounds that if a certain L2 pattern is lacking in L1, difficulties will emerge naturally. Duskova (1969: 18) made such a claim:

Contrastive analysis predicts learning problems not only in areas where the source and the target language differ, but also in the case of linguistic features unknown in the source language.

According to Duskova, it follows then that any structure in L2 that has no equivalent in L1 is definitely a source of learning problems, no matter how complex or simple it might be.

Schachter (1974) conducted a study involving speakers of Arabic, Chinese, Japanese and Persian in the acquisition of English relative clauses, and came to the conclusion that the evidence from the study was in favour of the predictive power of the strong version.

All the assumptions underlying the strong form of CA which were made, especially during the twenty years following World War II, have since been rejected on a number of grounds. First among these, Hatch (1978:Introduction, 10) maintains that:

The real failure of the 1960s was to rely on extrapolation from a general learning theory instead of getting down to the business of testing out that theory by examining the language that learners produce.

Whitman and Jackson (1972) tested the predictions of CA for English and Japanese. They administered two tests, a multiple choice and a cloze test, to 2500 Japanese students learning English as a second language in Japan.

They compared the test results with several predictions of the relative difficulty of the test items that were derived from different contrastive analyses. Overall, the results were against CA theory. Whitman and Jackson (1972:40) concluded that CA was inadequate and that:

Interference ... plays such a small role in language learning performance that no contrastive analysis, no matter how well conceived, could correlate highly with performance data, at least on the level of syntax.

In addition, some opponents of CA point out that CA is able to predict some, but not all, of the errors students will make. There must therefore be another source or other sources of learners' errors in the target language.

Furthermore, Sciarone (1970:117) criticises the CA approach by saying that:

The idea that difficulties of a foreign language can be predicted implies the supposition that corresponding structures are easy, and structures that differ, difficult. This supposition should be rejected on the grounds of being too simplistic.

Wardhaugh (1970) claimed that the CA hypothesis exists in two versions: strong and weak. The strong version lays claim to predictive power. That is, researchers in favour of the strong form believe that errors made in second language learning can be attributed to patterns in the native language. By comparing the learner's L1 and L2 it is considered that CA is capable of predicting what errors would be made.

2.7.2 The Weak Version

The weak version, in Wardhaugh's view, is a model with *a posteriori* explanatory power: that is, based on CA, linguists and teachers can look at errors once they have been committed and offer an explanation as to why those errors occurred. However, such explanations apply to particular instances of error, and cannot be generalised to a level of *a priori* predictive accuracy.

In addition, as has been mentioned earlier, there are a growing number of applied linguists who maintain that some but not all the errors that learners commit reflect what has become known as the negative transfer of L1 patterns and structures. Duskova (1969: 25), for instance, reached the conclusion that from

... what has been found about the sources of large groups of errors we may say that while interference from the mother tongue plays a role, it is not the only interfering factor.

and Nickel (1971:6) expressed his view as follows:

... contrastive linguistics is not at all committed to the view that all mistakes made by learners of foreign languages are caused by interference from the source language.

In an attempt to make their views less extreme than those of the early contrastive linguists, some applied linguists such as Snook (1971:18) maintain that:

Explanation of TL errors, then, not their prediction, is a main objective of contrastive analysis.

The same view was expressed by Lee (1972:16):

Contrastive analysis has indeed explanatory rather than predictive value.

2.7.3 Pedagogical Use of CA

Some writers consider that in the study of languages, contrastive analysis plays a major role and is of great relevance. Benathy, Targer and Waddle (1966:37) state:

The change that has to take place in the language behaviour of a foreign language student can be equated with the differences between the structure of the student's native language and that of the target language and culture. The task of the linguist, anthropologist and the sociologist is to identify these differences. The task of the writer of a foreign language teaching program is to develop material which will be based on a statement of these differences; the task of the foreign language teacher is to be aware of these differences and to be prepared to teach them; the task of the student is to learn them.

Lee (1968) views CA under three separate headings: first there is the purely linguistic approach, which maintains that CA is nothing but contrasting for the sake of contrasting and the knowledge it might give. The second approach maintains that CA is capable of encompassing all the errors which occur in second language acquisition. The final approach is a position between these two points of view which maintains that CA has been assigned too high a position in language learning in the

past but that, on its own merits, CA holds a position in the general scheme of language teaching.

CA has been held to be a valid technique in language teaching. Topping (1964:99) wrote:

Contrastive analysis has become one of the sacred terms in the lexicon of the applied linguist during the past decade. Over the past few years, the principles and the applications of this technique have been carried by linguists and teachers into classrooms ... Contrastive analyses are assigned as term projects to hundreds of graduate students in linguistics and TESL programs ...

Structuralists believe that when the comparative analysis of L1 and L2 shows that certain errors will be made when learning L2, actions to prevent these errors from taking place or becoming fixed in the learning must be taken. For example, CA may reveal that it is difficult for the second language learner to produce or even hear sounds that are not part of his own L1. The assumption when learning a second language is that the language learner produces and hears those sounds which are not part of his native language sound system in terms of those sounds of his own which they most closely approximate. Harris (1954:259) contends that:

It may prove possible to acquire a language by learning only differences between the new language and the old (learning these features which are identical in both to be carried over untaught!).

This, however, begs the question of how many languages share identical features beyond the phonological level. To continue the structuralist point of view, identifying transfer of L1 training is an objective of CA. If

the L1 influence is positive, it is referred to as facilitation, while negative transfer is called interference.

Looking at contrastive analysis from the generative grammar viewpoint, Di Pietro (1970) believes that the primary purpose of CA is to show that the universal deep structures manifest themselves in surface structure through transformation rules. Di Pietro (1971:8) claims that:

Contrastive analysis can be of value even to the theoretical linguist who seeks some support for his theory of language.

Transformation rules can then be contrasted in order to see where problems areas in SLA will appear.

Khafaji (1975) combines both structuralist and transformationalist contrastive approaches with new comparative dimensions and contrastive techniques, proposing a formal-functional approach to contrastive linguistics. This approach involves the comparison of the form and function of the linguistic features being contrasted, in terms of the meaning as well as syntax. Using tables, the Arabic equivalent to the English tense-form being compared was listed first, followed by other Arabic functional equivalents. The English translations were analysed respectively in their tables and columns for functional contrastive analysis. A list of learning problems was derived from these tables, analysis of which indicated that the source of learning problems was interference from the first language (L1).

Theoretical criticisms of CA started with the nativists' attack on behaviourist learning theory. Chomsky's (1959) review of Skinner's Verbal Behaviour argued that extrapolating from studies of animal

behaviour in laboratory conditions could not show how human beings acquire language in natural conditions. Although these criticisms were directed at L1 acquisition, they could be extended to L2 acquisition.

More recently, in spite of the enthusiasm shown for CA, several studies have appeared questioning its validity and pedagogical utility (Richards, 1972; Zobl, 1982 and Jordan, 1991). Upshur (1962:123) feels that CA is an inadequate approach to language teaching. He states:

Herein lies a dilemma, a logical inconsistency in contrastive analysis hypothesis. As the student begins to learn the new language, his linguistic habit structure changes, and it is this altered habit structure which will determine the amount and focus of negative transfer in subsequent learning. After any small increment of learning, the student is no longer the pure native speaker assumed by contrastive analysis of the native and target languages. All of what he has learned will have facilitation or interference effects upon what has not yet been taught.

Duskova (1969:25), in her comments on the learning of English as a second language, highlights the deficiencies of CA when she observes that

While the interference from the mother tongue plays a role, it is not the only interfering factor. There is also interference between the forms of the language being learnt both in grammar and lexis. In grammar it is the other terms of particular English subsystems and/or their functions that operate as interfering factors, while in lexis words and phrases are often confused as a result of formal similarity.

Finally, another criticism of CA is that of Dulay and Burt (1983), who attempt to prove that the theoretical assumptions on which the CA hypothesis is based have no substance. Dulay and Burt (1974) set out a study of the natural speech of children learning a second language to test the contrastive analysis hypothesis empirically. They characterised errors into four types according to their psycholinguistic origins: interference errors, developmental errors, ambiguous errors and unique errors. Their study concluded that fewer than 5% of the errors were caused by interference from the learner's first language in learning the target language. They attacked CA by saying that comparing languages could not help predict or explain sources of error.

2.7.4 CA : Summary

From the above discussion of both theoretical and empirical aspects of CA theory and its pedagogical application, I would like to draw a number of points:

Firstly, while the existence of L1 interference in SLA would seem to be a matter of both common sense and common observation, the facts of the matter are complex. The assumption that L2 errors will correspond proportionately to areas of L2 difficulty which in turn are commensurate with L1-L2 differences remains to be proved. Arguably the greater the similarity of L1 to L2, the greater the risk of negative transfer. Moreover, surface structure differences between L1 and L2 may mask deep structure similarities and vice versa. Finally, interference where it exists

may be limited to specific domains, for example phonology, as suggested above, and particular lexical sets (e.g. prepositions) or syntactic structures (e.g. pronoun retention in relative clauses).

Secondly, the logical reservations expressed by Upshur (1962:123) and quoted above are well taken. Interference may well be limited to L2 learners in the early stages of SLA, though this may persist, as a contributing factor, in cases of fossilisation.

Thirdly, the suggested lack of predictive power, while valid in reducing the overly ambitious claims of the earlier "strong version" theorists, nevertheless does not preclude the possibility of a limited predictiveness in specific areas in SLA such as those suggested above. If CA were to be merely explanatory *a posteriori* there would indeed be little point, pedagogically at least, in proceeding with a detailed contrastive analysis: having been identified, the errors could be addressed directly without recourse to the complex explanations of why they occurred. However, any explanation relies on appeal to a higher principle and is therefore, in principle, generalisable, if only to a limited extent.

Fourthly, the research results are mixed as to the existence or otherwise of interference and its relative significance in comparison to other potential sources of error.

To conclude, it would appear that there is at least a strong possibility that, in terms of this study, the L1 knowledge of Arabic spatial prepositions and locative adverbs does indeed, as a limited and specific domain with a close but by no means identical counterpart in English, inhibit the acquisition of English spatial prepositions, at least among

early learners, and perhaps on a continuing basis, even with relatively fluent Arabic speakers of English as L2. If this were the case, then such interference could be anticipated and taken into account in teaching English as an L2 to Arabic speakers.

2.8 Error Analysis

The Chomskyan innateness view of language questioned the validity of the behaviourist theory with its principles of stimulus-response and habit formation. It has played a vital role in shifting the focus of investigating characteristics of language to an explanation of the characteristics of the learner and his language (Chomsky, 1957, 1959 and 1966 and Di Pietro, 1971). Chomsky (1964:44), for instance, states that:

language is not a "habit structure". Ordinarily linguistic behavior characteristically involves innovation, formation of new sentences and new patterns in accordance with rules of great abstractness This is true both of the speaker, who constructs new utterances appropriate to the occasion, and of the hearer, who must analyze and interpret these novel utterances. There are no known principles of association or reinforcement, and no known sense of "generalization" that can begin to account for this characteristic "creative" aspect of normal language use.

The supporters of the error analysis approach believe that the shortcomings of CA has led to the development of Error Analysis (EA). In many studies EA has been suggested as a replacement for CA since, according to these studies, EA is concerned about language teaching in a wider context. Schumann and Stenson (1974) claim that EA has been

adopted by many linguists because CA is inadequate and does not fully account for students' errors.

The shift of emphasis from CA has also led to further studies in the field of EA. The studies that have been conducted by many linguists (e.g. Corder, 1967 and Richards, 1971) to test the predictability of CA found that the majority of errors either could not be traced to sources in the learners' native language or could not be adequately explained with reference to other sources of interference.

CA developed from the behaviourist approach, while most EA is transformationally oriented. Shumann and Stenson (1974:3) state that:

EA grew out of transformational linguistic theory and the notion of language as a rule-governed system.

EA is an approach that systematically studies the errors that occur while the learner uses the target language. Richards (1971:12) defined the field of error analysis as:

dealing with differences between the way people learning a language speak, and the way adult native speakers of the language use the language.

The development of EA resulted in an emphasis on the special language that the learners acquire, since EA has to do with the investigation of the second language of learners. These languages are known as "idiosyncratic dialects" (Corder, 1971); "approximative systems" (Nemser, 1971) and "interlanguage" (Selinker, 1972). Each of these languages is seen as being like any other language, and can be shown to have some structures which parallel those of the learner's native

language, some which parallel the second language, and some that are not found in either of them.

Corder, in many of his papers, has proved to be a major contributor to the development of the EA field and its hypotheses. In the past, teachers and examiners looked on errors only as a source of information about learning, sharing the common belief that errors should not be viewed as important to the language learning process. Corder (1967) highlights the importance of learners' errors and gives reasons why they are "significant" to learners, teachers and researchers. He firmly believed that errors should be viewed as evidence of the learning strategies used by language learners. Corder (1967:10) claims:

A learner's errors ... are significant in three different ways. First to the teacher, in that they tell him, if he undertakes a systematic analysis, how far towards the goal the learner has progressed and, consequently, what remains for him to learn. Second, they provide to the researcher evidence of how language is learnt or acquired, what strategies or procedures the learner is employing in his discovery of the language. Thirdly (and in a sense this is their most important aspect) they are indispensable to the learner himself, because we can regard the making of errors as a device the learner uses in order to learn. It is a way the learner has of testing his hypotheses about the nature of the language he is learning.

Corder (1967) distinguishes between two types of error: "errors of performance" are the errors which occur in first or second language speech when the speakers are under physical or psychological pressures or conditions such as tiredness or strong emotion. These kinds of errors

are slips of the tongue, and do not reveal a defect in the speakers' knowledge of his or her language competence. On the other hand, there are errors that are systematic and reflect the speakers' or learners' underlying knowledge of the language. This type of error is called a "transitional performance" error.

Corder (1971) defines the speech of a learner as a language that has a grammar and a system. He draws distinctions between "idiosyncratic dialect", which he claims to be linguistically justified, "social dialect" and "idiolect". The idiosyncratic dialect, or language of the learner, shares most of the characteristics of an aphasic, a poet, or a child learning his first language. Corder (1971:18) writes:

We cannot, however, refer to the idiosyncratic sentence of a child as deviant, since he, of course, is not yet a speaker of a social dialect; and indeed it is not usual (until he goes to school) to call a child's sentence deviant, incorrect, or ungrammatical. For precisely the same reason I suggest that it is misleading to refer to the idiosyncratic sentences of the second language learner as deviant. I also suggest that it is as undesirable to call them erroneous as it is to call the sentence of a child erroneous, because it implies wilful or inadvertent breach of rules which, in some sense, ought to be known. Whereas, of course, sentences are idiosyncratic precisely because the rules of the target dialect are not yet known.

Nemser (1971), whose work, along with that of Corder (1967 and 1971), Richards (1971 and 1974) and Selinker (1972) which can be seen as providing possible theoretical guidance and defining the second language learning problems, provides additional support for the hypothesis that the learner's language is systematic. Nemser's

“approximative system” is structurally independent of both first language and second language and unstable in nature when the second language is learned in a formal setting. The approximative system can be recognised at an early stage, when the learner attempts to use the second language, through to the advanced stage of this system when the learner comes very close to the second language. Furthermore, Nemser adds that the “approximative system” becomes apparent when errors which the learners make are not attributed to either first or second language. This evidence makes the “approximative system” more valuable than contrastive analysis research and has pedagogical implications in the language acquisition process.

Richards, in his article Error Analysis and Second Language Strategies (1971), extends the range of EA by classifying errors from six sources: 1) interference; 2) overgeneralisation; 3) performance errors; 4) marker of transitional competence; 5) strategies of communication and assimilation and 6) teacher- induced errors.

Richards (1972) also classifies errors into categories. The first is interference errors, which are caused by the native language. The second category includes the errors that reflect the learner's competence in the target language. This type of error is intralingual and developmental, and is caused by the structure of the target language. The intralingual and developmental errors can be discussed by focusing on the learning strategy, which is characterised by overgeneralisation, incomplete acquisition of rules and ignorance of rule restrictions.

Likewise, Taylor (1976:191-195) states seven sources of error, which are similar to those of Richards. Some of these are: a) interference; b) overgeneralisation and c) convergent structural analysis.

The results of the study of Bhatia (1974:349) support the claims of error analysis. She sums up her study with the following claims:

- 1) An error-based analysis gives reliable results upon which remedial results can be reconstructed.
- 2) A study of percentage values of different errors gives us an insight into the relative significance of a given error.
- 3) A course based on the frequency of errors will enable the teacher to teach at the point of error and to emphasise more those areas where error is frequently higher.

When observing second language learners, we find that they construct sentences which are deviant from standard English in the areas of grammar, lexis, or orthography. These deviances take the form of omission, addition, substitution or misplacement (Corder, 1981).

Not only should EA continue to serve as a diagnostic tool, but it can also be of assistance in mapping the approximative system which teachers should expect to encounter from learners and suggests that they should learn to be tolerant of errors.

Furthermore, EA makes use of CA in explaining transfer errors. The examination of learners' strategies could be seen as an aspect that EA deals with effectively. I believe that CA can be used as a tool of EA, by

highlighting examples of interference which can be analysed in order to understand the process of SLA to further our understanding of the problems that learners encounter in learning a second language. Schumann and Stenson (1975) claim that contrastive analysis, in its weak form, and error analysis take their departure from the target language as it is spoken by the learner. Schumann and Stenson (1975:4) maintain that:

These two approaches are not inconsistent, but, rather, focus on different problems within the same approach. We therefore suggest that contrastive analysis in its weak form should be considered just one aspect of the larger area of error analysis.

In spite of the merits of EA, it is not without its own problems. One of the challenges for error analysis is deciding what category to assign a particular error to. Hammarberg (1974:191) states in reference to phonology, that:

what is an error in one approach may be a different error, or no error at all, in another approach. You have to combine your various results in order to use them. Some of the relevant findings may not turn up in the corpus unless you elicit them on purpose.

Schachter and Celce-Murcia (1977:441-50) do not share the views of the advocates of EA. They write that:

although the weaknesses of contrastive analysis have been extensively discussed, little has been said about the potential for corresponding weaknesses in error analysis. Six areas in error analysis which exhibit potential weaknesses are: (1) the analysis of errors in isolation; (2) the

classification of identified errors; (3) statements of error frequency; (4) the identification of points of difficulty; (5) the ascription of causes to systematic errors; (6) the biased nature of sampling procedures. These together limit the usefulness of error analysis in describing the acquisition process of the second language learner. As a result the wisdom of using error analysis as the exclusive basis for the development of teaching materials is questioned.

There are other criticisms of the shortcomings of EA. Johnson (1975:330) states:

We can never achieve a full explanation of learner's errors by error analysis alone ... as always when a corpus is used; we never know when it is sufficiently large ... the corpus in error analysis usually consists of tests constructed for other purposes than identifying learner's errors: consequently, one cannot expect them to provide complete coverage of possible errors.

Another attack on EA comes from Schachter (1974:212). She believes that EA does not account for the avoidance phenomenon. She states that:

Error analysis without *a priori* predictions simply fails to account for the avoidance phenomenon. If the student does not produce the constructions he finds difficult, no amount of error analysis is going to explain why.

Another weakness of EA is the fact that it focuses only on the learners' errors. Harley(1980:4) states:

The study of errors that 22 learners make can certainly provide vital clues as to their competence in the TL, but

they are only part of the picture ... it is equally important to determine whether the learner's use of "correct" forms approximates that of the native speaker. Does the learners' speech evidence the same contrasts between the observed unit and other units that are related in the target system?

2.9 Interlanguage

It is two and a half decades since Corder (1967) wrote his paper Significance of Learners' Errors in the area of research that has come to be known as Interlanguage and which is a branch of SLA (Douglas and Selinker, 1985). The term Interlanguage came into more general use in the early 1970s and since then has been widely used in a variety of contexts.

It is fair to say that the credit for stimulating professional interest in the study of learners' language must go to Corder; he suggested that a systematic study of learners' errors would result in a better understanding of language learning.

Selinker (1972) was the first linguist to introduce the term "Interlanguage". This term is a collective name which is given to the learners' languages or versions of target languages. He drew the attention of linguists and researchers to the fact that the language of learners could be seen as a separate language variety or a linguistic system with its own peculiar characteristics and rules. To Selinker (1974:35), this term incorporates:

The existence of a separate linguistic system based on the observable output which results from a learner's attempted production of a TL norm.

This production is an intermediate system between the learner's first language (L1) and the target language (TL). It is a system that comprises features of both languages, but which is absolutely bound to neither of them. It is considered to be an independent language with its own properties.

Selinker's (1974:33) notion of Interlanguage is founded on the assumption of the existence of linguistic psychological structures:

We assume that there is such a psychological structure and that it is latent in the brain, activated when one attempts to learn a second language.

However, when a learner attempts to learn a sentence in the second language to convey his own meaning, the utterances he makes are neither similar to those of the native speakers of the target language, nor to the sentences that have the same meanings in the learner's first language.

Selinker (1972 and 1974:37) posits five processes central to second language learning which are in the "latent psychological structure". These processes are associated with the forms of the learner's language at certain stages:

- 1) Language transfer
- 2) Transfer of training
- 3) Strategies of second language learning

- 4) Strategies of second language communication
- 5) Overgeneralisation of TL linguistic material

Apart from Selinker's term "Interlanguage" (IL), the language of second language learners has been given different names (terms) by different linguists. Although they all refer to the same phenomenon, which is the competence development of the second language learner, they emphasise different aspects of this. Corder (1971) uses the term "idiosyncratic dialect". He (1981:17) states that the learner's idiosyncratic dialect is:

not ... a "langue" in that its conventions are not shared by a social group ... and many of its sentences present problems of interpretation to native speakers of the target dialect.

Another term which is used to describe the learners' language is Nemser's. He (1971) proposes the term "approximative system" to identify the "deviant" system which the learner employs when attempting to utilise the target language. Nemser considers this system to be distinct from both the native and the target language, and also to be distinct in being internally structured.

However, Interlanguage is the most frequently used term. It may be preferred to its rival terms because it emphasises that the second language learner's system does not belong to that of the first language (L1) nor the target language (TL), but has elements of both.

The fundamental principles in connection with the ILs of second language learners are (Timm, 1986):

- a) Learners' interlanguages are systematic.

- b) There are variations in the production of IL.
- c) The process of second language learning proceeds from one stage to another systematically.
- d) The mother tongue of the learner has a role in the learning process: it facilitates as well as impedes the acquiring of a second language.
- e) The systematicity of second language learners' production could be seen as a result of their active involvement in "creative construction" strategies, that is, strategies of hypothesis-forming and hypothesis-testing which underlie the learner's attempts to organise and produce the second language.
- f) Interlanguages contain a certain amount of fossilisable structures.

2.9.1 IL Hypothesis

L2 learners approach the task of learning a second language with more information and abilities than for L1 acquisition, despite the claims of Corder (1967) that L1 and L2 acquisition are identical. The hypothesis behind Interlanguage is that the learner creates and formulates a system of rules for the language he wants to acquire. Second language acquisition derives from the learners' knowledge of the world and from information they already possess (Ellis, 1982). Awareness of the

informativeness principle in communication supports the following hypotheses (Ellis, 1982:214-6):

- 1) Second language learners utilise their knowledge of conceptual events and simplify their representation in the L2 according to principles of informativeness.
- 2) L2 learners' familiarity with the syntactic principles of language helps them to construct syntactic utterances in L2.

Second language (L2) learners hypothesise about the TL's grammar, lexis, syntax, phonology and discourse. They test the validity of their hypotheses with those who have a much better command of the TL than they have. If their utterances are understood by their interlocutors, they assume that they have hypothesised correctly. On the other hand, if there is a breakdown in communication, they know that they have made an incorrect hypothesis.

2.9.2 Fossilisation

Fossilisation structures are introduced by Selinker (1972). He characterises the notion of “fossilisation” as a “mechanism” where speakers of a particular native language will keep certain linguistic items, rules and sub-systems in their interlanguage regardless of the amount of instruction they receive in the target language. He also recognises the reappearance of non-target language structures in the productive performance of learners' language which were thought to have been eradicated, and which he calls “backsliding”.

Selinker (1989:287) describes fossilisation as a “spectre” and goes on to explain the process as:

The cessation of IL learning, often far from TL norms, often shown by the failure of learners to acquire a feature where a particular TL feature is expected.

Some learners seem to stop learning when they think that they have reached a certain acceptable level in their IL and, as a result, their deviant linguistic forms become fossilised. Corder (1981) suggests that the learner loses his motivation to elaborate his understanding of the TL when he (the learner) is able to communicate with native speakers. Corder (1981:73) writes:

When his interlanguage grammar reaches that state of elaboration which enables him to communicate adequately for his purposes with native speakers, his motive to improve his knowledge or elaborate his approximative system disappears.

The trouble with these fossilised structures is that they become resistant to remedial teaching methods (Timm, 1986). Linguists and teachers who emphasise error correction in teaching methods warn that errors could become fossilised if they are not seriously considered.

The present writer believes that some Arab learners may have reached the stage of fossilisation in using spatial prepositions after many years of instruction in English, as in the incorrect sentence below (Appendices 1-4):

The man was standing *on* the window when I rang the bell.

If we look at the causes of fossilisation, we find that those who learn a second language manifest, for instance, a foreign accent in their speech. When they realise that this accent does not impair communication, they do very little to approximate their accent to that of target language speakers. This lack of motivation results in fossilisation of the learners' speech sounds and consequently, this fossilisation becomes embedded in speech and perhaps also in writing. For instance, Arab learners of English do not easily distinguish between /b/ and /p/, and /f/ and /v/ sounds, and this failure to distinguish between certain phonemes is frequently reflected in errors in their writing.

2.9.3 Systematicity and Variability in IL

A basic assumption in SLA acquisition is that the organisation of the L2 learners' language as an output language is systematic. Corder (1981:17) states that learners' language is "regular, systematic, meaningful ...". Following the theoretical studies which were made in the late 1960s and early 1970s (Corder, 1967; Nemser, 1971 and Selinker, 1972) that portray interlanguage as a systematic language, Ellis (1985:118) writes:

It is now axiomatic that interlanguage is systematic.

Burt and Dulay (1980) found learners of different backgrounds acquiring certain morphemes in English in a surprisingly similar manner. Sampson (1982) believes that there is systematicity underlying the language production of L2 learners.

On the other hand, some studies done by eminent linguists (for example, Ellis, 1985a and 1985b and Tarone, 1988) have cast serious doubts on the systematicity of ILs. Tarone (1988:18) asserts that there is “dramatic evidence of variation in IL”. Despite their inherent systematicity, whether they are idiosyncratic in nature or conform to TL rules, ILs are regarded as unstable (Timm, 1986). According to Ellis (1985), there are two types of interlanguage variability: systematic and non-systematic.

The variability of IL has become increasingly recognised. Ellis (1985a:118) acknowledges the variability of interlanguage. He contends:

Each interlanguage which the learner forms contains alternative rules for performing the same function. On some occasions one rule is used, on another a different rule.

Other reservations have also been expressed towards IL. Corder (1981:88) writes that:

So long as the concept of an interlanguage continuum was one of the restructuring alone, it was bound to remain of relatively little value or generality, since it could only be seen as movement between one fully complex code and another ... the sequences of restructuring would all be different and the errors predicted ... would all be "transfer" errors.

Furthermore, distinguished scholars from Europe and the United States who participated in the Edinburgh Seminar on IL in honour of Pit Corder agreed with Davies (1984: xv) that:

IL is still in such a state of flux that application requires caution, ... it is important that languages other than English are investigated both for the sake of IL theory and to prevent IL becoming excessively narrow and abstract.

2.10 Conclusion

This chapter has reviewed theories of 1st and 2nd language acquisition. The behaviourist theory has been challenged by nativists on the grounds that it cannot account for the facts of L1 acquisition simply in terms of habit formation, but that innate processes must play a significant role. By extension, a theory of SLA which views L1 interference as the sole cause of L2 difficulties and errors is too strong; innate acquisition processes must also be taken into account as well as the positive, facilitating role of L1. It seems more likely then that L1 interference is only one source of error in L2 production.

It follows that CA is indicated only in cases where there are reasons to suspect L1 interference over and above a general expectation that this is occurring.

In the case of prepositions, their varied, and not always logical, use suggests that this will be an area of difficulty for learners of English as an L2. Where there is no exact correspondence between L1 and L2 there may be a case for contrastive analysis. If L2 learners of a particular language, such as Arabic, are found to be producing predictably regular errors there is a strong case for negative transfer or interference. If studies across different languages show that different L1 speakers

produce different sets of errors in the use of prepositions, which are nevertheless internally consistent, and if a further CA (e.g. English/Spanish) can show a principled variation potentially underlying such error patterns then the case for interference would seem to have been established. Such results would feed into ESL teaching by anticipating errors and planning in advance to deal with them, much as is done in the area of phonology where L1 interference is perhaps most marked.

CHAPTER THREE

DISTINCTIONS BETWEEN ARABIC AND ENGLISH SPATIAL PREPOSITIONS

3.1 Introduction

The purpose of this chapter is firstly to discuss the various definitions provided by linguists, of English and Arabic, of the terms "preposition" and "locative adverbs" in order to arrive at an appropriate definition of a "preposition" for the purpose of this study (3.2).

Section 3.3 presents an overview of the spatial and figurative meanings of the English spatial prepositions which this study is concerned with.

Sections 3.4 and 3.5 briefly discuss and summerise work done in the field of acquisition of spatial prepositions by L1 and L2 learners.

Finally, sections 3.6 and 3.7 presents an overview of the forms and meanings of Arabic spatial prepositions and locative adverbs.

3.2 Definition of "preposition"

English prepositions express a relation between two grammatical elements. Quirk et al. (1985: 657) define the syntactic functions of English prepositions as follows:

In the most general terms, a preposition expresses a relation between two entities, one being that represented by the prepositional complement, the other by another part of the sentence.

According to Huddleston (1984:336) prepositions have traditionally been defined in this way:

A preposition is a word that indicates a relation between the noun or pronoun it governs and another word, which may be a verb, an adjective or another noun or pronoun [Huddleston quoting Crume 1935].

An example from Huddleston (1984:336): I live in this house.

Morphologically, English prepositions may be simple (one word) or complex (2 or 3 words).

Prepositions normally precede their complements. They are words placed in front of the nouns or pronouns which are their objects, with the exception of some languages like Japanese where the preposition equivalents follow their complements and are called "postpositions" (see Huddleston, 1984).

Burton-Roberts (1986:62) states that:

Phrases consisting of mutually dependent constituents are by convention named after the governing constituent, in this case, the preposition.

Prepositions govern phrases expressing ideas such as a time, manner and place, and these phrases are thus known as prepositional phrases, as distinct from noun phrases, verb phrases and other similar phrasal categories.

Certain words normally functioning as prepositions can also function as adverbs; their part of speech in a particular sentence depends on how they are being used. Taylor (1992:75) proposes the following definitions which he thinks will fit most cases:

1. When the words have object nouns (or pronouns) they are prepositions, as in 'I told you that before tea';
2. When they do not have object nouns (or pronouns) they are adverbs as in 'I told you that before'.

English spatial prepositions do not only denote relations between two entities, they denote locality as well as the 'shape' of this locality, such as a point, surface, or a volume (see Dirven, 1989).

A survey of three standard computerised corpora, LOB (written British English) BUC (written American English) and LLC (Spoken British English), carried out by Svartvik (1988), revealed (consistently between

LOB and BUC) that English spatial prepositions (such as *at*, *in* and *on*) are among the most frequent words in English.

Despite the popularity and importance of English spatial prepositions as a part of speech, as argued by Svartvik (1988: 400) who stated that 'prepositions are among the most common word classes in the language', they present a great deal of difficulty for both L1 and L2 learners.

In contrast to English, Arabic prepositions (*hurúf-al-jarr*) form a closed class of twenty items. In addition, a separate category of locative adverbs (*dhurúf makān*) forms an open class of lexical items which can perform a prepositional function.

Siybawayh (d.177:178) views the role of prepositions in Arabic as:

As for 'bi-' and the like prepositions, they are neither adverbs nor nouns, but something by which what is before the noun or what is after it is added to it.

Thus he sees the Arabic prepositions as a means of 'adding' or bringing into relationship one lexical item or syntactic category with another.

Arabic prepositions and locative adverbs are all considered as governing the genitive case in the noun complements. On the other hand, the distinction between what is called a locative adverb and what is called a preposition in Arabic lies in the characteristics of the locative adverbs:

- a) Locative adverbs do not acquire abstract or grammatical meanings whereas prepositions do, although such locative adverbs may be used figuratively.

- b) Arabic prepositions are a closed set of grammatical items, that is they are defined by listing. Arabic locative adverbs, on the other hand, are open to expansion through the productive process of adding the accusative marker to a noun.
- c) Arabic prepositions can combine with verbs to form verb-preposition idioms, whereas locative adverbs cannot.

Some linguists such as Ziadeh et al (1957) categorize locative adverbs such as 'tahta' and 'indā' as prepositions.

Wright (1964:280) considers the adverbs of place as a second class of prepositions. He maintains that:

The separable prepositions are of two sorts. Those of the first class, which are all biliteral or trilateral, have different terminations; those of the second class are simply nouns of different forms in the accusative.

Both languages view prepositions as expressing a relationship between two entities, for example a spatial relationship, and so linking two syntactic elements. One of these is governed by the preposition in a prepositional phrase.

In English, the phrasal complement may be omitted, in which case the preposition is viewed as belonging to the verb phrase as an adverb.

In Arabic, there is a strong argument for considering the locative adverbs which function prepositionally to be a separate lexical category from prepositions. However, the sense of a relationship is nevertheless implicit

and we may therefore consider them to fall under a common definition of "preposition" in this study.

To conclude: for the purposes of this study we shall define a preposition as a word or phrase which indicates a relationship between two entities, one of which is represented by the prepositional complement, which it governs, and one by another element of the sentence. This definition will be considered sufficient for defining a word as a preposition, even where such a word would be described as an adverb in another context, as long as there is a clear reference to the type of relationship defined above. This will be considered sufficient as a criterion for defining a word as a preposition.

3.3 English Spatial Prepositions

This study is restricted to ten English spatial prepositions which are thought to be more problematic than others to Arabic native speakers (Naser, 1983 and Bourenane, 1984). It focuses on nine single-word prepositions (*above, among(st), at, behind, below, between, in, on, and under*) and one complex preposition (*in front of*). These prepositions may denote place in a general way (*at, in, on*) or in a more specific way such as: interlocation (*among(st)* and *between*), horizontal axis (*in front of* and *behind*) and vertical axis (*above, below* and *under*), Quirk et al (1985:665 & 669) and Dirven (1989:552).

These four categories or areas of location will be described in detail below together with the prepositions used to express them. The ranges of use of these prepositions will also be described.

3.3.1 Place in general

"Place in general" refers to expressions of location which may be relatively unspecific as to precise position within a broadly defined area, or in relation to other entities.

A. *At*

At is one of the English prepositions that occurs frequently in different uses. Both Lindkvist (1968:129) and Quirk et al (1985) identify five uses of *at*. They are as follows:

i) Place

The preposition *at* is used to indicate place looked at as a point. The functional relation of *at* is that of making use of the place referred to.

e.g.: The boy is standing *at* the door.

I met him *at* the airport last week.

Mr Smith is *at* the office.

ii) Time

At indicates a point in time; it is also used idiomatically for holiday periods (Quirk et al 1985).

e.g.: *at* nine o'clock

at noon

at night

at breakfast time

at Easter

iii) Target

Target is a combination of goal and path. *At* expresses the idea of an intended target when combined with verbs such as *aim*, *shout* etc.

e.g.: John was aiming *at* the bird.

She was shouting *at* me.

iv) Reaction

At could be used when expressing an emotional reaction.

e.g.: I was surprised *at* the rejection of the offer.

v) Point on a scale

Besides its indication of a point in time, *at* indicates a point on other scales.

e.g.: He crashed *at* 70 mph

He died *at* the age of 82.

B. *In*

The English preposition *in* has many uses though scholars are not agreed on the precise number. For example, Quirk et al (1985) maintain that *in* has three uses, while Dirven (1989) claims that *in* has four uses. Furthermore, Radden (1989) states that *in* has eleven figurative uses. The following categories are based on all these scholars' work.

i) *In* expresses containment in an area or a volume. *In* is used with big cities such as London, Tokyo, New York etc., with countries and continents.

e.g.: The sheep are *in* the field.

There is a ball *in* the box.

I don't like it *in* New York.

ii) Time

In denotes references to times of events which are either fixed or relative to another temporal event (Radden, 1989). Both long periods of time and parts of the day in general take the preposition *in*.

e.g.: I saw Sarah *in* the morning.

in the last century.

in 1992

Furthermore, *in* is used to denote measurement from the present time to indicate an event in the future.

e.g: I told my father that I will see him *in* four months' time.

More uses of *in* could be found in many other domains which are seen in English as indicating enclosure (Radden, 1989).

iii) Material area

e.g: Sea food is low *in* fat.

iv) Partial area

e.g: She is blind *in* one eye

v) Activity

e.g: He has no interest *in* his success.

vi) States

This refers to emotional, psychological states in which a person or an object is 'contained'.

e.g: He is *in* trouble.

They refuse to leave us *in* peace.

vii) Physical environment

The preposition *in* may express the external physical environment.

e.g: They were walking *in* the rain.

Mary is steering a boat *in* a high wind.

C. *On*

The preposition *on* is viewed by Quirk et al (1985) as a preposition that carries three distinctive meanings. Radden (1989) states that the preposition *on* indicates five figurative meanings. The following are adapted from Quirk and Radden:

i) Place

On expresses contact with place seen as a line or a surface.

e.g: The book is *on* the table.

He stopped the car *on* the yellow line.

The figurative meanings of *on* are built upon two different notions, which are either that of a supporting contact or of contact from above. Radden (1989:555-556) maintains that:

the figurative meanings of *on* either build upon the notion of contact from below, where something serves as a supporting basis for something else, or coming into contact from above, where something affects something else.

Examples of these figurative meanings are as follows:

ii) Reliance and dependence

e.g: She depends *on* her son a lot.

iii) Time

On is used when referring to periods of time as well as in these expressions (see Quirk et al, 1985)

e.g: He left Sheffield *on* New Year's Day.

Trains leave St Pancras Station *on* the hour.

iv) Subject matter

The preposition *on* is used when the speaker describes a situation or an ongoing event. This use is reserved for formal communication such as lecturing and writing (see Quirk et al, 1985).

e.g: The doctor is lecturing *on* new techniques in therapy.

v) Reason serving as the basis for an action

The use of *on* is common when expressing personal achievement or in juridical expressions.

e.g: He was congratulated *on* his brilliant ideas.

A man was arrested *on* a charge of burglary.

3.3.2 Specific Place: Interlocation, Horizontal and Vertical Axis Location

This is in contrast to "general place" which is less narrowly defined. Specific place refers to the expression of closely defined relations near or between other entities. Dirven (1989:526) states that:

specific place means that entities are seen as located in a specific relation to each other, e.g. they are close to or between other entities.

The prepositions that denote specific place are examined below:

i) Interlocation prepositions: (*among(st)*, *between*)

The term 'interlocation' refers to the types of location which exist within a space whose boundaries (spatially or figuratively) are defined by the entities governed by the interlocation preposition. Interlocation may be expressed in English by the two prepositions *among(st)* and *between* among others (e.g: *around* and *through*). This study is concerned with only two of these prepositions: *among(st)* and *between*:

Among(st)

A place surrounded by several entities is described by using the preposition *among(st)*. Quirk et al (1985: 680) contend that *among(st)* relates to non-discrete objects.

e.g: They live in a house *among(st)* the trees.

Among(st) is also used in a figurative sense. It is used to mean 'distribution over all the members of a group.' (Dirven, 1989).

e.g: They divided an apple *among(st)* themselves.

Furthermore, the use of the two prepositions that indicate interlocation varies between speakers. The frequencies in the LOB and Brown Corpora of printed English, cited in Quirk et al (1985: 680), indicate that some of the prepositions uses are rare. There is a difference in the usage of *amongst* between American English and British English as shown in the following frequencies which are adopted from Quirk et al (1985: 680):

	Total	<BrE>	<AmE>
Between	1597	867	730
Among	683	313	370
Amongst	49	45	4

Between

Between denotes the position of an object with something on one side and something else on the other. *Between* expresses place in relation to various points too. Dirven (1989: 528) explains that

Although *between* thus usually has two reference points, it may have more, as long as the notion of location of various sides is present.

e.g.: The boy is standing *between* his parents.

An agreement was signed *between* three companies.

ii) Horizontal axis prepositions: (*in front of* and *behind*)

Locating objects from one's own position may mean that these objects are looked at as if from a horizontal perspective. Horizontal axis prepositions are more precise than those which indicate proximity. Since such prepositions include human observation, a person can locate objects along an axis and according to a reference point (see Dirven, 1989).

This study is concerned with two of the horizontal axis prepositions: *in front of* and *behind*. Both of these prepositions are capable of denoting any close or remote point with regard to a given object. There are entities

that have fronts and backs, such as houses and cars, which make the interpretation of the horizontal axis prepositions dependent on the knowledge of such entities. On the other hand Clark (1973) has pointed out that the front of an object is that side which is prominent in some way; for example the front of a vehicle is the side which goes first when it moves. The front of a human or other animal is defined as the side on which the perceptual apparatus is found, and this never changes. In contrast, the opposite side on the horizontal-frontal axis is always the back.

This fairly straightforward analysis of 'frontal' objects is further complicated by the existence of 'non-fronted' objects such as a ball, brick or tree. In these cases the horizontal front/back axis is defined by the spatial orientation of the speaker and his relationship to the object. In this case the front may be defined as the space between the speaker and the object (see Dirven, 1989).

Once again, *behind* is defined as being at the opposite end of the axis to *in front of*. Clark (1973) argues that the definition of the back of an object depends on knowing which is the front.

Behind

i) Place

Behind is used with fronted or non-fronted objects to express place.

e.g: There is a broken chair *behind* my desk.

He was standing *behind* the door.

ii) Time

In time expressions, *behind* is used to indicate an event that happens later than its scheduled time.

e.g: The buses seem to run *behind* schedule.

iii) Figurative

Behind indicates several figurative meanings (Hall, 1982), including:

a) Not up to the level of

e.g: She was *behind* the other students in physics.

b) Support

e.g: All of his friends were *behind* him.

c) Concealed idea

e.g: The students could not figure out what was *behind* her remarks.

In front of

The spatial preposition *in front of* denotes any close or remote point in the space in front of a given object.

e.g: My neighbour often parks his car *in front of* my house.

It happened right there *in front of* the tree.

iii) Vertical axis prepositions: (*above*, *below* and *under*)

Vertical axis prepositions also indicate place: they denote the relative level of two objects (Quirk et al, 1985; Dirven, 1989 and Radden, 1989).

Above and *below* indicate a vertical relationship between two objects, but not in direct line with the human observer; they simply indicate an entity on a higher or lower level than another (Hall, 1982; Quirk et al, 1985 and Dirven, 1989). *Above* and *below* are more restricted in their use than *over* and *under*. Both *above* and *below* are not normally used to express movement; they tend to describe a static position in the general upper or lower areas around an object. Bennett (1975) summarises this relationship in 'x is *above* y, x is not necessarily *over* y' and consequently he does not ascribe the notion of superiority or direct line to *above*. The preposition *above* merely implies that x is higher than y, and a similar situation exists in respect to the preposition *below*. They are fairly specific concepts which suggest a gap between the two objects being described.

Under is a spatial preposition that denotes a direct vertical spatial relationship as regarded or observed by a human (Quirk et al, 1985 and Dirven, 1989). Although *under* is considered to be the antonym of *over* (Quirk et al, 1985), Bennett (1975) suggests that there is at least one area in which the term *over* is not parallel with *under*. He gives the example 'My hand is *under* the table', which indicates two possible situations, that is there may or may not be contact between the two objects, whereas 'My hand is *over* the table' rules out the possibility of contact since in this case one would say 'My hand is *on* the table'. This reveals that *on* and *under*

would appear to be the antonym pair while in other situations *over* and *under* are the more usual pair.

Some characteristics of these vertical axis prepositions are:

Above

In its spatial sense, *above* expresses the relative vertical position of two entities.

e.g: The aeroplane was flying *above* the clouds.

Above carries other figurative meanings such as 'superior to' and 'more than' (Hall, 1982).

i) Superior to

e.g: His intelligence is *above* average.

ii) More than

e.g.: His baggage was *above* the weight limit.

Below

The spatial preposition *below* does not contain the notion of direct line, but indicates a lower level in place (Hall, 1982 and Dirven, 1989).

e.g: There is a small hotel just *below* the top of the mountain.

Below denotes several meanings other than place (Hall, 1982 and Dirven, 1989). The figurative meanings of *below* are:

i) Rank

e.g: There are many people *below* Mr Suleiman in the department.

ii) Price

e.g: You will be able to buy a nice suit *below* the normal price at the sale in January.

Above and *below* are used to indicate altitudes and temperatures as Dirven (1989: 534) claims.

iii) Altitude

e.g.: *Above/below* sea level

iv) Temperature

e.g.: *Above/below* freezing point

Under

The preposition *under* denotes lower place in a direct vertical line. It may indicate any point in direct vertical line with an object (Hall, 1982 and Dirven, 1989).

e.g.: The boy is right *under* the bridge.

Apart from its spatial sense, *under* is a common preposition which carries different figurative meanings such as:

i) Authority

e.g: He has six people working *under* him.

ii) In the process of

e.g: The building is *under* construction.

3.4 Acquisition of English Spatial Prepositions by L1 Learners

A large body of research work has been carried out on the acquisition of English spatial prepositions by subjects whose first language is English. These studies, Clark, E. (1971, 1973 and 1979); Clark, H. (1973, 1976); Cox (1979); Johnston (1984); Abkarian (1983) and Wilcox and Palermo (1974), focus on children as subjects for investigating the acquisition of spatial prepositions by L1 learners.

Washington and Naremore (1978) have drawn attention to the importance of, and position held by, spatial prepositions in language development. They make a broad analysis of words into functions, but in order to use functional speech children have to acquire function words such as prepositions. According to Washington and Naremore (1978), prepositions are one of the primary means of expressing grammatical relations in English, and particularly relate to spatial meanings. They therefore consider it important to establish the ages at which children acquire such terms (prepositions).

In studies of English speakers, Clark E. (1973) hypothesised that the prepositions *in*, *on* and *under* would be acquired in that order because of the influence of non-linguistic cognitive constraints. This claim has been supported by Wilcox and Palermo (1974) who indicated that part of the child's response set was determined by functional relations between the nouns.

Clark E. and Clark H. (1977) claim that children acquire pairs of adjectives roughly in order of complexity - the most complex being acquired last. The Clarks and others have found that the negative term of any pair seems to create more difficulty than the positive in terms of acquisition. Clark, E (1971) has extended this concept to the spatial prepositions *in front of/behind* and the temporal prepositions *before/after* with the same results.

Cox (1979), however, found that *behind* appeared to be better understood than the positively designated *in front of*. She suggests that Clark's classification may be wrong in this case. Cox (1979: 374) claims that:

whereas *front* (positive) and *back* (negative) refer to *opposite* sides of the mid-point (the person) of the horizontal-frontal dimension, the action of putting an object *in front of* or *behind* another takes place at the positive end of the dimension, i.e. *in front of* the subject. Perhaps the object which is placed *behind* the other and therefore further towards the positive end of the dimension is conceptually easier. This suggests then that in this instance *behind* should be regarded as the positive term and *in front of* as the negative.

In his paper on spatial and temporal terms, Clark H. (1973) draws attention to the correlation between space as it is usually perceived by humans and space as it is represented in language. He (1973: 54) stated that:

since perceptual space is a human universal, it should condition linguistic space in every language.

The starting point, then, is to determine how perceptual space is organised. Correlations are then sought between the perceptual organisation of space and the system of English spatial terms by using a componential analysis. Spatial concepts which are more complex perceptually are found to be more complex linguistically.

Clark's componential analysis makes use of semantic features - rules of application - such as number of dimensions, movement, negative direction. An increase in the number of dimensions of the reference object, movement as opposed to location, and negative direction compared to positive direction represent an increase in the number of semantic features.

Drawing on linguistic complexity derived from both a structural and a semantic component, Clark formulates his *Complexity Hypothesis (CH)*, which predicts that the order of acquisition of spatial terms will be constrained by their linguistic complexity. Clark H. (1973: 29) contended that:

the order of acquisition of English spatial terms is constrained by their rules of application. ... More specifically, the complexity hypothesis claims that given

two terms, A and B, where B requires all the rules of application of A plus one or more in addition, A will normally be acquired before B.

3.5 Acquisition of English Spatial Prepositions by L2 Learners

Research on the acquisition of spatial terms in English as a second language is very limited. The acquisition of some spatial prepositions has been studied in the context of morpheme studies (e.g. Hakuta, 1978).

Hakuta (1978) reports that *in*, *to* and *on* appeared in this order early in the English IL of his Japanese speaking child. Hakuta further noticed that *in* also occurred very often in non-obligatory contexts and was substituted for other prepositions such as *at*, *out*, *off* and *around*. The following examples are from Hakuta (1978: 143):

She's waiting *in* your door (*at*)

Is she *in* a floor? (*on*)

I saw *in* a window (*from*)

There are a few studies that deal with the acquisition of English spatial prepositions by adult L2 learners. Takahaski (1969: 217) states that:

While it is known that locative prepositions represent spatial or temporal relationships of objects in space, no fruitful study seems to have been made regarding these relationships.

These studies resulted in diverse findings about the order of the acquisition of spatial prepositions and their degree of difficulty. On the other hand, most studies agree upon the difficulty of functions and usages that English prepositions in general impose upon second language learners. Takahaski (1969: 217) claims that:

One of the most difficult problems a student of English as a second language faces is the understanding of the functions and usages of English prepositions.

Khampang (1974), in her paper Thai difficulties in using English prepositions, found that all groups (including Arabic), as well as Thai, had difficulty with English prepositions. She maintained that contrastive analysis was valid in providing information about the difference between English and Thai preposition systems. It was effective in showing problems that Thai learners, among others in her study, have with English prepositions.

Schumann's (1986) findings indicate that interference is a major trend for L2 learners. His analyses of spatial prepositions in his subjects' (Spanish, Japanese and Chinese) English interlanguage reveal two results: a) the oriental subjects tended not to use prepositions due to their first language interference (negative transfer), especially in the use of the prepositions *in* and *on*, and b) the Spanish-speaking subjects tended to use *in* to express most locative meanings. However, Spanish speakers seemed to have no problem in the use of the preposition *in*, because it has an equivalent in Spanish. Therefore the preposition 'en', which is equivalent to the English preposition *in*, interferes with the acquisition of the preposition *on*. Schumann (1986: 291-293) suggests that:

In the examination of baselang expressions, we found that the oriental subjects tended not to use prepositions and the Spanish speaking subjects tended to use *in* to express most locative meanings. ... for the Japanese subjects in particular, the native language's use of post-positions may interfere with perception of prepositions in the target language input.

3.6 Arabic Spatial Prepositions

Lexical items in the Arabic language have been categorised by Arab grammarians into three major parts (classes): 'afàal' (verbs), 'asmā' (nouns) and 'hurúf' (particles) (Ibn Hishām, 1985 and Wiss, 1976). Arab grammarians have separated prepositions known as 'hurúf' al-jarr' out of the class of 'hurúf' = particles.

Arabic prepositions are widely used with many different interpretations. Lentzner (1977:4) states that:

In Arabic there are some widely used prepositions each of which fills a number of semantic and syntactic functions. It is these prepositions in particular which are problematic to students of the language ...

There are twenty genuine prepositions in the Arabic language of which three designate locative relations. In general, Arabic prepositions are divided into two morphological groups (Ibn Hishām, 1963 and 1985, and Hasan, 1973),

1. The first type of preposition consists of one consonant and a short vowel, e.g. 'bi-' (*in, at, by, with*).

2. The second class of preposition is that which is either biliteral or triliteral. This type of preposition is independent of other lexical items, e.g. 'fī' (*at, in*), 'ʾalā' (*on*).

Arabic prepositions ('hurúf al-jarr') are classified according to the type of complements they take. Ibn Hishām (1985) contended that in this respect there are two types of Arabic prepositions. He (1985:222) claimed that: 'seven prepositions take real (common) nouns, أسماء ظاهره (asmā dhāhirah) and the other seven prepositions take either common nouns, أسماء ظاهره (asmā dhāhirah), or pronouns أسماء مضمرة (asmā mudmarah). Ibn Hishām did not include six of the prepositions in the above classification. He (1985:221) stated that four of them, حاشا وخلا وعدا وكى, do not have frequent use, and two of the prepositions, لعلّ, and, متى, are from the dialects, لُغْنَيّ, of the Ugayl, عُقَيْل, and the Huthayl, هُذَيْل, tribes respectively.

A summary of Ibn Hishām's classification of Arabic prepositions in terms of the complements they take as well as their English counterparts, which are supplied by the researcher, is as follows:

Prepositions of frequent usage		Prepositions of less usage
Prepositions that take nouns only	Prepositions that take nouns or pronouns	حالا 'khala' = except
حتى 'hatta' = upto, until	من 'min' = from, of	عدا 'ada' = except
الكاف 'ka-' = like, as	إلى 'ila' = to, until till, towards	حاشا 'hasha' = except
الواو 'wa-' = by (in oath)	عن 'an' = from, off, away from	متى 'mata' = when
مذ 'muth' = since, for, ago	على 'álā' = on, upon on top of	لعلّ 'la'alla' = perhaps
منذ 'munthu' = for, since, ago	في 'fi' = at, in, on	كي 'kay' = in order to
رُبّ 'rubba' = many	الباء 'bi-' = at, in, by, with	
التاء 'ta-' = by (in oath)	اللام 'li' = for, to, in order to	

In the following section, essential characteristics of the above mentioned spatial prepositions will be discussed and their functions investigated.

3.6.1 'bi-' = *in, at, by, with*

الباء

The 'bi-', preposition is close to the preposition 'fi' in meaning, but 'bi-' differs from 'fi' in the notion of 'containment within', which 'fi' denotes; 'bi-' expresses the notion of proximity. Arabic grammarians attribute numerous meanings to the preposition 'bi-'. Ibn Hishām (1985) maintained that the preposition 'bi-' expresses twelve meanings while Hasan (1973) stated that it has fifteen meanings. The following are examples of its spatial, temporal and other important uses:

i) Spatial

'bi-' expresses spatial relations; its meaning approximates to that of the preposition 'fi' = in.

e.g. kana 'bi-'al-madinati

كان بالمدينة

was-he *in*-the-city

He was *in* the city

wolidtu 'bi-'injiltara

وُلدت بانجلترا

born-I *in*-England

I was born *in* England

ii) Temporal

The temporal use of 'bi-' is as follows:

e.g. matha hadatha 'bi-'al-amsi?

ماذا حدث بالأمس

What happened *in-the-yesterday*

What happened yesterday?

Although 'bi-' can occur in spatial and temporal senses, its occurrence is very infrequent. Looking carefully at the spatial and temporal meaning of 'bi-' as it functions in the above sentences, we see that it parallels the meaning of 'fi'.

Other uses of 'bi-' as listed by Ibn Hishām (1985) and Hasan (1973) are:

iii) istiánah = make use of (utilisation)

إستعانه

e.g. safartu 'bi-' al-qitari

سافرت بالقطار

travelled-I *by*-train

I travelled *by* train

iv) ilsaq = attachment

الإصاق

e.g. amsaka 'bi-'al-waladi

أمسك بالولد

grabbed-he the-boy

He grabbed the boy

v) musahabah = accompaniment المصاحبه

e.g. safir 'bi-'hifdhi illahi سافر بحفظ الله

Travel *with*-protection God

Travel *with* God's protection

vi) tàdiyah = transition التعديه

e.g. thahabtu 'bi-'al-waladi ila al-mustashfa

ذهبت بالولد إلى المستشفى

went-I *with*-the-boy to-the-hospital

I took the boy to the hospital

vii) al-tàwid = compensation, exchange for التعويض

e.g. ishtaraytu al-kitaba 'bi-'dirhamayn اشتريت الكتاب بدرهمين

bought-I the-book for-two-pounds

I bought the book for two pounds

viii) al-tab'id = some of all, portioning التبعيض

e.g. aynan yashrabu biha ibadu-llahi ﴿عيناً يشرب بها عباد الله﴾

a spring drink of-it servants-of-God

A spring from which the servants of God drink

ix) al-badal = replacement البدل

e.g. la-tatabadalu al-khabitha 'bi-'al-tayabi

﴿لاتبدلوا الخبيث بالطيب﴾

not-exchange-you the-evil with-the-good

You must not substitute the good for the evil.

x) istila = superiority إستعلاء

e.g. qalilun min al-nasi man ta-amanhu 'bi-amwalika

قليل من الناس من تأمنه بأموالك

a few of people whom trust-him on-wealth-your

There are few people to whom you can trust your wealth

xi) al-tawkid = confirmation التوكيد

e.g. thahaba al-mudiru 'bi-'nafsihi li-muqabalati al-'ommali

went the-manager *by*-himself to-meet the-workers

ذهب المدير بنفسه لمقابلة العمال

The manager went *by* himself to meet the workers

xii) al-sababiah = cause, reason السببيه

e.g. mata al-rajulu 'bi-'al-maradi مات الرجل بالمرض

died the-man *of*-the-illness

The man died *of* the illness

In the verb-preposition structures, the preposition 'bi-' is considered to be one of the prepositions most commonly used in conjunction with verbs.

Lentzner (1977:162) states that

Not only does 'bi-' operate as an integral part of certain verb preposition idioms, but also it can act as a transitivizing particle which serves to convert intransitive verbs of motion into transitive verbs of transport.

This type of function of the preposition 'bi-' is referred to as the transitive 'bi-' ('bi-al-tàdiyah). Examples of intransitive verbs that are converted into transitive verbs by 'bi-' are:

i) farra 'bi-' = to run off with فرّ بـ

e.g. farra al-sariqu 'bi-'al-mijawharati فرّ السارق بالمجوهرات

fled the-thief *with*-the-jewellery

The thief fled, taking the jewellery *with* him

ii) safara-bi = to travel *by* سافر

e.g. safara al-rajulu 'bi-'al-qitari سافر الرجل بالقطار

travelled the-man *by* the train

The man travelled *by* train.

3.6.2 'fi' = *in, at*

في

The Arabic preposition 'fi' has a large number of meanings or uses. The most important of these is called 'fi' al-dharfiyyah' ('fi' of time and place). The locative use of the preposition 'fi' is sub-divided into two types by Ibn Hishām (1985:227) and Hasan (1973:507):

i) dharfiyyah haqiqiyyah = actual time and place ظرفيه حقيقيه

e.g. zaydun jalisun 'fi' al-ghurfati

Zayd is-sitting *in* the-room

زيدُ جالسٌ في الغرفة

Zayd is sitting *in* the room

ii) dharfiyyah majaziyyah = figurative time and place ظرفيه مجازيه

e.g. al-sàadatu 'fi' rahati al-nafsi

السعادة في راحة النفس

the-happiness *in* repose the-soul

Happiness is *in* the repose of the soul

Arab grammarians attribute many meanings to the preposition 'fi'. Ibn Hishām (1985:227) lists six meanings for the preposition 'fi', and Hasan (1973:507) lists nine. Examples of its meanings are as follows:

iii) Spatial uses of 'fi'

The preposition 'fi' expresses spatial relationships which are similar to those of English spatial prepositions *in* or *at*. Lentzner (1977:52) states that:

'fi' serves to denote relationships which are paralleled in English by either *in* or *at*. ... it is evident that 'fi' can convey both a sense of 'being on the interior' of something and also a broader sense of location in less specific terms.

e.g. al-rijalu 'fi' al-masjidi الرجال في المسجد

the-men in the-mosque

The men are in the mosque

e.g. qabaltu alian 'fi' al-matari

met-I Ali in the-airport

قابلت علياً في المطار

I met Ali *at* the airport

iv) Temporal use of 'fi'

The preposition 'fi' denotes location in time as well as location in space. In Arabic, the preposition 'fi' is the only preposition which expresses location in time, whereas in English several prepositions are used to describe location in time (e.g: *in* 1993, *on* Monday, *at* 3.00pm) - Lentzner (1977).

e.g. sayaàudu 'fi' ayyiwaqtin سيعود في أي وقت

will-return-he *in* any time

He will return *at* any time

Other uses of 'fi' that are stated by Hasan (1973:507) include:

v) sababiah = cause, reason السببيه

e.g. fa-shtahra 'fi' qadiatin khatirah فاشتهر في قضية خطيرة

became-famous-he *in* lawsuit serious

He became famous *for* taking a serious lawsuit

vi) musahabah = accompaniment, association المصاحبه

e.g. asraà al'waladu 'fi' al-dakhilin أسرع الولد في الداخلين

rushed the boy *in* the attendants

• The boy rushed *in* with the attendants

vii) istàla = superiority إستعلاء

e.g. gharada al-ta'iru 'fi' al-ghusni غرّد الطائر في الغصن

warbled the bird *in* the branch

The bird warbled on the branch of the tree

viii) muqayasah = comparison المقايسه

The preposition 'fi' can be a substitute for other prepositions. For example:

1. The preposition 'fi' could be used to replace the preposition àlā.

e.g. rabata al-rajulu al-asada 'fi' jithi' al'shajarati

ربطَ الرجلُ الأسدَ في جذع الشجرة

tied-up the-man the lion *in* trunk the-tree

The man tied up the lion *to* the trunk of a tree

2. 'Fī' can be a replacement for the preposition 'ila'.

e.g. fa-raddu aydiyahum 'fī' afwahihim ﴿فردوا أيديهم في أفواههم﴾

thrust-they hands-their *in* mouths-their

They thrust their hands *in* their mouths

The occurrence of the preposition 'fī' with verbs, in verb-preposition structures, is not common. However, there are occasions when it occurs with some verbs:

a) Some verbs take the preposition 'fī' instead of the preposition 'bi-' without any change in the meaning:

e.g. àmila 'fī' to work

sara'a 'fī' to hurry

jalasa 'fī' to sit or stay

b) Other verbs take 'fī' for one meaning, and take another preposition for other meanings:

e.g. raghiba 'fī' to desire

raghiba 'àn' to detest

3.6.3 'àlā' = *on*

على

The preposition 'àlā' denotes spatial relations. Arabic grammarians classify the preposition 'àlā' as an adverb or a preposition. The Arabic grammarian Sibawayh (1966:420) considers the preposition 'àlā' to be a locative adverb. He states that:

You say *min àlayka* (from upon you) as well as *min fawqika* (from above you).

As a preposition, 'àlā' genitivizes both common nouns (*asmā dhahirah*) and pronouns (*asmā mudmarah*). 'àlā' carries many different meanings. Ibn Hishām (1985:228) gives four meanings for the preposition 'àlā', while Hasan (1973:509) lists eight:

i) Spatial uses of 'àlā'

The preposition 'àlā' is used as a locative preposition that corresponds to the English spatial preposition *on*.

e.g. *jalastu 'àlā' al-kursiyyi*

جلست على الكرسي

sat-I on the-chair

I sat on the chair

àllaqa al-lawhata 'àlā' al-jidari

علّق اللوحة على الجدار

hung-he the-painting on the-wall

He hung the painting on the wall

ii) Temporal uses of 'alā'

e.g. 'alā' hini ghaflatin

﴿على حين غفلة﴾

on time carelessness

At a time of carelessness

'alā' fataratin mukhtalifatin

على فتراتٍ مختلفةٍ

on periods different

At different times

There are uses of 'alā' other than its spatio-temporal uses. These are listed by Hasan (1973):

iii). istila = superiority

إستعلاء

e.g. àada al-zuwwaru 'alā' al-sayyarati

عاد الزوّار على السيارة

returned the-visitors *on* the-car

The visitors came back *in* their car

iv). al-musahabah = accompaniment

المصاحبة

e.g. wa inna rabuka lathu maghfiratin li-nnasi 'alā' dhulmihim

﴿وإن ربك لذو مغفرة للنّاس على ظلمهم﴾

Verily thy Lord is rich in forgiveness for mankind for their wrong-doing.

The preposition 'alā' may occur as a substitute for other prepositions.

Examples of this substitution are as follows:

1. 'alā' can be used to replace 'min'

e.g. al-lathina itha aktalu 'alā' al-nasi yastawfun

﴿الذين إذا اکتالوا على الناس يسوفون﴾

those when take-measure *on* people demand-in-full

Those who take the measure *from* mankind demand it in full.

2. 'alā' may exist in place of 'an'

e.g. itha radiyat 'alayya' walidati

إذا رضيت عليّ والدتي

if content on-me mother-my

If my mother is content with me

3.7 Locative Adverbs

In addition to the Arabic prepositions that denote spatial relations, there are other grammatical items which express locative relations as well. These items are called locative adverbs (*dhuruf makan*). The difference between locative adverbs and locative prepositions in Arabic rests on derivation, morphology and to some extent on semantic content. Arabic locative adverbs act syntactically very much like the prepositions (*huruf al-jarr*) in genitivizing their noun complements by forming a type of

"idafa" annexation structure with them. They are all, morphologically, based on trilateral roots and one assumed to be of nominal origin.

Beeston (1970:88) writes that:

A good many concepts which in English receive expression by prepositions are rendered in Arabic by adverbially marked substantives which retain the potentiality of functioning in independent position.

The retention of independent function in syntax is total for some locative adverbs but only partial for others. Many change their case inflection from adverbial accusative (-a) to the genitive (-i) if they become the object of a preposition (*harf jarr*) (حرف جر).

e.g.: *thahaba min indi al-muàllimi* ذهب من عند المعلم

Went-he from *at* the-teacher

He left the teacher.

Adverbs of place (ظروف مكان) 'dhuruf makan' fall into two subclasses (Hasan, 1973; Eid, 1987).

1. *mubham* = vague

مُبهم

Locative adverbs such as: 'amāma' (*in front of* (أمام)), 'khalfa' (*behind* (خلف)) and 'inda' (*at* (عند)) are all vague. That is, they are not as specific as the common nouns.

2. *mukhtas* = particular

مُختص

Above, *below* and *under* are clearly in the same form-class as *in*, *on* and the rest of the English prepositions, and it seems unnatural to an English

speaker to see them in a separate class as they are in the Arabic language, where "vague" or nonspecific locatives such as 'tahta' (*under*), and 'fawqa' (*above*) are classified within the adverb category, separate from the (huruf al-jarr) prepositions.

3.7.1 'bayna' = *between, among(st)*

بين

The majority of Arab grammarians consider 'bayna' to be an adverb of place or time.

'Bayna' denotes a place between two things located on both sides of its two reference-points, as maintained by Hasan (1973) and Al-Syuti (1977).

Despite the perception that 'bayna' has two reference-points, Al-Syuti (1977:201) and Hasan (1973:286) state that it may express the notion of location between more than two things.

i) Place

a) 'Bayna' = *between*

بين

e.g.: kánnahu yakhudu bahran asswadan bayna jabalayni shamikhayni.

كأنه يخوض بجرأ أسوداً بين جبلين شاهقين

As if he was-entering sea black *between* two-mountains towering.

As if he was entering a black sea between two towering mountains.

b) 'Bayna' = *among(st)*

بين - وَسْطًا

e.g.: Jalastu 'bayna' al-qawmi

جلست بين القوم

sat-I *among* the-people

I sat *among* the people.

ii) Time

The adverb 'Bayna' expresses temporal separation as well.

e.g.: Jaā al-zairu 'bayna' al-fajri wa-al-dhuri

جاء الزائر بين الفجر والظهر

came the visitor *between* the-dawn and noon

The visitor came *between* the dawn and noon.

3.7.2 'inda' = *at, by, with, near*

عند

'inda' is an adverb denoting place and time. Most Arab grammarians lead us to believe that it is in fact an adverb which denotes either one of the following notions (Al-Syuti, 1977:164):

a)	presence:	حاضراً
	perceptible (hissi)	حِسِّي
	abstract (mànawi)	معنوي
b)	proximity	قريباً
	perceptible (hissi)	حِسِّي
	abstract (mànawi)	معنوي

'inda' can also occur as a noun denoting the time of presence.

Furthermore, Ibn Hishām (1934) qualifies 'inda's' status by noting that it occurs only as an adverb or as a genitive noun after the preposition 'min'. It is worth mentioning here, therefore, that this important 'adverb' is not discussed by those 'particle' writers even though it occurs frequently in the Qurān.

i) Place

a) 'inda' = *at*

e.g. raytahu 'inda' al-bayti رأيتُه عند البيت

saw-I-him *at* the house

I saw him *at* the house

e.g. kana jalisan 'inda' ra'si al-sariri كان جالساً عند رأس السرير

was-he sitting *at* the head of the bed

He was sitting *at* the head of the bed.

b) 'inda' = *near*

e.g. illa al-lathiyina àhatahum 'inda' al-masjidi al-Harām

﴿إِلَّا الَّذِينَ عَاهَدْتَهُمْ عِنْدَ الْمَسْجِدِ الْحَرَامِ﴾

except those with whom you made a treaty *near* the sacred mosque.

except those whom you made a treaty with *near* the sacred mosque.

c) 'inda' = *by*

e.g. Biwadin ghayri thii zaràin 'inda' bitika al-muharram

﴿بِوَادٍ غَيْرِ ذِي زَرْعٍ عِنْدَ بَيْتِكَ الْحَرَامِ﴾

in-a-valley without cultivation *by* thy sacred house

in a valley without cultivation *by* thy sacred house.

d) 'inda' = *with*

e.g. aqama 'inda' sadiqihi fi London أقام عند صديقه في لندن

stayed-he *with* friend-he in London

He stayed with his friend in London.

ii) 'inda' = time

e.g. wasala sa'dun 'fi' al-matari 'inda' al-fajri

وصل سعد في المطار عند الفجر

arrived sa'ad *in* the airport *in* the-dawn

Sa'ad arrived *at* the airport *at* dawn.

iii) 'inda'= to have

'Inda' is also used to express, on the one hand, something that one has with oneself as his actual possession and, on the other hand, it expresses simple or general possession:

e.g.: innahum la-yaalamuna ma-indahum min kunuzin

إنهم لا يعلمون ما عندهم من كنوز

They don't-know they have of treasures

They don't know the treasures they have.

e.g. indana tabaqatun min al-kuttab

عندنا طبقة من الكتاب

have-we a-class of the-writers

We have a class of writers.

3.7.3 'amāma' and 'quddama' = *in front of*

أمام وقدام

The adverb 'amāma' has the same meaning as the adverb 'guddama': they both express spatial relations. They denote close or remote space with regard to a given object from one's own position.

In fact, the majority of Arab grammarians take such words as 'amāma' and 'guddama' for granted and hence do not normally discuss them in detail, but usually treat them as adverbs.

i) Place

e.g. 'amāma' = *in front of*

raytu Omara 'amāma' al-madrasati

رأيت عمر أمام المدرسة

saw-I Omar *in front of* the school

I saw Omar *in front of* the school.

e.g. 'quddama' = *in front of*

kana waqifun quddamaka 'fi' al-safi

كان واقف قدامك في الصف

Was-he standing *in front of*-you in the queue

He was standing *in front of* you in the queue.

ii) Time

Both 'amāma' and 'guddama' can be used to express time in the future.

e.g.: lazala amāmana thaman sa'ati. لازال أمامنا ثمان ساعات

still-there *in front of-us* eight hours

There are still eight hours ahead of us.

3.7.4 'tahta' = *underneath, under, beneath, below*

تحت

'tahta' is an adverb which is widely used in Arabic to indicate place. It indicates place either in a direct line with a human observer, such as *under, underneath, and beneath*, or in nondirect line as in the case of the preposition *below*. It also may express contact, close proximity, or any point lower than the reference-point.

i) 'tahta' = *underneath*

e.g.: wajadtu al-kitaba 'tahta' al-maqàdi وجدت الكتاب تحت المقعد

found-I the-book under the-chair

I found the book under the chair.

ii) 'tahta' = *beneath*

e.g.: 'othera 'álā' al-tifli 'tahta' al-anqadi

عُثِرَ على الطفل تحت الأنقاض

was-found the-boy beneath the-ruins

The boy was found beneath the ruins.

iii) 'tahta' = *under*

e.g.: al-korati 'tahta' al-jasri tmaman

الكرة تحت الجسر تماماً

the-ball *under* the-bridge exactly

The ball is right *under* the bridge.

iv) 'tahta' = *below*

e.g. hal aktubu ismi 'tahta' al-satri?

هل أكتب اسمي تحت السطر

shall write-I my-name *below* the line

Shall I write my name *below* the line?

3.7.5 'dúna' = *below, near*

دون

Most grammarians assert that 'dúna' is an adverb. Hasan (1973:147) writes that 'dúna' is an adverb of place which is used to indicate proximity, but Al-Syuti (1977) maintains that 'dúna' expresses any point lower than the reference point.

i) 'dúna' = *below*

e.g.: qàda zaydun 'dúna' Àmro

قعد زيد دون عمرو

sat Zayd *below* Àmro

Zayd sat *below* Àmro.

ii) 'dúna' = *near*

e.g.: jalastu 'dúna' al-dayfi

جلست دون الضيف

sat-I *near* the-guest

I sat *near* the guest.

3.7.6 'asfla' = *below*

أسفل

'asfla' is one of the adverbs that denote place. It is used to indicate a point lower than the reference point (Eid, 1987).

e.g.: yaskunu aliun 'asfla' minkum 'fi' al-ìmarati

يسكن علي أسفل منكم في العمارة

live Ali *below* from-you in the-building

Ali lives *below* you in the building.

e.g. ra'aytu al-hilala 'asfla' al-ufuqi

رأيت الهلال أسفل الأفق

saw-I the-moon *below* the-horizon

I saw the moon *below* the horizon.

3.7.7 'fawqa' = *above, on, on top of, over*

فوق

'fawqa' is the opposite adverb to 'tahta'. This vertical axis adverb indicates place. It may express a point in direct or non-direct line with the human observer; it also may denote contact with the surface of an object.

i) 'fawqa' = *above*

e.g.: al-ta'iratu 'fawqa' al-sahabi

الطائر فوق السحاب

the-plane above the-clouds

The plane is above the clouds.

ii) 'fawqa' = *over*

e.g.: yuhalliqu al-àsfuru 'fawqa' al-shajarati يُحلّق العصفور فوق الشجرة

hover the-bird over the-tree

The bird is hovering over the tree.

iii) 'fawqa' = *on*

e.g.: al-kitabu 'fawqa' al-tawilati

الكتاب فوق الطاولة

the-book *on* the-table

The book is *on* the table.

iv) 'fawqa' = *on top of*

e.g.: al-sabyyu waqifun 'fawqa' al-saqfi

الصبي واقف فوق السقف

the-boy stand on top of the-roof

The boy is standing on top of the roof.

3.7.8 'wasta' = *among(st), in the middle of*

وسطاً

'wasta' is an adverb which denotes a place surrounded by several entities. The place indicated would be in the midst of these entities.

i) 'wasta' = *among(st)*

e.g.: yaskunu zaydun fi baytin 'wasta' al-ashjari

يسكن زيد في بيت وسط الشجر

live zayd in house *among* the-trees

Zayd lives in a house *among* the trees.

ii) 'wasta' may also denote a (spatially) central location:

e.g.: namati al-tiflatu 'wasta' al-ghurfati نامت الطفلة وسط الغرفة

slept the-young-girl *in the middle of* the room

The young girl slept *in the middle of* the room.

3.7.9 'khalfa' and 'warā' = *behind*

خلفاً و وراء

These synonymous adverbs are used to indicate place from a horizontal perspective. These horizontal adverbs seem to be precise in indicating a place when compared with the proximity adverbs.

i) 'khalfa' = *behind*

خلفاً

e.g.: jala sa sultanu 'khalfa' al-sakhrati جلس سلطان خلف الصخرة

sat Sultan *behind* the-rock

Sultan sat *behind* a rock.

ii) 'warā' = *behind*

وراء

e.g.: 'warā' baytika baytun jamilun

وراء بيتك بيت جميل

behind house-your a-house beautiful

There is a beautiful house *behind* yours.

CHAPTER FOUR

RESEARCH METHODOLOGY

4.1 Introduction

This chapter is concerned with the methods of obtaining relevant data from tests conducted on a selected sample for the investigation. The methodology of the experiment will be discussed in terms of five topic areas: hypotheses, subjects, instrument, data collection procedures, and analysis techniques.

4.2 Hypotheses

The goal of this study is to test and evaluate the following hypotheses:

1. Standard Arabic will interfere with Arab learners' acquisition of English spatial prepositions.

2. Arabic dialects will interfere in Arab learners' acquisition of English spatial prepositions.
3. Arab learners will tend to have difficulty determining which English spatial preposition is appropriate in contexts where there is a shared primary counterpart in Arabic.
4. Arab learners will tend to omit spatial prepositions in English where there is no preposition in the equivalent Arabic context.
5. Arab learners will tend to use English spatial prepositions incorrectly in contexts where their use is different from the use of their counterparts in Arabic.

4.3 Subjects

The subjects of this study are four groups of Saudi Arabian students enrolled at King Saud University, in the English Language Department, College of Education in Abha. These students are studying English as their major subject. The subjects are composed of four groups which represent English Language students from the first year to the fourth year.

The first year group consists of eighteen students who have just finished high school and the intensive course required by the English Language Department. These students have taken one English course for six years when they were studying at the intermediate and secondary levels (in

school). They have also finished one semester of an intensive course for twenty five hours a week. This course is taught to all students who want to make English their field of study.

The second year group consists of twenty five students who have completed the requirements and successfully passed the examinations which were set by the English Department. In the second year, students usually take courses that improve their level of proficiency (e.g. Spoken English, Composition, and Translation)¹.

The third year group consists of twenty three students. These students study composition and English grammar. In addition, the third year students are required to take Linguistics courses (e.g. Applied Linguistics and Language Acquisition)¹.

The fourth year group is composed of seventeen students who are due to graduate soon. These students have completed all the required courses and are, or will be taking the English Teaching Practice course as the data of this study is being collected.

All the students, numbering eighty, studying in the English Language Department come from different parts of the country, but mainly from the southern province; they are all native speakers of Arabic.

Arabic (Standard Arabic) is the official language of Saudi Arabia and is the medium of instruction in schools as well as the language of the

¹ The 1989 Degree Plan Form for English Majors

media. The dialects which are used at home, and in informal situations, are considered in this study from the point of view of their preliminary accountability in interfering with the process involved in the learning of English spatial prepositions.

Although Standard Arabic is the medium of instruction, the subjects, represent a range of dialects spoken in their own regions.

4.4 Instrument

4.4.1 Introduction

The data of this study comprise the results of five tests which were designed to measure the students' abilities in learning the English spatial prepositions under investigation. The analysis of this data forms a major component of this study.

The five tests consisted of: two fill-in-the-blank tests, one with ten items supplied (FBT), and one with picture stimuli (PT); two translation tests, Arabic to English (ATT) and English to Arabic (ETT); and one composition test (CT).

Each test will be described below, together with an explanation of how and for what purpose it was designed, and how it was pretested and modified where appropriate. Finally, the criteria employed in scoring and marking will be briefly summarised.

4.4.2 Fill-in-the-blank Test (FBT)

The FBT comprised thirty sentences in English with the spatial preposition deleted. The ten spatial prepositions under investigation were listed above the questions with the instruction to fill in the blanks using one of the listed prepositions (see Appendix 1).

This test was written in accordance with the steps recommended for preparing simple-completion grammar tests. According to Madsen (1983:43-44):

There are three steps to follow in preparing simple-completion grammar tests: (1) Select the grammar points that need to be tested; (2) provide an appropriate context; and (3) write good instructions.

The test was designed to use each of the target prepositions three times, although the subjects were not informed of this. Care had to be taken to construct sentences in which only one of the ten prepositions was appropriate. This test is not a cloze test, in that firstly, the individual sentences are not related in meaning, as in a paragraph or longer text for example; secondly, in cloze testing words are deleted according to a frequency formula, i.e. every sixth, seventh ... twelfth word; and thirdly it was not designed to test reading ability but a specific grammatical item. As such, then, the FBT is a specifically diagnostic, as distinct from formative, test.

It was expected that due to their relatively spontaneous and context reduced nature, the FBT and PT would be more likely to indicate any dialect interference than the translation tests (ATT and ETT), on which there are more constraints in this respect, as will emerge in the discussion of these tests below.

The FBT was pretested twice. First it was given to native speakers of English who were second year students in the English Language Department, Sheffield University. It was administered in the class by Mr. Nixon who was the teacher of the class at the time and also the supervisor of this study. Second, it was given to a group of Saudi postgraduate students who were studying in the UK. Following pretesting, some ambiguities which had emerged were removed, and unnecessarily difficult vocabulary changed.

The test was scored as one mark for each (unique) correct item, with three possible correct responses for each preposition. Due to the occasional possibility of more than one correct answer, the test was marked according to the clearly expressed preference of the majority of native speakers in the pretesting. For example item No 12 has at least two logical possibilities: "... *behind* the table" and "... *under* the table". Most native speakers preferred *under*, and this choice was considered to be the one correct response in the eventual test.

4.4.3 Picture Test (PT)

The PT consisted of twenty settings (picture and incomplete sentence). The prepositions deleted were not listed in this test, but the choice of response was left open to the subject. Instructions were given to complete each sentence appropriately with reference to the picture stimulus. Each of the ten target prepositions was tested in two settings (see Appendix 2).

Pictures were used in this test to help students to visualise the reference of the English spatial prepositions when using them. Cohen (1980:75) stated:

... well-designed pictures can serve useful functions. They can get stimulus information across to the students without the use of elaborate verbiage.

The students of this study were presented with pictures accompanied with incomplete sentences. Cohen (1980:76):

In actual fact, pictures do not usually appear alone as a stimulus for language items ..., but rather in conjunction with some oral or written material.

Each of the pictures contained a specific and clear depiction of a particular spatial relationship between two (or more) objects, and as such there was far less scope for ambiguity than in the FBT. This test was useful in targeting specific prepositions which were likely to be confused, e.g.: *above* and *over*. The use of picture stimuli provides a more context-

embedded test which might be expected to produce more correct responses than the FBT.

The pretesting and modification were similar to those of the FBT. The test was scored as a mark for each correct response, with two possible correct responses for each preposition. Again there was occasional scope for more than one semantically correct response due to ambiguities in the picture stimuli. Native speaker preference continued to be the criterion for correctness of response; however, where such preference was for a response not targeted by this study the score was left blank rather than marked as correct where it occurred in the test data.

4.4.4 Translation Tests (ATT, ETT)

The Arabic translation test comprised thirty sentences constructed to test the use of the ten target English prepositions in translating into English three Arabic spatial prepositions (i.e. 'fi'= *in*; 'bi'= *in/at*; 'ālā'= *on*) and those locative adverbs which act as prepositions (see Section 3.6).

The English translation test similarly comprised thirty sentences containing three examples of each of the ten target English spatial prepositions.

Certain conditions were taken into consideration based on the study by Matthews-Bresky (1972:58):

1. that a test of comprehension is not in question;

2. that the incidental features of the material to be translated are not difficult, relative to the class standard;
3. that on the relevant point one response only is acceptable;
4. that between a given mother-tongue and a given target-language there are some points of grammatical divergence which are normally best tested by controlled translation.

The ATT was designed to elicit the English prepositions which the subject(s) perceived to be the counterpart to specified Arabic prepositions/adverbs. By specifying the word to be translated rather than leaving a blank, even where a picture stimulus is given, it is possible to include a wider variety of contexts of use. For example the sentence:

He is *at* Sally's house

is not easily put into the FBT or PT.

A further point to mention is that by giving Standard Arabic in the ATT there is no scope for detecting dialect interference (Hypothesis 2).

The ATT was pretested on a randomly selected group of Arabic (L1) speakers of English pursuing postgraduate studies in English universities. Out of approximately one hundred tests distributed (including the ETT) roughly sixty replies were received. As a result of this pretesting some vocabulary was changed and some ambiguous

sentences rewritten. The ATT was proofread for mistakes or ambiguities in the Arabic by two Arab linguists.

Scoring was out of a possible three correct responses for each of the 10 target prepositions which the ATT was designed to elicit.

Marking for the ATT presented a particular difficulty: how were non-targeted but nevertheless correct alternative responses to be evaluated? Native speaker competence in English was needed to evaluate such responses. The ATT was marked in co-operation with three native speakers of English. Responses which were valid correct alternatives to the desired response were discounted, while those perceived by native speakers to be incorrect were marked as errors.

The ETT was designed to elicit the Arabic prepositions/adverbs which the subject(s) perceived to be the counterpart to specified English spatial prepositions. Again such a translation exercise provides an opportunity to observe a broader pattern of preposition use than in the FBT and PT alone. In addition, the translation process of English to Arabic may reveal difficulties not apparent in the ATT (and vice versa). It is also possible that there will be some dialect interference in this test, although in this context, where the sentence is being translated as a whole unit, there may be more conformity to Standard Arabic than in the FBT and PT, as mentioned above (see Section 4.4.2).

Finally, a general point to make about the purpose of the ATT and ETT is that these translation tests can be expected to produce a much freer variation of language use than the FBT and PT. Where the context is

more naturalistic in this way there may be more variation in responses due to the possible variability of L1; or it may be that there is a higher success rate due to the way in which translation more closely approximates natural language use than more mechanical fill-in-the-blank exercises.

The ETT was pretested and scored in parallel with the ATT. It was proofread by three native speakers of English. The tests were marked by the author and checked by two Arab linguists for possible alternative correct responses; where these were found they were disregarded for the purposes of analysis.

4.4.5 Composition Test (CT)

This test required the subjects to write a composition of 150-200 words on one of two topics. The topics were chosen to provide a choice of style of writing (description or comparison) as well as content. In each case twenty common and potentially relevant items of vocabulary were listed as a way of helping the subjects to complete the task, which was timed over thirty minutes. The vocabulary was chosen to stimulate the use of spatial prepositions by suggesting such spatial relationships as *in*, *on*, *at* and so on.

The purpose of this test was to give the subjects the opportunity to express themselves freely in their own words. This has both advantages and disadvantages. A CT can reveal much more about the subject's use

of English than the previous tests in a number of ways. Firstly, knowledge and use of grammar and vocabulary will increase over the period of the four years represented by the subjects of this study. At the same time there may not be an equivalent increase in the accuracy of the use of spatial prepositions. Such a finding would suggest fossilisation, perhaps as a result of persistent L1 interference.

A preference for certain prepositions and/or a particular pattern of error may be revealed. It might be anticipated that some subjects will become involved in the process of writing, particularly in such a relatively communicative context, to the extent that concern for accuracy ceases to be the sole or even main priority. In such circumstances the variability of approximative system or interlanguage may be revealed, and thus a truer picture of the subject's competence emerge.

On the other hand a standard criticism of CTs is their unreliability in two respects. Harris (1969:69-70) notes that

1. Composition tests are unreliable measures because (1) students perform differently on different topics and on different occasions; and (2) the scoring of composition is by nature highly subjective.
2. In writing compositions, students can cover up weaknesses by avoiding problems (e.g. the use of certain grammatical patterns and lexical items) they find difficult. Such evasion is impossible with well-prepared objective test.

The CT was pretested by the same sample as the ATT and ETT; some key vocabulary was changed and minor alterations made to the instructions.

The CT was scored by assigning a value (correct/incorrect) to each use or failure to use, either by omission or substitution, one of the ten targeted English spatial prepositions.

The marking was done by the author in co-operation with three native speakers of English. The number of correct and incorrect responses was recorded and totalled for each of the target prepositions used.

4.5 Data Collection Procedures

Since the subjects of this study are college students, the researcher was able to administer the tests in the college classrooms. Although the faculty of the English Department gave up some of their classes for these tests to be conducted, the researcher was not able to finish within the scheduled period of twelve weeks, due to the tight syllabus and short term. However, the researcher managed to administer all tests and to test all four groups (Year 1 to Year 4) by the end of the term, i.e. within fifteen weeks.

The tests were given to each year in the following order:

Fill-in-the-blank Test

Picture Test

English Translation Test

Arabic Translation Test

Composition Test

The students were given twenty minutes to complete each of the first four tests and half an hour to finish the composition test.

4.6 Analytical Statistical Techniques

Several statistical techniques were used to evaluate the hypotheses.

4.6.1 ANOVA

The 'Analysis of Variance' was used to test individually the variations in performance of the students in learning each English spatial preposition under investigation in this study. It was also used to measure the overall level of performance by same subjects when using different tests for the same purpose. The ANOVA test is a parametric test which can be used in comparing more than two group means at one time. In other words, this test was used to examine the effect of the different variables on the learning of the prepositions.

4.6.2 Chi-Square

The 'Chi-Square' was used here to test two things. First, this test was used to measure the degree of association between the prepositions, and the extent that either the year or the test affects the use of the prepositions. Second, since some of the prepositions are used in place of

each other, this test examines the significance of the prepositions' interchangeability (see Ch. Five, Goodness of Fit).

4.6.3 Regression

Regression analysis is an analytical method used for exploring relationships between a response variable and other predictor variables.

The aim of regression analysis is to express the response variable as a function of the predictor variables. Expressing the response variable helps to predict the values of the response variable, identify which variables most affect the response, or verify hypothesised causal models of the response (Gunst and Mason, 1980).

All applications of linear regression methodology involve the specification of a linear relationship between the response and predictor variables. The formula of the linear relationship takes the form:

$$y = c_1 x_1 + c_2 x_2 + c_3 x_3 + E$$

Regression analysis was used to examine the possible causes of wrong answers made by the students. These causes are viewed as explanatory variables contributing towards the overall errors committed by the students. To test if any of these causes were significant in their contribution, a regression model was set up. This was used for sources of error such as Standard Arabic, Dialects, etc... (see Ch. Five).

CHAPTER FIVE

DATA ANALYSIS AND RESULTS

5.1 Introduction

The purpose of this chapter is to present the analysis of the data which has been produced to serve the aims of this study.

In this chapter the results pertaining to learners' performance in the use of spatial prepositions are reported and analysed. One analysis was carried out by comparing the mean scores of the accepted correct answers for each preposition for the four years in the four of the five tests; Fill-in-the-blank test (FBT), Picture test (PT), Arabic translation test (ATT) and English translation test (ETT) (Figs. 1-8). A second measurement of the learners' performance is the composition test (see below). The performance analyses will be followed by analysis of errors committed by the subjects of this study, using different statistical tests to evaluate the null hypotheses.

The performance and error analyses presented in Chapter Five will be discussed and interpreted in Chapter Six.

5.2 Learners' Performance

The Figures (1-8) presented below show the learners' performance in learning the English spatial prepositions under investigation throughout the four years. The result of learners' performances on each test is presented in two graphs to avoid any overlap on the presentation of the results. The results of each test are also briefly discussed. In addition, a table of the ten English spatial prepositions based on the subjects' mean scores demonstrated on Figures 1-8 will also be presented below. Finally, a graph (Fig 9) of the subjects' overall performance on the four tests will be presented.

Fill-in-the-Blank Test

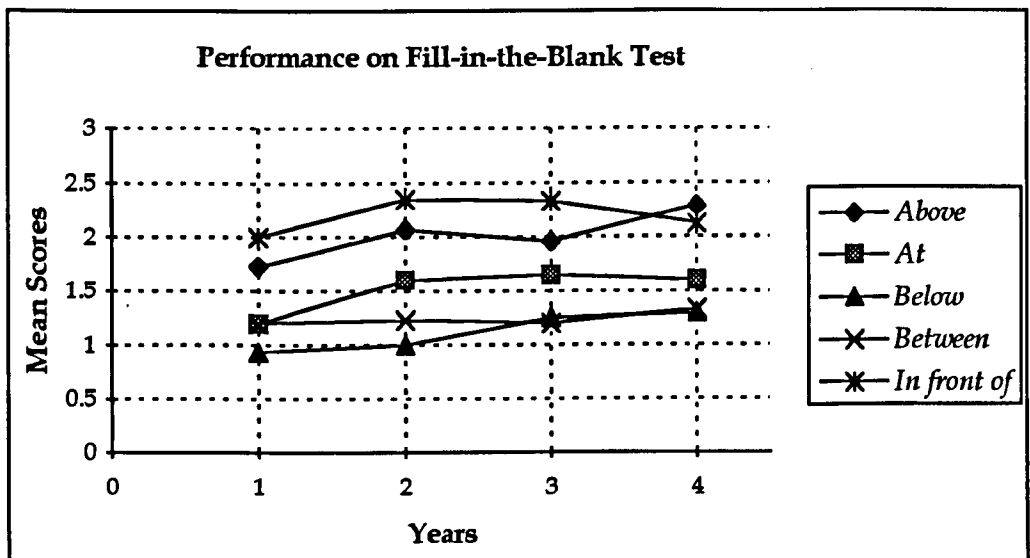


Figure 5.2.1

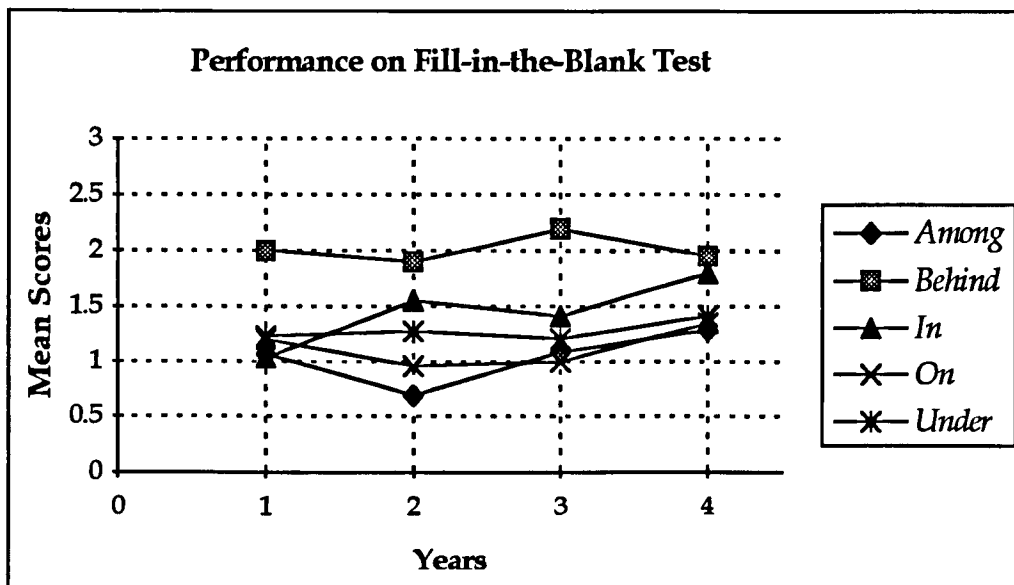


Figure 5.2.2

The Figures 5.2.1 and 5.2.2 show the results of the test which comprised thirty incomplete sentences, testing each of the ten target spatial prepositions three times. A maximum score for each preposition would therefore be 3. Thus a score of 1.9 for example indicates a mean average correct answer of 1.9 out of a possible 3.

The prepositions with highest mean scores were *above*, *in front of* and *behind*. Those with the lowest mean were *among*, *between* and *below*.

Overall, there is little apparent change in the accuracy of the use of the prepositions across the four years; sometimes accuracy improves slightly, e.g. *among* and *in*, and sometimes it deteriorates temporarily, e.g. *among* Year 1 to Year 2.

Picture Test

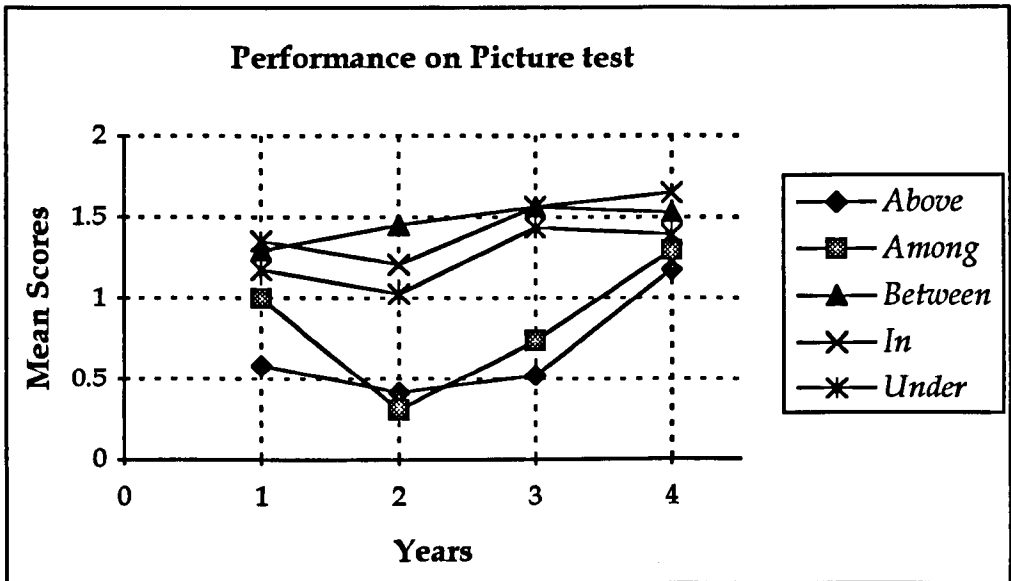


Figure 5.2.3

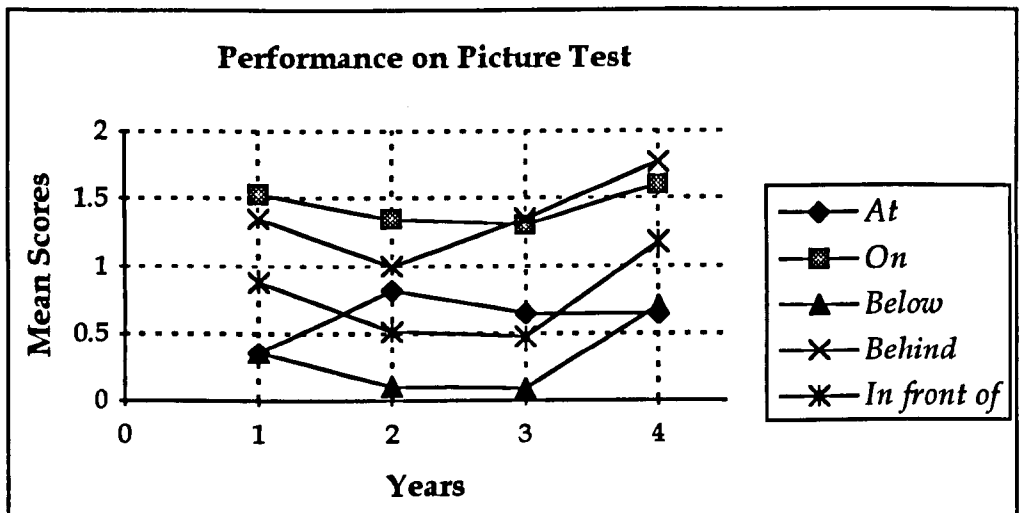


Figure 5.2.4

This test (Figs. 5.2.3 and 5.2.4) comprised twenty items, testing each preposition twice. Scores therefore indicate mean average correct use out of a possible maximum of two accurate responses.

The prepositions with the highest mean score were *in*, *on*, *between* and *behind*. Those with the lowest scores were *above*, *below* and *among*.

There was a marked deterioration in accuracy in Year 2, eight out of ten prepositions, especially *among*, although compare *at* with *below*. Overall, there was a slight improvement in usage from Year 1 to Year 4, in contrast with results from the FBT.

Arabic Translation Test

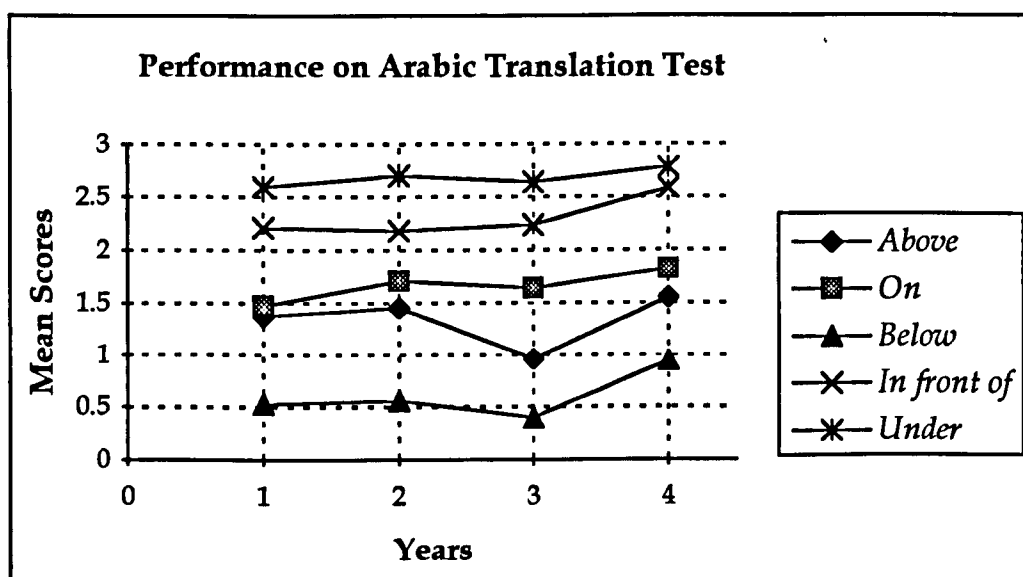


Figure 5.2.5

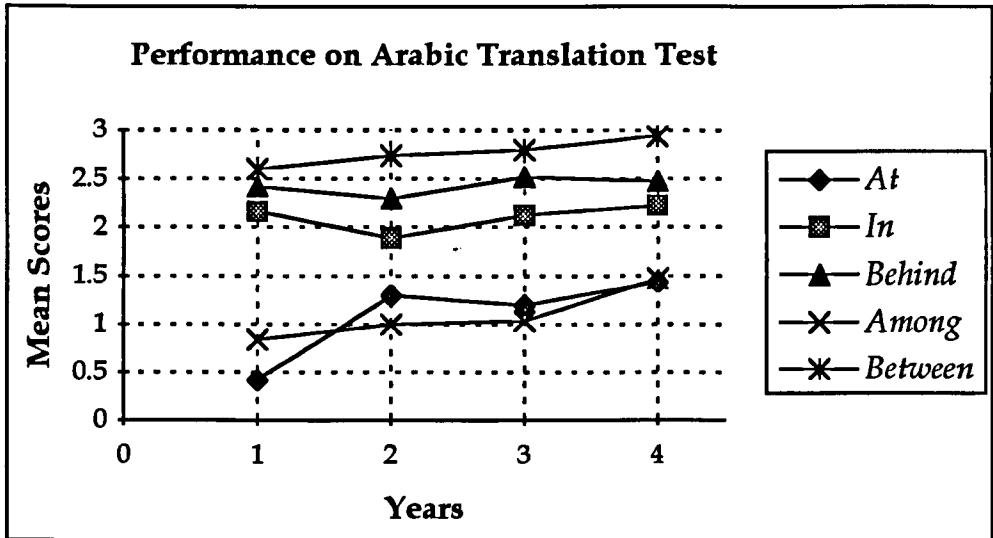


Figure 5.2.6

In this test thirty items tested the ten prepositions giving a possible maximum of three correct answers in each case.

The prepositions with the highest mean scores were *under*, *in front of*, *behind* and *between*. Those with the lowest scores were *below*, *among* and *at*.

Overall, there was little improvement in accuracy from Year 1 to Year 4; in some cases there is deterioration, i.e. *under* and *above* (see Figs. 5.2.5 and 5.2.6).

English Translation Test

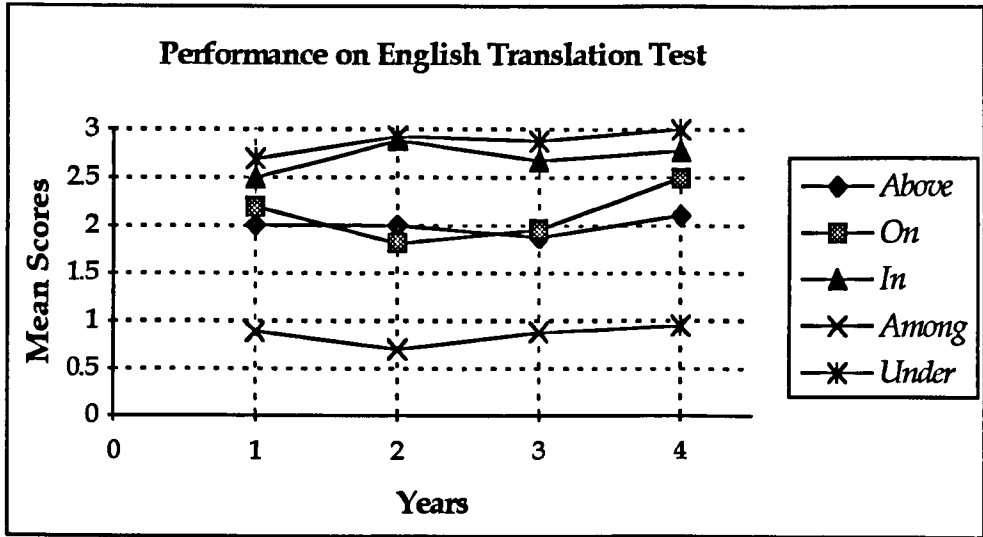


Figure 5.2.7

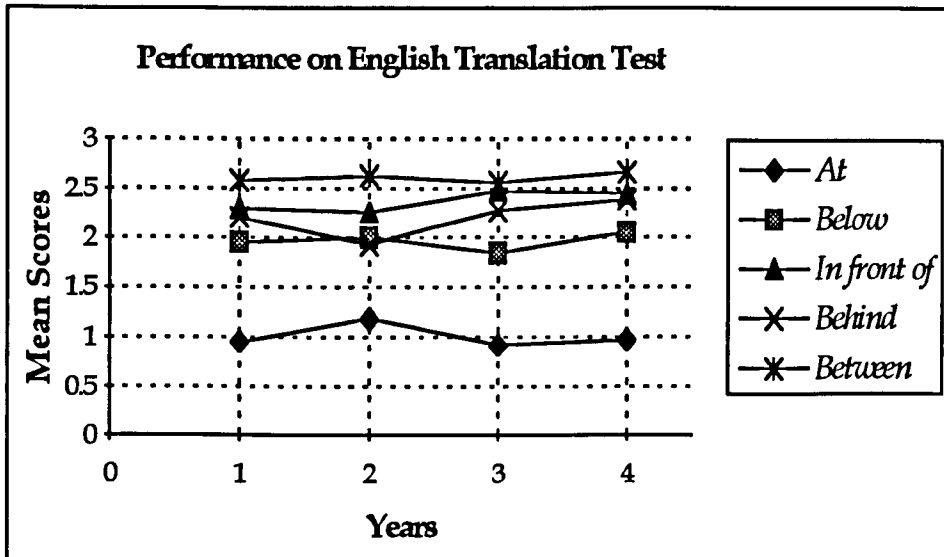


Figure 5.2.8

Again thirty sentences tested the ten prepositions giving a maximum possible score of three for each preposition.

In this test (Figs. 5.2.7 and 5.2.8) the highest mean scores were for *in*, *under*, *between* and *in front of*. The lowest scores were for *among* and *at* which scored significantly lower than the other eight prepositions.

As in the FBT, there was little change in the learners' performance over the four years, although this test produced the highest score, revealing average high accuracy for some prepositions.

Performance on Tests

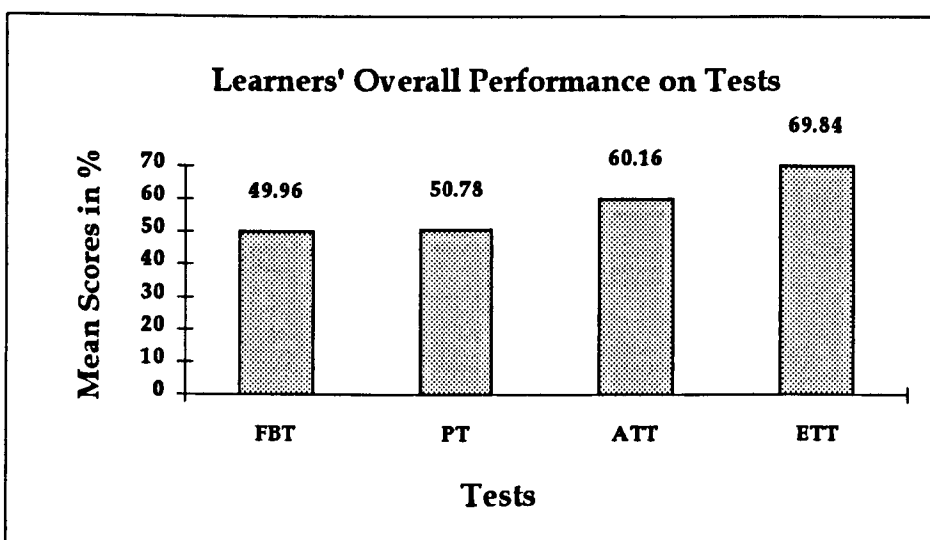


Figure 5.2.9

Fig 5.2.9 shows a comparison between the subjects' overall performance in each test. The mean score for each test was calculated by adding together the scores for each preposition for each of the four year groups. The results show that the FBT and PT produced similar results overall, although a comparison of scores for individual prepositions shows variation between the two tests (see ch. six for discussion). However, the ATT produced a higher average score and the ETT a higher one again. One of the main reasons for this must be in the nature and design of the tests themselves and this is discussed below (6.2.1.3, 6.2.1.4).

Table 5.2.1

Prepositions ranking order in tests, showing mean average scores*

Fill-in-the-Blank Test (FBT)	Pictures Test (PT)	Arabic Translation Test (ATT)	English Translation Test (ETT)
<i>In front of</i> 2.2	<i>On</i> 1.5	<i>Between</i> 2.78	<i>Under</i> 2.90
<i>Behind</i> 2.1	<i>Between</i> 1.46	<i>Under</i> 2.69	<i>In</i> 2.70
<i>At</i> 1.51	<i>In</i> 1.44	<i>Behind</i> 2.43	<i>Between</i> 2.60
<i>In</i> 1.45	<i>Behind</i> 1.36	<i>In front of</i> 2.30	<i>In front of</i> 2.50
<i>Between</i> 1.29	<i>Under</i> 1.26	<i>In</i> 2.09	<i>Behind</i> 2.20
<i>Under</i> 1.26	<i>Among</i> 0.84	<i>On</i> 1.66	<i>On</i> 2.10
<i>Above</i> 1.15	<i>In front of</i> 0.76	<i>Above</i> 1.33	<i>Above</i> 2.00
<i>On</i> 1.13	<i>Above</i> 0.67	<i>At</i> 1.09	<i>Below</i> 1.96
<i>Below</i> 1.12	<i>At</i> 0.62	<i>Among</i> 1.08	<i>At</i> 1.00
<i>Among</i> 1.03	<i>Below</i> 0.31	<i>Below</i> 0.6	<i>Among</i> 0.86

*The FBT, the ATT and ETT tests are marked out of 3 possible correct answers.

*The PT is marked out 2 possible correct answers.

5.3 Composition Test (CT)

The CT was scored by recording the number of correct and incorrect uses of the ten spatial prepositions.

The tables, below, show the following:

- 1) *In* is clearly the most commonly used preposition, 178 instances, with a good accuracy rate (78% - 87%).
- 2) *At* is also relatively common (34 instances). Although there is not enough data here for statistical analysis it appears that *at* is used with markedly less accuracy than *in*, with which it is often confused by Arab learners of English.
- 3) *On* was the third most commonly used, 20 instances, but does not occur in Year 3.
- 4) Of the target prepositions, *in front of* and *behind* were not used.
- 5) Six prepositions were used by Year 1, eight by Year 2, only four by Year 3 and five by Year 4.
- 6) There was a general increase in accuracy over the four years. (Average accuracy in spatial preposition use was 66%, 66%, 74% and 81% respectively for Years 1-4).

- 7) In Year 4, there were fewer instances of spatial prepositions than in Year 2 and, especially, Year 3, however the number of incorrect responses was much lower relative to correct responses.

Table 5.3.1: Year 1: Composition Test

Preposition	Total Number of Responses	Number of correct Responses	Number of incorrect Responses
<i>At</i>	11	3	8
<i>Between</i>	2	1	1
<i>On</i>	7	4	3
<i>In</i>	33	26	7
<i>Under</i>	2	2	0
<i>Among(st)</i>	1	1	0

Table 5.3.2: Year 2: Composition Test

Preposition	Total Number of Responses	Number of correct Responses	Number of incorrect Responses
<i>At</i>	3	0	3
<i>Between</i>	2	0	2
<i>On</i>	9	3	6
<i>Under</i>	2	1	1
<i>In</i>	47	37	10
<i>Above</i>	1	1	0
<i>Among(st)</i>	1	1	0
<i>Below</i>	1	1	0

Table 5.3.3: Year 3: Composition Test

Preposition	Total Number of Responses	Number of correct Responses	Number of incorrect Responses
<i>At</i>	12	4	8
<i>Between</i>	4	3	1
<i>In</i>	57	47	10
<i>Under</i>	1	1	0

Table 5.3.4: Year 4: Composition Test

Preposition	Total Number of Responses	Number of correct Responses	Number of incorrect Responses
<i>Between</i>	4	2	2
<i>At</i>	8	5	3
<i>On</i>	4	3	1
<i>In</i>	41	36	5
<i>Among(st)</i>	1	1	0

5.4 The Hypotheses

After marking the first four tests (FBT, PT, ATT and ETT) the errors were identified and counted. A wide variety of errors in the use of English spatial prepositions were classified according to the hypotheses of this study. The null hypotheses and their alternatives will be presented below and will be discussed and interpreted in the following chapter.

5.4.1 Hypothesis 1

H_0 Standard Arabic will not interfere with Arab learners' acquisition of English spatial prepositions.

H_1 Standard Arabic will interfere with Arab learners' acquisition of English spatial prepositions.

Since the performances in each test were different, this hypothesis was tested separately against the results of each test individually.

Where the coefficient is significantly different from zero, there is evidence to support the view that Standard Arabic is a possible cause of interference in the acquisition process. Conversely, where the coefficient is not significantly different from zero there is no evidence against the null hypothesis.

The tables show the coefficient potentially relating to errors due to standard Arabic interference with their standard errors. In order to determine whether the coefficients are significantly different from zero a

t-test is carried out and the respective p values calculated. The closer the p value is to zero, the more significant the evidence is against the null hypothesis.

Table 1.1

Fill-in the-blank Test

Year	Coef.	Stdev.	T-test	P
Year 1	0.664	0.403	1.65	0.151
Year 2	0.805	0.337	2.39	0.054
Year 3	0.967	0.538	1.80	0.122
Year 4	0.778	0.420	1.85	0.114

Table 1.2

Pictures Test

Year	Coef.	Stdev.	T-test	P
Year 1	1.173	0.202	5.81	0.001
Year 2	1.000	0.314	3.18	0.019
Year 3	1.080	0.404	2.67	0.037
Year 4	1.271	0.178	7.12	0.000

Table 1.3

Arabic Translation Test

Year	Coef.	Stdev.	T-test	P
Year 1	1.089	0.201	5.40	0.003
Year 2	1.062	0.208	5.11	0.004
Year 3	1.100	0.233	4.72	0.005
Year 4	1.071	0.378	9.18	0.000

Table 1.4

English Translation Test

Year	Coef.	Stdev.	T-test	P
Year 1	1.251	0.034	36.88	0.000
Year 2	1.062	0.111	11.18	0.000
Year 3	1.331	0.097	14.21	0.000
Year 4	1.290	0.063	20.51	0.000

From these tables we observe:

- 1- In the FBT there is insufficient evidence, for all four years, against the null hypothesis. There is little evidence suggesting interference from standard Arabic, since $p > 0.05$.

- 2- For the PT, ATT AND ETT there is strong evidence against the null hypothesis, $P < 0.05$, implying strong Standard Arabic interference.

5.4.2 Hypothesis 2

H_0 Arabic dialects will not interfere in Arab learners' acquisition of English spatial prepositions.

H_2 Arabic dialects will interfere in Arab learners' acquisition of English spatial prepositions.

Again, the hypothesis was tested using the Regression procedure (Tables 1-4). As for H_2 , the hypothesis will be tested against the results of each test separately.

The Tables show the coefficient potentially relating to errors due to dialect interference with standard deviation. Again a t-test was carried out and the respective p-values calculated.

Table 2.1

Fill-in-the-blank Test

Year	Coef.	Stdev.	T-test	P
Year 1	1.712	0.561	3.05	0.022
Year 2	2.289	0.586	3.90	0.008
Year 3	1.890	0.863	2.19	0.071
Year 4	2.025	0.608	3.33	0.016

Table 2.2

Pictures Test

Year	Coef.	Stdev.	T-test	P
Year 1	1.142	0.304	3.75	0.009
Year 2	1.898	0.556	3.41	0.014
Year 3	1.646	0.433	3.80	0.009
Year 4	1.484	0.347	4.28	0.005

Table 2.3

Arabic Translation Test

Year	Coef.	Stdev.	T-test	P
Year 1	0.885	0.477	1.86	0.123
Year 2	2.061	2.985	0.69	0.521
Year 3	2.934	2.978	0.99	0.370
Year 4	1.935	0.378	5.14	0.004

Table 2.4

English Translation Test

Year	Coef.	Stdev.	T-test	P
Year 1	1.414	0.143	9.89	0.000
Year 2	2.190	0.445	4.92	0.003
Year 3	1.627	0.312	5.22	0.002
Year 4	1.519	0.238	6.40	0.001

From these tables we observe:

- 1- In FBT, only Year 2 and Year 4 show significant evidence of possible dialect interference.
- 2- The PT shows significant results across all four years.
- 3- The ATT, except for year four, shows little evidence of potential dialect interference ($p > 0.05$). The Year 4 result is anomalous in that such interference would be expected to decrease rather than vice versa.
- 4- The ETT shows the most significant results in respect of H_2 , giving strong evidence against the H_0 .

5.4.3 Hypothesis 3

H_0 Arab learners will not tend to have difficulty determining which English spatial preposition is appropriate in contexts where there is a shared primary counterpart in Arabic.

H_3 Arab learners will tend to have difficulty determining which English spatial preposition is appropriate in contexts where there is a shared primary counterpart in Arabic.

The chi-square was used to test this hypothesis. First the prepositions were grouped according to the responses given in each test item. If the prepositions are not distinguishable for the subjects of the tests then we expect an approximately equal number of responses for each member of the group.

The chi-square test was used to compare the expected number of responses with the observed data. The results show significant evidence in support of H_3 where there is no clear preference for the accepted correct response, this would be reflected in a value of $p < 0.05$.

The result of this chi-square test will be discussed in detail in 6.4.3.

Analysis of each test is given below:

Table 3.1

Fill-in-the-blank Test

Group	Correct Answer	chi-square Value	D.F.	P Value
<i>At, Behind, In & On</i>	<i>At</i>	6.743	9	0.700
<i>At, In & On</i>	<i>On</i>	18.731	9	0.025
<i>Among, In & Between</i>	<i>Between</i>	12.302	9	0.200
<i>Above, Below & Under</i>	<i>Above</i>	6.653	6	0.400
<i>At & In</i>	<i>In</i>	3.347	6	0.700
<i>Behind, In, In front of</i>	<i>In front of</i>	7.356	6	0.300
<i>Below, On & Under</i>	<i>Under</i>	3.352	6	0.700
<i>Below & Under</i>	<i>Below</i>	2.115	3	0.550
<i>Behind, At, Above & In front of</i>	<i>Behind</i>	13.195	3	0.01

Table 3.2

Pictures Test

Group	Correct Answer	chi-square Value	D.F.	P Value
<i>At, In & On</i>	<i>At</i>	5.124	3	0.150
<i>Among(st) & Between</i>	<i>Among(st)</i>	18.941	3	0.0001
<i>Below & Under</i>	<i>Below</i>	11.955	3	0.01
<i>In front of, On & Others</i>	<i>In front of</i>	9.244	3	0.025
<i>In, On & Others</i>	<i>In</i>	1.985	3	0.600
<i>In & On</i>	<i>On</i>	1.132	3	0.700

Table 3.3

Arabic Translation Test

Group	Correct Answer	chi-square Value	D.F.	P Value
<i>At & In</i>	<i>At</i>	22.758	3	0.0001
<i>On & Above</i>	<i>Above</i>	9.429	3	0.025
<i>At, In & On</i>	<i>On</i>	1.534	3	0.700
<i>At & In</i>	<i>In</i>	2.520	3	0.450
<i>Below & Under</i>	<i>Below</i>	3.700	3	0.300
<i>Among(st), In & Between</i>	<i>Among(st)</i>	1.436	3	0.700

Table 3.4

English Translation Test

Group	Correct Answer	chi-square Value	D.F.	P Value
<i>At & In</i>	<i>At</i>	0.458	3	0.925
<i>In & On</i>	<i>On</i>	4.146	3	0.400
<i>On & In</i>	<i>In</i>	7.576	3	0.050
<i>Below, Behind & Under</i>	<i>Below</i>	4.99	3	0.300
<i>Among(st), Behind, In & Between</i>	<i>Among(st)</i>	30.407	6	0.0001

5.4.4 Hypothesis 4

H_0 Arab learners will **not** tend to omit spatial prepositions in English where there is no preposition in the equivalent Arabic context.

H_4 Arab learners will tend to omit spatial prepositions in English where there is no preposition in the equivalent Arabic context.

The hypothesis was tested against the ATT results since it is the test that reveals an omission of a preposition in the English which to be significantly justified in this case.

Table 4.1

Arabic Translation Test

Year	Coef.	Stdev.	T-test	P
Year 1	1.859	4.768	0.39	0.713
Year 2	0.903	1.028	0.88	0.420
Year 3	- 5.067	9.391	-0.54	0.613
Year 4	0.269	1.268	0.21	0.840

5.4.5 Hypothesis 5

H_0 Arab learners will not tend to use English spatial prepositions incorrectly in contexts where their use is different from the use of their counterparts in Arabic.

H_5 Arab learners will tend to use English spatial prepositions incorrectly in contexts where their use is different from the use of their counterparts in Arabic.

Since the performances in each test were different, this hypothesis was tested separately against the results of each test individually. Errors thought to be examples of interference as specified in H_5 were analysed using a regression analysis.

Where the coefficient is significantly different from zero, there is evidence to support the view that Standard Arabic usage does interfere with the acquisition process. Conversely, where the coefficient is not

significantly different from zero there is no evidence against the null hypothesis. Significance is indicated in values of $p < 0.05$.

Table 5.1

Fill-in-the-blank Test

Year	Coef.	Stdev.	T-test	P
Year 1	2.065	0.626	3.30	0.016
Year 2	1.412	0.394	3.58	0.012
Year 3	1.174	0.527	2.23	0.068
Year 4	1.273	0.365	3.49	0.013

Table 5.2

Pictures Test

Year	Coef.	Stdev.	T-test	P
Year 1	2.084	0.435	4.79	0.003
Year 2	2.398	0.644	3.72	0.010
Year 3	2.106	1.524	1.38	0.216
Year 4	2.231	0.794	2.81	0.031

Table 5.3

Arabic Translation Test

Year	Coef.	Stdev.	T-test	P
Year 1	1.209	0.186	6.48	0.001
Year 2	1.520	0.351	4.33	0.005
Year 3	0.884	0.632	1.40	0.211
Year 4	1.494	0.377	3.97	0.007

Table 5.4

English Translation Test

Year	Coef.	Stdev.	T-test	P
Year 1	1.440	2.119	0.68	0.527
Year 2	0.233	2.315	0.10	0.924
Year 3	-0.380	2.063	-0.18	0.861
Year 4	0.471	0.429	0.34	0.746

From these tables we observe:

- 1- There is sufficient evidence, except for Year 3, in FBT, PT and ATT against the null hypothesis. There is a strong evidence in the results above that suggests the influence of the different interpretations of Arabic prepositions is significant.
- 2- The ATT with exception of Year 3, shows the most significant evidence against the null hypothesis.
- 3- The ETT shows little evidence of L1 influence.

CHAPTER SIX

DISCUSSIONS AND INTERPRETATIONS OF RESULTS

6.1 Introduction

This chapter falls into two parts. The first (6.2) comprises a discussion and evaluation of the results of the tests presented in Chapter Five. Each of the ten spatial prepositions will be discussed with reference to the results of each test and for each year. A comparison will also be made between the results of each test, and explanations offered for the unexpected results and inconsistencies. The concept of an "order of acquisition" will be discussed, defined and applied to the test results in order to compare the findings of other researchers.

The second part begins with a discussion and definition of terms (6.3) and concludes with a section (6.4) which comprises a description and explanation of sources of errors in the use of English spatial prepositions

by Arab (Saudi Arabian) learners based on the results of the five tests of this study, and specifically with reference to the hypotheses set out in 1.4. These hypotheses propose that L1 interference will be found to be a significant cause of error in the use of English spatial prepositions by Arab learners.

6.2 Learners' General Performance

At

The preposition *at* ranks third out of the 10 target prepositions in the mean scores for the FBT, ninth in the PT, the ATT and the ETT; it appears third in the CT order of frequency of accepted correct usages (Table 5.2.1).

The Table below (6.2.1) presents the mean scores for *at* in each test and for each year as a percentage of responses correct.

Table 6.2.1: Correct responses for *at* in % across all years for all tests:

YEAR	FBT	PT	ATT	ETT	MEAN
1	40.00	17.65	14.03	31.67	25.84
2	53.33	41.40	43.33	39.50	44.39
3	55.00	32.60	40.00	30.67	39.58
4	53.33	32.35	48.00	32.33	41.50
MEAN	50.42	31.00	36.34	33.54	37.83

In the FBT, scores improved from Year 1 to Year 2, and Year 2 to Year 3, but fell slightly in Year 4. This is consistent with the results in general for Year 4 for all prepositions and all the tests, where there is frequently no increase in accuracy over Year 3, and in some cases a decrease (c.f. results for *behind* and *in front of* for the FBT (Figs. 5.2.1 and 5.2.2 and Tables 6.2.6 and 6.2.7)). A discussion of the general lack of progress in the accurate use of the spatial prepositions follows in section 6.2.1.

In the PT, *at* scores lowest of all prepositions for Year 1, scores much higher for Year 2, and falls back slightly for Years 3 and 4, whose results are almost identical. The increase in score for Year 2 possibly results from recent instruction although, of the other prepositions, eight show a decreased score from Year 1 to Year 2. This latter deterioration is fairly consistent with other tests' scores for Year 2 and is possibly because Year 1 subjects receive an intensive course in English for entry into the English language department. A similar result for *at* is recorded for ATT (see Figs. 5.2.5 and 5.2.6).

In the ATT, *at* scores low for Year 1, increases sharply for Year 2, falls slightly for Year 3 and picks up a little for Year 4. Again *at* is the only preposition to give this distribution of results which are very similar to those of the PT for *at*.

In the ETT, *at* is again low-scoring with a similar, but less marked, distribution of scores for Years 1-4 as in the ATT and the PT.

In the CT, *at* was used by all four Years (as were *in* and *between*). *In* was the most frequently used (178) with good accuracy (82%) followed by *on* and *at*. Apart from *between*, the prepositions were hardly used.

At was used thirty four times across all four years in this test, but only twelve times correctly, *in* and *on* being most frequently substituted. It was used eleven times in Year 1 (3 accepted correct), three times in Year 2 (0 correct) , twelve times in Year 3 (4 correct) and eight times in Year 4 (5 correct).

In

The preposition *in* ranked overall fourth in the mean scores for the FBT, third in the PT, fifth in the ATT, second in the ETT; it appears first in the CT order of frequency of accepted correct usages (Table 5.2.1). The Table below (6.2.2) presents the mean scores for *in* in each test and for each year as a percentage of responses correct.

Table 6.2.2: Correct responses for *in* in % across all years for all tests:

YEAR	FBT	PT	ATT	ETT	MEAN
1	34.43	67.65	71.97	83.33	64.35
2	51.73	60.35	62.97	96.30	68.84
3	47.07	78.25	70.67	89.33	71.13
4	60.00	82.50	73.33	92.67	77.13
MEAN	48.31	72.19	69.74	90.41	70.16

In the FBT, scores improve from Year 1 to Year 2, decrease slightly for Year 3, and improve very slightly for Year 4. This "plateau" effect from Year 2 to Year 4, where mean scores vary only a little, is common to all prepositions in the FBT, with the exception of *among*, and across all tests with few exceptions (e.g. *among* in the PT and *at* in the ATT) (see tables in Ch. Five). The lack of progress in Year 4 especially will be discussed below (see Summary).

In the PT, there is a small decrease from Year 1 to Year 2, an increase in Year 3, and a small decrease in Year 4. The decrease in scores from Year 1 to Year 2 is common to eight of the ten prepositions in the PT, although this marked feature of the PT does not occur to the same extent in the other tests.

This decrease in score from one year to the next is an unexpected result and is difficult to account for. Either the cause is in the subjects' L2 input or in the test itself, or there is a third, extraneous cause.

If the cause was English language input, for example the intensive English course prior to Year 1 mentioned above, then the decrease in accuracy for Year 2 would be evident in the other tests, which it is not. If the problem was in the difficulty of the PT, then there is no reason for Year 1 to have scored better than Year 2. Any third possible non-linguistic cause is beyond the scope of this study and can only be a matter of speculation.

In the ATT, the mean score for *in* again falls from Year 1 to Year 2, increases for Year 3 and remains constant for Year 4. The ranking of *in* in fifth place by mean score in the ATT may seem to indicate an unexpected level of difficulty for this preposition. However the top five in the ranking order, and especially the third, fourth and fifth, are quite close together, so that there is little significance in this apparently low ranking. The possible reasons for the relative ease or difficulty of the different prepositions will be discussed at length in Section 6.4.

In the ETT the mean score rose from Year 1 to Year 2, fell for Year 3 and rose slightly for Year 4 - a common distribution pattern for the prepositions in this test, but not one showing any significant progress or deterioration. The significance is in the lack of progress as mentioned above (see Summary for discussion of this point).

In the CT, *in* is used far more frequently than any other preposition (178 occurrences across the four years, while the second most frequent, *at*, has 34 occurrences; *on*: 20; *between*: 12; *under*: 5; *among* 3. In Year 1 there are 26 accepted correct uses out of 33; in Year 2, 37 out of 47; in Year 3, 47 out of 57 and in Year 4, 36 out of 41.

The reasons for the high frequency of *in* are possibly that it has a naturally high frequency, as does its Arabic counterpart, 'fi', or that the subjects feel more confident in its use in comparison with the other prepositions, or that it is overused as a substitution for the other prepositions of general location: *at* and *on*. However, as regards this last

point, the reverse may also be true, that *at* and *on* are used incorrectly in place of *in*.

In the CT, *in* was the most commonly occurring preposition and was used quite accurately on the whole: 32 incorrect uses in 178 occurrences, an accuracy of 82%, similar to that in the other tests.

Looking at the five tests together, it is clear that *in* presents relatively little difficulty. It is among the top five in terms of mean scores in the tests.

On

The preposition *on* ranked overall eighth in the mean scores for the FBT, first for the PT, sixth in the ATT and sixth in the ETT (see Table 5.2.1). It appears second in the CT order of frequency of accepted correct usage.

Table 6.2.3: Correct responses for *on* in % across all years for all tests:

YEAR	FBT	PT	ATT	ETT	MEAN
1	40.00	76.50	49.13	73.33	59.74
2	32.00	67.25	56.80	60.50	54.14
3	33.33	65.20	54.67	65.33	54.63
4	45.00	80.00	60.80	83.33	67.28
MEAN	37.58	72.24	55.35	70.62	58.95

In the FBT, the mean score for *on* falls from Year 1 to Year 2, rises very slightly to Year 3 and improves for Year 4 to finish slightly higher than

for Year 1. Only three of the ten prepositions show a decrease in score for Year 2 (*behind, on, among*), and although it may appear unexpected that Year 2 should score lower than Year 1, the fall is only from an average of 1.2 to .95, representing a fall from 26/60 accepted correct responses to 17/60 (40% to 32%). Thus it is quite possible that the decrease in mean score falls within the domain of normal variation and requires no specific explanation. The ranking of eighth for *on* in the FBT order of mean scores should be put into context: there is a group of five prepositions in the lower half of the tables (5.2.1 and 5.2.2), i.e. *under, on, among, between* and *below*, whose mean scores are very close overall. This indicates that *on* could be considered to be a member of the lower group of five, rather than being specifically eighth. Thus *on* might occur anywhere between sixth and tenth in order of mean score depending on the normal variation of circumstances. *On* appears sixth in the overall ranking (see Table 6.2.11).

In the PT, *on* scores high in Year 1, falls for Year 2 and again falls slightly for Year 3, and rises for Year 4, to finish at a little higher than Year 1. The relatively high scores for *on* put it in first place in the ranking for the PT, and while such high scores are not unusual for other prepositions in other tests (FBT: *in front of*; ETT: *in* and *under*; ATT: *under* and *between*) they are higher than the scores for *on* in the other tests. However, the following points should be considered:

1. In the PT, *on* scores higher than *between, in* and *behind* in Years 1 and 4 only; in Year 3 *in* scores lower than the others in this group. Thus, following the argument for the PT scores above, we might

consider *on* to be ranked between first and fourth. Consequently the apparent disparity in ranking between the FBT (eighth) and the PT (first) is reduced to one where *on* might have been sixth in the FBT and fourth in the PT without unduly stretching the interpretation of results. Such a ranking would have placed *on* in the middle group of prepositions, i.e. neither particularly easy nor particularly difficult, in both tests. This is indeed the overall finding for *on* (see Table 6.2.11).

2. In addition the placing of *on* in sixth place for the ETT but first place in the PT does not reflect the fact that in both tests the overall percentage accuracy was very similar (PT: 72.24%, ETT: 70.62%).
3. Notwithstanding the above considerations, *on* nevertheless achieves a mean accepted accuracy of 72.24% in the PT over all years together. This compares with 37.58% (FBT), 70.62% (ETT), 55.35% (ATT). This analysis seems to suggest that there is an explanation required for the PT results for *on*, which are significantly higher than those for the FBT.
4. There are perhaps two reasons for the above inconsistency.
 - (a) The picture test may be easier for the subjects in respect of *on* than the other tests.
 - (b) The FBT, in particular, may be more difficult.

There is probably some truth in both of these explanations. For six prepositions, the PT gives a higher or much higher score than the FBT (*in, on, among, between, behind, under*). However, those instances where the FBT gives a higher score than the PT result in an almost identical overall mean performance figure for both tests.

It appears therefore that for some prepositions the visual stimulus provided in the PT is of particular assistance to the subjects, while for other prepositions this is not the case, or perhaps the picture is confusing. The relative conceptual complexity of the prepositions which may be the cause of this is beyond the scope of this study.

In the ATT the score for *on* rises to Year 2, drops slightly for Year 3 and rises again for Year 4. This distribution of results shows little progress or deterioration from Year 1 to Year 4, as has been noted for other prepositions and in other tests (see discussion of *at* for FBT).

The ranking of *on* in the ATT in sixth place reflects, in this case, a relatively low success rate for *on* (52.75%), rather than a high success rate for those ranked higher in this test. The 52.75% success rate indicates that *on* is neither easy nor difficult but somewhere in between. This assessment of *on* is confirmed by the mean % scores in the other tests, the ETT and PT showing good results, and the FBT rather poor ones.

In the ETT, the score for *on* falls from Year 1 to Year 2, rises slightly to Year 3 and rises again to finish in Year 4 slightly above Year 1. The variation from year to year is not very great, a range of only twelve

responses out of sixty (from Year 2 to Year 4). The average percentage for accepted accurate responses of 70.62% overall is not reflected in the rank order of sixth for *on* in this test. Rather, this ranking reflects the relatively high success rate of the higher scoring prepositions. In conjunction with the results for the ATT (sixth ranking order; 55.35% accuracy), this illustrates the difficulty of using mean average scores to establish an order of difficulty for the prepositions in each test which can be compared with similar ranking orders for other tests (see discussion of *on*: PT).

In the CT, *on* was used twenty times (ten correctly) across all four years, not including Year 3. It was the third most commonly used after *in* and *at*. These results indicate that there is difficulty with *on* for Arab learners, especially in comparison with *in*. The number of usages of *on* (7, 9 and 4 in Years 1, 2 and 4 respectively) does not permit significant comparisons to be made between years. The low frequency of most of the prepositions in the CT does not allow significant generalisations to be made in most cases (see also discussion of CT in Summary 6.2.1).

In conclusion, *on* is one of that group of prepositions which sometimes pose a difficulty. It appears sixth in the overall ranking order for the ten prepositions (see Table 6.2.11). A fuller discussion will follow in Section 6.3.

Among

The preposition *among* ranked overall tenth (last) in the FBT, sixth in the PT, eighth in the ATT and tenth in the ETT (see table 5.2.1). It appears sixth (last) in the CT order of frequency of correct usage.

The Table below (6.2.4) presents the mean scores for *among* in each of the tests and for each year as a percentage of responses correct.

Table 6.2.4: Correct responses for *among* in % across all years for all tests:

YEAR	FBT	PT	ATT	ETT	MEAN
1	35.57	50.00	28.07	29.67	35.83
2	23.00	15.50	33.33	23.47	23.83
3	36.10	36.95	34.67	29.33	34.26
4	43.00	64.70	49.03	31.67	47.10
MEAN	34.42	41.79	36.28	28.54	35.26

In the FBT, the mean score begins low and falls in Year 2 to one of the lowest in this study for any preposition in any test. The mean score rises in Year 3 and again in Year 4. The FBT scores were second lowest for *among* in comparison with other tests.

The PT shows some unexpected results. The Year 4 scores are the highest for all years in all tests (65%) for *among* and the Year 1 scores are second highest (50%). In contrast the Year 2 score is the lowest of all (16%). This

indicates two features of the test results which occur in other tests: firstly that the PT tends to produce relatively high scores for some prepositions, possibly due to the specific feature of the test itself, i.e. the picture prompt which may enable greater accuracy of use by virtue of representing visually the spatial relationship denoted by the preposition. The PT was the highest scoring test for *among* overall (see Table 6.2.4). Secondly, the Year 2 scores tend to be lower than Year 1, possibly due to the formal input received by Year 1 immediately prior to entering the English Department at University. Both of these features of the test results in general have been noted above and will be discussed in Section 6.2.1.3.

The ATT results show a gradual improvement from Years 1-4, but are nevertheless low scoring compared to those for other prepositions.

In the ETT, we again see the decline from Year 1 to Year 2 and the improvement to Years 3 and 4. This test was the lowest scoring overall (29%) although there is probably little significance in the small variation of mean score for each test.

In conclusion the results for *among* demonstrate the common themes of the decline in scores for Year 2, the occasional relatively high scores for the PT, and the "fossilisation" phenomenon apparent in the general lack of significant increase in scores for Year 4.

Finally, *among* is the lowest scoring of the ten prepositions. This is especially significant in comparison with *between* which is among the

highest scoring. A full discussion of the possible reasons for these results follows in the section below (6.3).

Between

The preposition *between* ranked overall fifth in the FBT, second in the PT, first in the ATT and third in the ETT; it was fifth in the CT order of correct usages.

The Table below (6.2.5) presents the mean scores for *between*, in each of the tests and for each year, as a percentage of responses correct.

Table 6.2.5: Correct responses for *between* in % across all years for all tests:

YEAR	FBT	PT	ATT	ETT	MEAN
1	40.00	64.70	86.67	86.13	69.38
2	41.00	72.50	91.37	87.67	73.14
3	43.00	78.25	93.33	85.33	74.98
4	44.30	76.45	98.03	88.90	76.92
MEAN	42.08	72.98	92.35	87.00	73.60

In the FBT the mean score for *between* begins low and shows very little improvement across the four years. As can be seen from Table 6.2.5, the mean score for the FBT Years 1-4 is very low in comparison with the overall mean score for the other tests, especially the ATT. One explanation for this is that in addition to the prepositions of general

location (*at, in, on*) which account for many of the incorrect responses and can be interpreted as guesses, the preposition *among* also appears, surprisingly frequently, among the incorrect responses (18 times out of 93 errors). This is unexpected, as will be explained in detail in the next section, because *between* is the primary counterpart of the Arabic locative adverb 'bayna' which usually means *between*, although it can be used to denote the relationship of location *among*. This being so, *between* ought not to present difficulties. Furthermore, it would be expected that the subjects in this study would overuse *between* at the expense of *among*, since the Arabic counterpart of *among*, 'wasta' is used less frequently in Arabic than 'bayna' (*between*) and is also used to denote, among other things, "central position" (see Ch. Three, Section 3.5); this expectation is generally confirmed in this study as a whole. Conversely, however, as noted above, *among* appears in this test at the expense of, and in preference to, *between*. A plausible explanation of this is that the subjects are aware of the potential difficulty of *among* and are over compensating in using it too often.

The PT is also less well scoring than the ATT and ETT, both of which have a very high mean score overall. This may be due to confusion over the location of a car which is shown in the picture prompt as being between a tree and a house. In the picture it is also under both the house and the tree and is, of course, *next to* or *beside* both. Thus although *between* is clearly the expected response neither *under* nor *next to/beside* are logically incorrect, and both responses are recorded in the subjects' results. The design of the PT did not include a list of items to use in the

blanks provided, so perhaps the two prepositions of adjacent position which are not included in this study would not have occurred if this had not been the case. Such a list was provided in the FBT, ATT and ETT, thus the scope for error was wider in the PT and may account for a slightly lower score in some cases.

The ATT and ETT both show very good results. In both cases, the design of the test gives a word to be straightforwardly translated into its counterpart, and *between* and 'bayna' are relatively strong primary counterparts (see Section 6.3 for a fuller discussion).

In conclusion, *between* is relatively uncomplicated for Arab learners for the reason mentioned above but there is an indication in the FBT and PT that the concept of location specifically with two entities on either side is not completely unproblematic: subjects may be unsure of whether to use *between* or *among*, or may tend to avoid either.

Behind

The preposition *behind* ranked overall second in the FBT, fourth in the PT, fourth in the ATT and fifth in the ETT. It was not used in the CT.

The Table below (6.2.6) presents the mean scores for *behind* in each test and for each year as a percentage of responses correct.

Table 6.2.6: Correct responses for *behind* in % across all years for all tests:

YEAR	FBT	PT	ATT	ETT	MEAN
1	66.67	67.50	80.70	73.33	72.05
2	63.33	50.00	76.53	64.20	63.52
3	69.73	67.40	84.00	76.00	74.28
4	65.00	88.25	82.37	79.67	78.82
MEAN	66.18	68.29	80.90	73.30	72.17

The FBT gives the lowest mean score for *behind*, but there is little significant difference between the tests or between years, Year 2 falling very slightly and Year 4 showing little improvement over Year 1.

The only anomalous results are in the PT which provides both the lowest score (Year 2 : 50%) and the highest (Year 4 : 88.25%), although neither of these are particularly different from the overall mean score of 72.17%.

In the individual responses for Year 2 in the PT we find *back* and *with* frequently used incorrectly for *behind*. This may be due to interference from the AmE "in back of" or, more likely, simply use of an incorrect phrasal category in the target language, a grammatical rather than lexical error. If the latter is the case, then the improvement to Year 4 indicates the subjects' progress in syntax, as the individual responses show.

In conclusion, *behind* is relatively unproblematic for Arab learners. The test results show the "fossilisation" already observed in other prepositions, the Year 4 results being little better than Year 1; the Year 2 scores are also not unusual in falling below those of Year 1.

In front of

The preposition *in front of* ranked overall first in FBT by mean average score, seventh in the PT, fourth in the ATT and fourth in the ETT.

The Table below (6.2.7) presents the mean scores for *in front of* in each test and for each year as a percentage of responses correct.

Table 6.2.7: Correct responses for *in front of* in % across all years for all tests:

YEAR	FBT	PT	ATT	ETT	MEAN
1	66.67	44.10	73.67	76.67	65.28
2	78.33	25.85	72.83	75.30	63.08
3	77.77	23.90	74.67	82.67	64.75
4	70.83	58.85	86.277	81.67	74.41
MEAN	73.40	38.18	76.86	79.08	66.88

The FBT gives a good score for *in front of*, similar to the ATT and ETT, showing a rise to Year 2 then a slight decline to Years 3 and 4.

The PT scores are unexpectedly low in comparison to the other tests, in particular Year 3. This is partly due to incomplete acquisition of the the compound *in front of*; subjects used *front* or *front of* or *in front*. *Before* is also used more than might be expected, perhaps due to the subjects' perception that the object in front is in some sense appearing first, and thus before the object behind. *On* was also frequently used, 35 times in 106 errors, for the picture showing a vase in front of a "TV set" (see Appendix 2). It seems clear that the subjects interpreted "TV set" as including a reference to the table on which the TV is sitting, a lexical error outside the scope of this study which nevertheless significantly affects the results.

In the ATT, the score is almost identical for Years 1-3 and rises to the highest score for this preposition in Year 4 (86.27%).

The ETT scores are slightly higher on average, showing little variation from Year 1 to Year 4. In conclusion, *in front of* was not particularly difficult for the subjects. It is the only compound preposition in this study and this accounted for some difficulty. The PT score is anomalous but has been partly explained above. In general, *in front of* belongs to the top group of prepositions (see Table 6.2.11) and would have scored higher had it not been for the apparent confusion in the PT.

Above

The preposition *above* ranked overall seventh in the FBT by mean average score across Years 1-4, eighth in the PT, seventh in the ATT and seventh in the ETT. It was used in the CT once, correctly, in Year 2.

The Table below (6.2.8) presents the mean scores for *above* in each test and for each year as a percentage of responses correct.

Table 6.2.8: Correct responses for *above* in % across all years for all tests:

YEAR	FBT	PT	ATT	ETT	MEAN
1	57.90	29.40	45.97	67.03	50.15
2	68.97	20.70	48.53	66.67	51.22
3	65.33	26.10	32.00	62.67	46.53
4	76.33	58.85	50.00	70.33	63.88
MEAN	67.13	33.76	44.13	66.68	52.93

In the FBT, scores begin relatively high, and rise to a top score of 76.33%, although there is a very slight fall from Year 2 to Year 3. The FBT is the highest scoring test for this preposition. A detailed analysis of the subjects' responses for the FBT and PT reveals the following.

In the FBT the commonest error was the incorrect substitution of *under* or *below*, accounting for over half of the errors. At first sight this is particularly unexpected. However, the design of the test items

(Appendix 1, Nos. 2, 10, 28) is almost certainly responsible. In the responses to No. 2, there is what appears to be a simple psychological processing error, assigning the third floor to a lower location than the first floor. In the responses to No. 28, it appears that the subjects have interpreted the final prepositional phrase as a contracted clause relative to the preceding noun phrase "the clouds". This interpretation would be quite logically and syntactically acceptable were it not for the intervening comma. In No 10, however, the incorrect *under* or *below* do not appear in the subjects' responses. Rather the anticipated L1 interference appears to be the operative factor (see Section 6.3 below). Consequently, therefore, the FBT scores would probably have been even higher, notwithstanding the probability that other errors would have occurred, if the above-mentioned design difficulties had been avoided.

In contrast, the scores in the PT are among the lowest for any of the prepositions, falling from 29.4% in Year 1 to a very low Year 2 (20.7%) before rising to 26.1% and finally to a relatively high 58.85% for Year 4.

In the ATT, the mean score rises slightly to Year 2, falls sharply for Year 3 and rises steeply to Year 4. The ATT does not score as highly as the ETT, which is consistent with the overall performance figures for these two tests (see Section 6.2.1.4 for a discussion of this) possibly for reasons mentioned above (see discussion of *above*).

To conclude, *above* is not easy for the Arab learners in this study but neither is it in the low scoring group (see Fig. 6.2.11).

Below

The preposition *below* appears overall ninth in the FBT ranking of mean average scores across Years 1-4 (see Table 5.2.1), tenth in the PT, tenth in the ATT and eighth in the ETT. It appears in the CT once, in Year 2.

The Table below (6.2.9) presents the mean scores for *below* in each test and for each year as a percentage of responses correct.

Table 6.2.9: Correct responses for *below* in % across all years for all tests:

YEAR	FBT	PT	ATT	ETT	MEAN
1	31.10	17.65	17.53	65.00	32.82
2	33.33	5.15	18.53	66.67	30.92
3	41.73	4.35	13.33	61.33	30.19
4	43.13	35.30	31.37	68.33	44.53
MEAN	37.32	15.61	20.19	65.33	34.61

In the FBT the score shows a gradual increase from Year 1 to Year 4; in general, the score for this preposition is very low. In the PT, the mean scores are exceptionally low especially in Years 2 and 3. A study of individual responses reveals a very high incidence of *under* in place of *below* in this test and in general. Scores in the ATT are little better; Year 1 rises slightly to Year 2, falls for Year 3 and rises sharply for Year 4. The ETT scores comparatively high, with a small decline in Year 3. In general, the ETT is a high scoring test for reasons mentioned above,

which are borne out in this case especially where in English *below* is quite distinct in its usage, whereas the Arabic 'tahta' meaning primarily *under* can readily be used for *below*, giving greater scope for error in Arabic to English translation.

The minimal usage of *below* in the CT is possibly an indication of lack of confidence, and thus avoidance, by the subjects of the study (*under* appeared 5 times in all in Years 1, 2 and 3). A full discussion of the CT appears below in the conclusion.

In conclusion, *below* is the least well used of all the prepositions especially where a picture stimulus is given.

Under

In the FBT, *under* appears sixth in the ranking of means scores (see Table 5.2.1), fifth in the PT, second in the ATT and first in the ETT. It appears 5 times in the CT, 4 times correctly.

The Table below (6.2.10) presents the mean scores for *under* in each test and for each year as a percentage of responses correct.

Table 6.2.10: Correct responses for *under* in % across all years for all tests:

YEAR	FBT	PT	ATT	ETT	MEAN
1	41.00	58.85	86.67	90.00	69.13
2	42.53	51.50	90.00	97.53	70.39
3	40.27	71.75	88.00	96.00	74.01
4	47.07	65.00	93.33	100.00	76.35
MEAN	42.72	61.78	89.50	95.88	72.47

The FBT scores for *under* are the lowest of all tests, less than half of the ETT scores, with Year 3 falling slightly below Year 1. A possible reason for these low scores is in the design of the test, especially No. 22.

I found my brother's pen my bed with some other missing books.

The preposition *on* was frequently given here by the subjects and is plausible if the sentence is interpreted as suggesting that a third party had placed the objects on the bed. The preposition *in* was also given but seems less acceptable. The higher than expected "error" rate for this and other test items had the effect of causing the mean score to be lower than might have been anticipated.

In the PT, the scores were a little higher, showing a decrease in Year 2 and in Year 4 but still well below the ETT.

The ATT scores are higher again, with a very small decline in Year 3, and are the second highest scores for any preposition in the ATT.

The ETT scores are exceptionally high, better than for any other preposition in this test, with Year 4 scoring a maximum possible 100%.

In conclusion, as the high scores of the ETT indicate, *under* is a relatively unproblematic preposition for the Arab learners in this study, and ranks overall in the high scoring group of prepositions (see Fig. 6.2.11).

6.2.1 Summary

In the preceding discussion and interpretation of results, each preposition has been analysed according to the scores achieved by each year group for each test. The Table below presents a summary of the mean average score for each preposition (across all years and for all tests) as the percentage of responses which are accepted as correct by the criteria of this study, as set out in Chapter Four (Section 4).

Table 6.2.11 Prepositions in their Three Ranking Order Groups Showing Overall Mean Average Score as a %

	First Group	
	<i>Between</i>	73.60
	<i>Under</i>	72.47
	<i>Behind</i>	72.17
	<i>In</i>	70.16
	<i>In front of</i>	66.88
	Second Group	
	<i>On</i>	58.95
	<i>Above</i>	52.93
	Third Group	
	<i>At</i>	37.83
	<i>Among</i>	35.26
	<i>Below</i>	34.61

It can be seen from the table that the ten spatial prepositions fall into three groups. The first group is relatively unproblematic for the subjects, the second group presents occasional difficulties, and the third group

appears to be the source of considerable confusion. The reasons for this performance will be discussed in the next section (6.3).

In the course of the discussion and interpretation of results above (6.2), a number of common themes emerged: the general lack of progress in accuracy in the use of the prepositions; the fall in score from one year to the next, which is observable to some degree across all tests and all prepositions and occurs in over a third of cases, particularly from Year 1 to Year 2; the occasional high scores of the PT over the FBT offset by a reverse trend in some cases; and the relatively high scores for the two translation tests over the two blank filling tests. These themes will be discussed below and, in addition, the CT results will be discussed and interpreted.

6.2.1.1 Lack of progress

The phenomenon of fossilisation has been discussed in Chapter Two (2.9.2) and refers to the retention of elements of interlanguage, or idiosyncratic dialect, regardless of continuing instruction. In the results of this study, it is noticeable that scores do not improve significantly, on the whole, from Year 1 to Year 4. At most, there is a 15.66% increase in the mean average score for Year 4 over Year 1 (for *at* - see Table 6.2.1); the least increase is for *behind*, whose Year 4 mean average score is only an improvement of 6.77% over Year 1 (Table 6.2.6). As has been noted above, there are many instances of scores falling from one year to the

next. The general impression is of a lack of significant improvement, which may indicate a tendency towards "fossilisation".

This feature of performance, especially that of Year 4, has several possible causes. Firstly, the errors themselves may be caused by L1 interference, or perhaps by the intrinsic complexity of certain English spatial prepositions - this point will be discussed in more detail in Section 6.3. Secondly, the errors are perhaps not corrected, either because they are not perceived by the subjects, perhaps as a result of lack of emphasis during formal instruction, or because the low frequency of spatial prepositions in general usage does not provide enough opportunity for self-correction, or because such errors are perceived to be unimportant, regardless of continued instruction and/or correction, in as much as they do not impair communication, nor do they constitute a significant proportion of L2 output.

6.2.1.2 Year 2 scores

The fall in score from one year to the next is particularly evident in the Year 1 to Year 2 scores, where the majority of such declines occur (see Tables 6.2.1 - 6.2.10). One possible reason for this is that the Year 1 subjects complete an intensive course of English immediately prior to commencing their four years of study at university. This would support an interpretation of the results which construed the Year 1 results as being unexpectedly high, rather than Year 2 results being low. We would

then expect to find a gradual progression from Year 2 to Year 4, which is generally the case, although in many instances such progress is negligible (see 6.2.1.1).

6.2.1.3 PT and FBT scores

Although the overall mean average scores (all years and prepositions) in the FBT and PT are almost identical, closer analysis of the two tests reveals significant differences. The PT score is higher than the FBT for *in*, *on*, *among*, *between*, *behind* and *under*. The FBT is higher for *at*, *above*, *below* and *in front of*.

It is probably significant that the preposition *at* denotes a concept which is relatively problematic to represent visually; for this reason the picture prompt may have been of little assistance to the subjects, resulting in a low score in the PT. Further, the prepositions *above* and *below* are also complex, in that while they may be easy to draw, they are nevertheless also easily confused visually and conceptually with *over* and *under*. A detailed look at the PT results shows that these were indeed incorrectly substituted.

Finally the preposition *in front of* is unexpectedly low scoring in the PT, since it is not generally problematic for Arab learners. There has been some discussion of this already, and it seems clear that the picture prompts, or the accompanying cloze sentences, are confusing (see discussion of *in front of*).

In addition, the other picture prompt showed a child standing in front of its mother, both facing a point 90° to the right of the observer (see Appendix 2). Many of the errors in this item consisted of the incorrect substitution of *with*. There are two points to make here. Firstly, the test was designed so as to use "fronted" rather than "non-fronted" objects to elicit the preposition *in front of*. Despite this, the subjects tended in this case to characterise the relationship between child and mother as one of 'association', or 'companionship in proximity', (see Dirven, 1989:528). Secondly, the design of the PT did not allow a list of the target prepositions in the instructions, as the FBT did, so that there was greater scope in this test both for error and alternatives. This greater latitude of the PT has clearly affected the results for *in front of*.

Given these considerations, in which there is a plausible explanation for the higher FBT results, the PT would seem to be the easier, and therefore potentially higher scoring test, despite the similarity of the overall mean scores.

6.2.1.4 The translation tests

The two translation tests scored on overall mean average approximately 10% and 20% higher than the FBT and PT. The ETT scores 8.9% higher overall than the ATT. There are two possible reasons for this: that translation into L1 is always easier than from L1 into a second, less familiar, language, since L1 intuitions prevent L1 errors; secondly, that the Arabic locatives, prepositional and adverbial, are more flexibly used

than the English spatial prepositions, so that there is less scope for error when translating from English into Arabic than vice versa. For example the Arabic 'wasta' is the primary counterpart of *among*, but can also mean *between*. Similarly, 'fi' can be used to translate *at*, *in* or even *on* into Arabic. Conversely, however when translating into English, there is usually only one correct usage, for example either *between* or *among*, and either *at*, *in* or *on*. In this way it is easier to make a mistake going from Arabic to English than vice versa and this also may account for the higher overall score of the ETT.

Translation tests are more directive in character than cloze-style tests, presenting clearly the task of translating one lexical item into its equivalent in the first or second language. This seems to allow less scope for error, and hence leads to higher scores on average.

As a final note to the preceding comparisons of tests, it seems clear that the decision that four tests, five including the CT, would be necessary to provide sufficiently broad data to make significant generalisations about spatial preposition competence was justified. The different tests give different ranking orders of scores for the prepositions, as do other studies, but these differences are due to the differences in design of the tests, the two translation tests giving almost identical ranking orders, and are furthermore based on data insufficient in themselves to support significant generalisations: it is more appropriate to look at overall groups of prepositions, as in 6.2.11, than to look for a strict hierarchy, especially in each individual test. 6.2.11 shows a clustering of three

major groups: easy, medium and difficult, which is confirmed by the work of other researchers (see Telleen and Wren, 1985).

6.2.1.5 Composition test

The inherent problem with testing by free composition is concisely expressed by Lado (1961:250):

The student is often able to avoid ... problems deliberately in writing a test composition.

The interpretation of the composition test is further restricted by the relatively infrequent use of many of the target prepositions, allowing insufficient data for making generalisations.

Two prepositions, *in front of* and *behind*, were not used at all, which might seem odd, since this pair of horizontal axis prepositions were not expected to cause, and did not cause, much difficulty for the Arab learners. The other eight prepositions used were:

Table 6.2.12 CT Summary, Years 1-4 Inclusive

Preposition	Number of Uses	Number Correct	Number Incorrect	Success
<i>in</i>	178	146	32	82%
<i>at</i>	34	12	22	35%
<i>on</i>	20	10	10	50%
<i>between</i>	12	6	6	
<i>under</i>	5	4	1	
<i>among</i>	3	3	0	
<i>below</i>	1	1	0	
<i>above</i>	1	1	0	

From this we see that the prepositions of general location were most frequently used. The others are used so infrequently as to permit little comment. If figures were available for standard frequency of use among L1 speakers of English in free composition some estimates might be made of the degree of avoidance among the Arab subjects.

In terms of accuracy, the order of *in* (82%), *on* (50%) and *at* (35%) reflects the overall findings of the other tests (see Table 6.2.4).

In comparing between the four years, it is noticeable that overall frequency increases gradually from Years 1-3, and falls abruptly to Year 4. At the same time accuracy remains roughly constant at between 61% and 67% for Years 1 to 3, but rises to 87% for Year 4 (see Tables 5.3.1 - 5.3.4).

These figures might be interpreted to show that the subjects become more careful of their usage of English spatial prepositions by Year 4, leading to less frequent but more accurate usage.

To conclude, the CT reveals a preference for general location prepositions, especially *in*, and a pattern of error which confirms the findings of the other tests, i.e. *at* > *on* > *in*. There is also some evidence of "fossilisation" in the lack of increase in competence from Years 1 to 3.

6.2.1.6 Acquisition order

A review of the literature in this field reveals a common use of the concept of an "acquisition order" in reference to spatial prepositions, both in terms of cognitive complexity and with respect to SLA. For example Johnston and Slobin (1979:531) suggest the following:

If basic cognitive complexity were the sole determinant of acquisition we would expect locatives to appear in the order given below:

in / on / under < *beside* < *back_f / front_f* < *between* < *back / front*.

Here a subscript *f* represents a position which is associated with an object that is "fronted", i.e. has a back or front.

Studies of English spatial prepositions, such as Clark's (1973), suggest that prepositions such as *in* and *on* are less complex than the preposition *under* because *in* refers to a container and *on* refers to a surface, whereas if something is *under* an object, it is on a surface which supports that object. On the other hand, Wilcox and Palermo (1974) found that children's performance tends to improve with *under* but falls off slightly with *in* and *on* as age increases. Studies of the acquisition of English locatives by non-native speakers of English (Johnston and Slobin, 1979 and Mukattash, 1985) support, in general, the notion of acquisition proposed by Clark (1973) and others.

The results of this study do not support any strong claim to a strict acquisition order. In the first place, there would need to be some argument to support any view that a high score for a particular preposition implied an easier or earlier acquisition; this issue is not central to the concerns of this study. It may be sufficient to comment that an order of acquisition need not be one of temporal sequence but of order of difficulty, as measured for example by such tests as comprise the instrument of this study. Thus the Table above, 6.2.11, could be taken to describe such an acquisition order.

Secondly, although the results may indicate an order of acquisition, there is insufficient data to define a clear ranking order of first to tenth. However, there is clearly a division into three groups. This finds agreement in the work of Telleen and Wren (1985:306-307) who claim that:

in spite of the inconsistencies in rankings, overall the prepositions appear to cluster into three major groups of easy, medium and difficult words for all groups ... *below* seemed to be the most difficult to learn.

The mean score percentages in the table above show the prepositions falling into three groups.

The first group are those which presented relatively little difficulty for the subjects: *in, under, between, in front of, behind*. Overall, there is little significant difference between the mean test scores for the five prepositions in this group, and thus little basis for any assessment of difficulty or acquisition order.

To begin with *in front of* and *behind*, this study does not provide sufficient evidence to determine any order of difficulty for these two prepositions.

L1 studies have produced conflicting results in respect of which of these two prepositions is acquired first, although this may be due to their conceptual complexity and to a failure to take this into account in empirical investigations (Johnston, 1984). The complexity of *in front of* and *behind* has been discussed in Chapter Three.

There has been relatively little work done on acquisition of English prepositions, especially the spatial prepositions as a specific class, by second language speakers. Pavesi (1987) does not include *in front of* and *behind*.

In is not generally considered to be conceptually complex and has been found to occur very frequently relative to other spatial prepositions (Wilcox and Palermo, 1974). Studies of the acquisition of English as a second language have found *in* to be relatively unproblematic but prone to over-use by Spanish learners (Schumann, 1986:264) and Arab learners (Mukattash, 1984). Both authors attribute this to L1 interference. The findings of this study for *in* seem to be in agreement with those of other researchers.

Under was a high scoring preposition in the tests of this study, which suggests that it presents little difficulty to Arab learners.

L1 studies have found *under* to be easily acquired. Connor and Chapman (1985) and Mukattash (1985) found that *under* was frequently used in place of *below* among Arab learners of English but that the reverse was rarely the case.

Between is a high scoring preposition in this study. Bavin's (1990:64) study of Warlpiri children reports that:

In contrast with previous studies on other languages ... it was found that kulkurru *between* was acquired before pirdangirli *behind*.

In the present study, however, there is insufficient data to support a judgement of this kind (see Table 6.2.11).

Telleen and Wren (1985), in a study of the effects of systematic instruction for language-delayed children in a pre-school setting, found that *between* seemed to be among the most difficult prepositions to acquire. This does not appear to have been the case for the learners of English as a second language in this study.

The second group of prepositions indicated in Table 6.2.11 consists of two prepositions: *on* and *above*.

The scores for *on*, mean average overall 58.95%, indicate that there was some difficulty for the subjects with this preposition. *On* is predicted, by Landau and Jackendoff (1993:227), to be more difficult, as a concept, than *in*. *On* is slightly more complex: it requires that its reference object possess a surface, whether it be a line ("*on* the border"), a surface ("*on* the square"), or an object with a boundary that is a line or a surface ("a house *on* the lake" or "*on* the hill" respectively).

In L2 studies Mukattash (1985) finds that *in* is overused in place of *on* by Arab learners of English. Schumann (1986) finds *on* omitted by oriental learners and *in* incorrectly substituted by Spanish speaking subjects.

The above findings confirm the difficulty of *on*, found in the present study, and also suggest L1 interference as another cause of such difficulty.

Above is the other middle group preposition, and is often the subject of error. As discussed in Chapter Three, *above* is complex in that it conveys

the notion of 'higher than' specifically on a vertical axis and primarily in a spatial sense (Garnham, 1989). Mukattash (1985) finds evidence of difficulty due to L1 interference.

Despite the FBT results discussed in 6.2 (*above*), where there is some evidence that the score for *above* is artificially low, the results of this study are consistent with those of Mukattash.

The third group of prepositions indicated in Table 6.2.11 consists of *at*, *among*, and *below*. All of these score significantly below the second, middle, group but not significantly differently from each other. This group then comprises those spatial prepositions which present frequent difficulty for the Arab learners in this study.

At scores unexpectedly low in the two translation tests which are usually the higher scoring tests. The translation tests are more constrained, as has been noted above (6.2.1.4), and have less scope for conceptual or processing error or for acceptable if non-targeted substitutions. A high error rate in translation tests would seem then to indicate another source of error such as L1 interference.

The usage and function of *at* is difficult, even for L1 English speakers, to understand and explain, as Takahaski (1969) points out. He also maintains that the difficulty goes to the heart of the way in which the basic spatial relationships pertaining to point, surface and volume are understood and organised linguistically. Hartford (to appear) makes a similar point, commenting also that:

While many languages do not routinely make even this 3 way distinction, they generally do have devices by which they do so when PRAGMATICS deems it necessary. The fineness of spatial relations tends to differ across languages ... The (Adult L2) learner, although cognitively developed, has to discover where the language-specific distinctions lie. (my brackets)

The difficulties with *at* predicted and observed by the above researchers are confirmed in the results of this study.

Similarly, Mukattash (1985) finds evidence of difficulty with *at*, resulting in the incorrect substitution of *in* by Arab learners, due to L1 interference and, interestingly, of the development of a strategy for overcoming such interference by substituting *at* for *in*, even where the latter is required in some cases. The interference issue will be discussed under the relevant hypotheses in 6.3.

Among has been the object of relatively little research as far as this author is aware. Landau and Jackendoff (1993:227) point out that quantity, rather than geometric type or axial structure, is the restricting condition on reference objects for this preposition. They maintain that:

For *between* the reference object is not a single object but rather a pair. In the case of *among* and *amidst* the reference object is an aggregate (or collection of objects).

Quirk et al (1985:680) further point out that:

Between relates the position of an object to a definite or exclusive set of discrete objects, whereas *among* relates to nondiscrete objects. Thus:

Switzerland lies *between*/**among* France, Germany, Austria and Italy.

Finally, *below* is the lowest scoring preposition overall in this study. It is worthy of note that while L1 discussions of *below* invariably link it with *above* as the corresponding vertical axis term, the results of this study indicate an asymmetry between the two with *above* scoring relatively much higher (Table 6.2.11). The possible Arabic cause of this will be discussed in Section 6.3

However Holzman (1981), in an empirical study of conceptual and linguistic development in English speaking children, also found *below* to cause more errors than *above*, and to be among the most difficult spatial prepositions to acquire. Telleen and Wren's (1985) study of language delayed preschoolers found *below* to be among the most difficult spatial prepositions to learn.

Mukattash (1985) finds evidence of L1 interference in the frequent substitution of *under* for *below*.

6.3 L1 (Arabic) Interference in the Acquisition of English Spatial Prepositions

6.3.1 Introduction

The main aim of this study is to determine if, and to what extent, the L1 of Arab learners interferes with their acquisition of certain English spatial prepositions.

The aim of the following section (6.4) is to show from the results of this study that L1 interference is a significant cause of errors in the Arab learners' use of these English spatial prepositions.

Firstly a preliminary section (6.3.2) will present a definition of the key term "counterpart" and also a review of the terms "language transfer" and "interference" in order to specify definitions for the purposes of the ensuing discussion. This section will conclude with a statement of the form of the argument needed to support the general hypothesis of L1 interference.

In a second section (6.3.3) the detailed analysis of the forms and meanings of the target spatial prepositions in English and their counterparts in Arabic which was set out in Chapter Three will be summarised and presented in the form of a Table. This Table will be used to indicate predictions of the responses which would be expected from Arab learners of English as evidence of L1 interference.

In the following sections (6.4.1 - 6.4.5) there will be a discussion of each of the detailed hypotheses analysed in Chapter Five, with reference to the test results for each of the ten English spatial prepositions, and conclusions will be presented.

6.3.2 Definition of terms

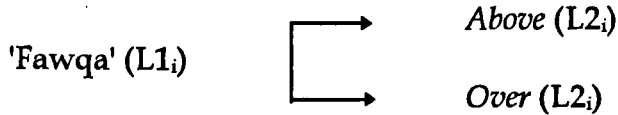
The following discussion will make extensive use of the term "counterpart". This term has been used by other authors (Mukattash, 1985) but will require detailed definition for the purposes of this study.

We will define a "counterpart" as a lexical item in one language ($L1_i$) which corresponds in meaning or usage to a lexical item in a second language ($L2_i$). This correspondence may be such that the $L2_i$ is used to translate all, or almost all, of the uses of the $L1_i$, and in this case the $L2_i$ is the strong primary counterpart of the $L1_i$. For example *above* has a strong primary counterpart, in 'fawqa', and we may represent this as

Above ($L1_i$) \longrightarrow 'Fawqa' ($L2_i$)

The reverse, that the $L2_i$ is the strong primary counterpart of the $L1_i$ does not necessarily follow, and is not always the case. For example 'fawqa' has only a weak "primary" counterpart in *above*. Here the relationship is described as only one of weak "primary" counterpart because although 'fawqa' is often translated as *above*, there are a number of exceptions:

'fawqa' may often also be translated as *over*, which is its second, weak, primary counterpart. We may represent this as



Again, the mutual entailment does not follow.

When the L2_i is sometimes used in some contexts to translate the L1_i, but is not a primary counterpart, the relationship is that of secondary counterpart. This relationship may be quite strong, where the L2_i captures several of the uses of the L1_i, or weak, where the L2_i can only very rarely be used to translate the L1_i. For example, *below* is usually translated either as 'asfala' or 'dúna', both of which are primary counterparts of *below*. However *below* can also be translated as 'tahta' in a number of instances which reveals *below* to have a secondary counterpart in 'tahta'. This can be represented as



Conversely, *below* is a weak secondary counterpart of 'tahta' since *below* can only rarely be used to translate 'tahta'. This is represented as



To summarise, there are four types of counterpart: strong and weak primary, and strong and weak secondary. Although a completely precise and defining line cannot be drawn to distinguish these four categories we

can say that a strong primary counterpart is used in all, or almost all, cases to translate an $L1_i$. A weak primary is still the main equivalent, although there may be two main equivalents, but allows a number of alternative translations for the $L1_i$. A strong secondary counterpart, while not primary, is nevertheless used in a number of instances to translate the $L1_i$; and finally a weak secondary is a very occasional possibility.

Another distinction between primary and secondary counterparts hinges on the difference between "meaning" and "use". Primary counterparts can be understood as "meaning" the same, for example 'àlā' means *on*. However, secondary counterparts, especially weak ones, are better understood not as meaning the same but as having the same use. For example, 'àlā' can be used in Arabic where *at* is required in English. It does not follow that 'àlā' means *at*, but only that 'àlā' and *at* may have a parallel use in certain contexts.

In the following discussion we will also need on occasion to indicate that an $L2_i$ is only infrequently used even though it may be as, or more, acceptable than a more frequently used item. For example although in Arabic 'asfala' and 'dúna' are primary counterparts of *below*, these two items are not often used in daily language. The reason for this is complex, but appears to be that Arabic speakers do not generally pay much attention to the vertical axis specificity of 'dúna' and 'asfala' and are content merely to indicate a general lower level location with the term 'tahta', or *under*. This infrequency of usage will be indicated where appropriate by the use of single brackets (...).

A final convention which will be used is that of square brackets to indicate a colloquial usage, as for example <'àlã'>, which will mean that 'àlã' is used colloquially in the indicated context.

Before proceeding with the discussion of the hypotheses, which propose that the errors which the Arab subjects made in the tests were due in part to "interference" from Arabic, it is important to be clear about what this term will be taken to mean in the context of this study. In the literature review in Chapter Two above, several authors were cited in connection with "Language Transfer" (see Section 2.5) and the attempt to explain what this term refers to. This author agrees with Schachter (1983:98) that:

evidence for the process of transfer is more appropriately viewed as evidence of a constraint on the learner's hypothesis testing process.

In other words when reference is made to "transfer" this is best understood not literally as a process but as the way in which the L1 potentially influences the rule hypothesising process which informs the learner's interlanguage, or developing grammar of the L2. This further suggests that rather than "negative transfer", the term "interference" is more appropriate to characterise that feature of second language acquisition whereby errors occur in L2 production apparently due to the influence of the L1.

Finally, it is appropriate at this point to propose the form of the argument which will be employed in Section 6.4 to support the view that L2 errors are indeed caused, at least in part, by L1 interference, as defined above,

and specifically that the L1 of Arab learners interferes with their acquisition of certain English spatial prepositions.

To support the L1 (Arabic) interference hypotheses it will be necessary to show that errors in the use of English spatial prepositions by Arabic subjects occur where

1. The English spatial preposition has a primary Arabic counterpart which in turn has more than one English counterpart. In this case substitution of one English counterpart for another might be expected.
2. The English spatial preposition has a primary Arabic counterpart, but also a secondary Arabic counterpart which in turn has a different English primary counterpart. In this case the second English counterpart might be incorrectly substituted for the first English spatial preposition.

If we then also accept that knowledge of the rule system or grammar of the L1 is used to help construct a developing internal grammar of the L2, that is an L1/L2 interlanguage, it is reasonable to expect that L1 usage will be occasionally overt in the L2 production errors. As explained above this can be taken to be the result of the L1 placing constraints on the formation of an L2 rule.

In short, where the Arabic and English prepositions overlap but are not exactly equivalent in meaning we can expect errors due to interference.

Furthermore, the closer the overlap (ie the stronger the counterpart relationship) the less likelihood there is of incorrect substitution.

These arguments are made explicit in the form of a diagram "Table of Counterparts" in Table 6.3.3 where the counterparts of differing strengths for each preposition, both from English to Arabic and Arabic to English are used to predict both correct and incorrect responses to test items. The incorrect responses are predicted on the basis of Arabic interference argued for as above.

6.3.3 English Spatial Prepositions and Their More Frequent Corresponding Counterparts in Arabic*

Test Item (English Prepositions)	Arabic Counterparts to Test Item	English Counterparts to Arabic Prepositions	Predicted Test Responses
<i>Between</i>	→ 'Bayna'	↔ <i>Between</i> <i>Among</i>	<i>Between</i> * <i>Among</i>
<i>Among</i>	↔ 'Wasta' 'Bayna'	↔ <i>Among</i> <i>Between</i>	<i>Among</i> * <i>Between</i>
<i>In</i>	→ 'Fi'	↔ <i>In</i> <i>At</i>	<i>In</i> * <i>At</i>



*continue

Test Item (English Prepositions)	Arabic Counterparts to Test Item	English Counterparts to Arabic Prepositions	Predicted Test Responses
<i>Below</i>	→	→	<i>Below</i>
	→	→	* <i>Under</i>
	→	→	* <i>Beneath</i>
<i>Under</i>	→	→	* <i>Underneath</i>
	→	→	<i>Below</i>
	→	→	<i>Under</i>
<i>On</i>	→	→	<i>Below</i>
	→	→	<i>Under</i>
	→	→	<i>From/Under</i>
<i>On</i>	→	→	<i>Under</i>
	→	→	* <i>From/Under</i>
	→	→	<i>On</i>
<i>On</i>	→	→	* <i>At</i>
	→	→	<i>On</i>
	→	→	* <i>At</i>



*continue

Test Item (English Prepositions)	Arabic Counterparts to Test Item	English Counterparts to Arabic Prepositions	Predicted Test Responses
<i>Above</i>	'Fawqā' 'Ālā'	<i>Above</i> <i>Over</i> { <i>On</i> } <i>On</i> { <i>Above</i> }	<i>Above</i> <i>*Over</i> <i>*On</i>
<i>At</i>	'Īnda' 'Fī'	<i>At</i> <i>With</i> <i>Near</i> <i>In</i> <i>At</i>	<i>At</i> <i>*In</i> <i>*With</i> <i>*Near</i>



*continue

Test Item (English Prepositions)	Arabic Counterparts to Test Item	English Counterparts to Arabic Prepositions	Predicted Test Responses
<i>In front of</i>	→	→ <i>In front of</i>	<i>In front of</i>
	→	→ <i>In front of</i>	* <i>In front</i>
	→	→ <i>In front</i>	* <i>Front</i>
	→	→ <i>In front</i>	
<i>Behind</i>	→	→ <i>Behind</i>	<i>Behind</i>
	→	→ <i>Back</i>	* <i>Back</i>
	→	→ <i>Behind</i>	<i>Behind</i>
	→	→ <i>Behind</i>	



6.4 Hypotheses

6.4.1 Hypothesis 1

H_0 Standard Arabic will not interfere with Arab Learners' acquisition of English spatial prepositions.

H_1 Standard Arabic will interfere with Arab learners' acquisition of English spatial prepositions.

Those errors thought to be a result of Standard Arabic interference were analysed using the regression procedure and the results for each test and year are presented in Section 5.4 (see Tables 1.1 - 1.4). As explained in Section 5.4 the p-values for the results of each year indicate Standard Arabic interference where $P > 0.05$, which is sufficient to reject the null-hypothesis. This was found to be the case in all tests for all years except the FBT where all 4 years' results gave p values greater than 0.05, and thus no significant evidence of Standard Arabic interference.

The regression analyses in Chapter Five were applied to the results in each test for all ten target prepositions taken together for each year. However in the case of individual prepositions and individual test items there is sometimes more, or less, evidence of interference than the average result may suggest. For example the substitution of *on* and *in* for *at* in the FBT in items (1) and (9) but not (16) does provide evidence of interference (see Discussion below). Consequently the following section will discuss each preposition in turn with reference to H_1 .

At

At was found to be in the third, most difficult, group of prepositions in the analysis of test results in 6.2 (see Table 6.2.11). *On* was incorrectly substituted for *at* in 49% of the total number of errors for *at* in the FBT, and 53% of the total number of errors for the PT.

For example, in the FBT (Appendix 1:9) subjects responded with

The children are sitting **on* the desk doing their homework.

This is correct usage in this context in Standard Arabic:

... 'àlā' al tawilati.

In the PT (Appendix 2:13) *on* was used again in the sense of *on* a desk rather than *at* a desk. In the translation tests there is no interference resulting in *on* for *at*.

These results strongly suggest that in the restricted use of 'àlā' (*on*) for *at* represented in the above examples and indicated in Table 6.3.3 the incorrect use of *on* is due to Standard Arabic interference.

In was incorrectly substituted for *at* in 25% of the total number of errors for *at* in the FBT, 17% in the PT, 36% in the ATT, and 80% of the ETT errors.

For example in the FBT (Appendix 1:1) subjects gave

They are often *in* home early in the evening.

This is a direct translation of the Arabic "'fi' al bayt" "*in* the house". There is no word for "home" specifically in Arabic.

In the PT (Appendix 2.7) subjects gave

Jeff, see who is *in* the door please.

This is an example of dialect or colloquial Arabic interference and will be discussed under Hypothesis 2.

In the ATT (Appendix 3.1) the following is found

I met my friend *in* the airport.

This is a translation of "... 'fi' al-matāri" which in Arabic means *in* or *at* the airport; there is no other way to express "*at* the airport" in Arabic. Although the primary counterpart of *at* is ' 'inda' (see Table 6.3.3) the following:

'inda' al-matāri

means "*in* the area of the airport", rather than *at* the point named "airport".

In English both *at* and *in* the airport are correct, but *at* is probably the more frequently used since *in* is more specific in this context.

The Arab subjects used *in* forty nine times overall for this item and *at* thirty four times. Since this is not the frequency expected from English L1 speakers this appears to be an example of the overuse of 'fi' as *in* at the expense of 'fi' as *at* as predicted in Table 6.3.3 as an instance of L1 interference.

In the ETT, the use of 'fi' (primary counterpart: *in*) to translate *at* is counted as an example of the incorrect use of *in* for *at*. This occurs in the following response (Appendix 4.5).

Huwa 'fi' bayti Sally. (He is *in* Sally's house)

The correct translation of "*at* Sally's house", referring to general location point rather than specific location within a contained space, would be

Huwa 'inda' Sally. (He is *at* Sally's)

It is possible that the use of the word "house" in the test item is eliciting the over-use of 'fi' (*in*) although

Huwa 'inda' bayti Sally. (He is *at* Sally's house)

is correct, it is not common in Standard Arabic.

Thus although Standard Arabic interference may be prompting the use of 'fi' (*in*) for *at*, this may also be caused partly by the test item itself.

In

In was found to be in the first, easy, group of prepositions in the analysis of test results in Section 6.2 (see 6.2.11).

In the FBT there was no evidence of Standard Arabic interference in the use of *in*.

In the PT (Appendix 2.11) subjects gave

There is a bird hiding *on* the tree

where the picture prompt shows a bird *in* a tree. This is a translation of the Standard Arabic

Al-àsfúr mukhtabi'un 'àlā' al shajarati

(the bird is hiding *on* the tree)

'fi' (*in*) would not be used in this context in Arabic.

The use of *on* would therefore appear to be a result of Standard Arabic interference.

To was used incorrectly in place of *in* in the ATT (Appendix 3:7) in 58% of the errors for this item. The Arabic sentence given was

Wasala al-ra'isu al-Riyadh. (Literally: Arrived the President Riyadh)

This was translated as "The president arrived to Riyadh" reflecting the Standard Arabic

Wasala al-ra'isu ila Riyadh. (Literally: Arrived the President to Riyadh).

The subjects seem to have been aware of the need in this context for a preposition in English, there were only thirteen omissions of preposition in eighty three responses; this will be discussed below. However, as seems clear, the choice of *to* instead of *in* is an error dictated by the subjects' knowledge of Standard Arabic usage.

Among

Among was in the third, difficult, group of prepositions according to the analysis of results in Section 6.2 (see 6.2.11).

In the FBT *between* was incorrectly substituted for *among* in 14% of the total number of errors. This is not significant as evidence of Standard Arabic interference.

In contrast the PT responses contained the incorrect *between* for *among* errors in forty nine out of 166 responses, representing 63% of the 78 errors for this item. For example (Appendix 2:6)

The student is standing **between* his friends.

where the picture prompt shows him standing *among* them. Standard Arabic has two possibilities for this context

... 'wasta' ashabihi (... *among* his friends)

... 'bayna' ashabihi (... *between* his friends)

'Bayna' is more frequent in Standard Arabic, so although it is not the primary counterpart of *among* there is a tendency to think of 'bayna' first as an adverb/preposition of interlocation and to translate this as *between*. This is evidence of Standard Arabic interference.

In the ATT, *between* was used incorrectly instead of *among* (Appendix 3:16) for example:

Al-tiflatu jalisatun 'wasta' zamilātiha

(The girl is sitting *between* her friends)

In this item *between* was used in twenty five of the eighty three responses representing 64% of the 39 errors. Although "... *between* her friends" is acceptable in English if there are two friends, the Arabic "zamilātiha" makes it clear that there are more than two: for "her two friends" the dual form "zamilatayha" would be used. Therefore the use of *between* in this context is an error for the Arab subjects. It occurs because 'bayna' (*between*) is more common than 'wasta' (*among*) in Arabic to indicate

interlocation and can be used in this context to denote location between several reference points. Conversely 'wasta' cannot be used to denote location between two reference points. Thus 'bayna' has a more flexible denotation than 'wasta'. This causes Standard Arabic interference in this case.

Below

Below was in the third, most difficult, group of prepositions for the Arab subjects, according to the analysis of results in Section 6.2 (see Table 6.2.11).

In the FBT *under* was incorrectly substituted for *below* in all three test items for this preposition (Appendix 1:5, 8, 24).

In item (5)

His coat is his knees.

under was given in 37 of the 83 responses, representing 71% of the 52 errors for this item. 'Tahta' (*under*) can be and is frequently used in this context in Arabic although 'dúna' (*below*) is more appropriate.

In item (8)

It's freezing! The temperature must be zero.

under was given in 46 out of 83 responses, 85% of the 54 errors. Again in Arabic 'tahta' (*under*) is frequently used although 'dúna' (*below*) is possible.

In item (24)

The tourists stopped on the bridge to look at the river them.

under was given in 36 of the 83 responses, 82% of the 44 errors. 'Tahta' (*under*) is preferable in Arabic in this context, although 'asfala' (*below*) is possible.

In all three of the above examples straightforward translation from Arabic can be observed in the frequent incorrect use (48% of all responses) of *under* for *below*. This is Standard Arabic interference due to the strength of 'tahta' as a preposition referring to location at a lower point than the reference object, regardless of precise location with respect to the vertical axis, and the infrequency of 'dúna' and 'asfala'.

In the PT there were two items to test *below* (Appendix 2:8, 14). From a total of 166 responses, 90 were of *under* in place of *below*, this was 63% of the total of 143 errors. These results again indicate the strength of the Arabic 'tahta' (*under*) which captures many of the uses of *below* in English and results in interference with the acquisition of *below*. This test

produced many errors (53) apart from *under*, probably because of the latitude allowed by the test design which gave no list of prepositions to choose from.

In the ATT in two of the three items testing *below* (Appendix 3:17,23) there were 114 uses of *under* in 166 responses, or 96% of the 119 errors. The third item (Appendix 3:26) was discounted since *under* is acceptable in this case:

(23) Hal aktubu ismi 'tahta' al satari?

(Do I write my name *under/below* the line?)

Thus the ATT also provides strong evidence of Standard Arabic interference in the acquisition of *below*.

The test results for *under* and *between*, which were both in the first, easy, group of prepositions according to the analysis of results in Section 6.2 (see Table 6.2.11), show no evidence of interference from Standard Arabic. It has been suggested above that L2 learners use their L1 knowledge to help construct the emerging L2 grammar, or L1/L2 interlanguage, and in the case of *under* and *between* the existence of strong primary counterparts appears to facilitate, or place no constraints on acquisition. This is in contrast to the other prepositions of vertical and interlocation, *above*, *below* and *among*, which have either weak primary and strong secondary counterparts (*among* and *below*) or a strong primary

L2 counterpart which has more than one primary counterpart in the L1 (*above*) (see Table 6.3.3).

Similarly, the horizontal axis prepositions *in front of* and *behind* have primary counterparts which do not place constraints on acquisition, and no evidence of Standard Arabic interference is apparent in the test results for these two prepositions.

6.4.2 Hypothesis 2

H₀ Arabic dialects will not interfere in Arab learners' acquisition of English spatial prepositions.

H₂ Arabic dialects will interfere in Arab learners' acquisition of English spatial prepositions.

The Standard Arabic referred to in H₁ is the canonical form of Arabic, accepted and valued as such across the whole of the Arabic speaking world. It is the medium of instruction in schools and universities, the language of the media and the written, literary form. There is also an accepted and clearly defined standard phonological form, or pronunciation of Standard Arabic, based on traditional, zealously preserved rules and conventions and applied in particular to recitation of Qur'an and poetry. However, in their day to day vernacular usage, Arabs use forms which are grammatically less complex than the standard syntactic form, for example in omitting case endings and having a

simpler conjugation of verbs; there is also a significant difference from Standard Arabic in the lexicon, and, most markedly, in phonology or accent. These differences from Standard Arabic are sufficiently extensive and regular as to be characterised as "dialects". Some modern Arabic scholars have studied these dialects and produced grammars and dictionaries of widely spoken dialects such as those of Syria, Egypt and Morocco. I am unaware of any work in this field with respect to Saudi Arabian dialects which are relatively close to Standard Arabic.

The purpose of H_2 is to investigate the influence of dialect on the subjects' acquisition and use of the ten English spatial prepositions of this study. Tables 2.1 - 2.4 in Chapter Five show the results of a regression analysis of all test results which are thought to be the result of interference from Arabic dialect. As explained in Section 5.4.2 those years showing p-values of less than 0.05 provide evidence of dialect interference. Such evidence, sufficient to reject the H_0 , was found in the FBT, Years 1, 2 and 4, the PT, Years 1-4, the ATT, Year 4, and the ETT, Years 1-4. Again these results are for all ten prepositions taken together, individual prepositions and individual test items give varying results and will be discussed separately below. Only those test items showing clear evidence of dialect interference will be examined.

At

At was in the third, most difficult, group of prepositions according to the analysis of results in Section 6.2 (see Table 6.2.11). Table 6.3.3 predicts

the use of *in*, *on* and *behind* in place of *at*, as a result of dialect interference.

In the FBT item 16 was designed to test *at*

- (16) There is someone the front door, I heard the doorbell ring.

In this item the subjects responded with *in* (15 times), *on* (17 times) and *behind* (15 times) out of 83 responses. Taken together these substitutions account for 96% of the 48 errors for this item. The Standard Arabic preposition in this case is 'inda' = *at*, the use of *in*, *on* and *behind* reveals direct translation from the dialect usage:

... 'bi' al bab (*in* the door)

... 'alā' al bab (*on* the door)

... 'warā' 'khalfa al bab (*behind* the door)

all of which mean "*at* the door" in dialect.

In the PT (Appendix 2:7) the test item shows a man at a front door ringing the bell, the sentence given is

- (7) Geoff see who's the door please.

The responses to this included *in* (9 times), *on* (24 times) and *behind* (5 times) totalling 38 out of a total of 83 responses or 62% of the 61 errors.

Again these errors occur due to translation from dialect usage as in the discussion of the FBT, item (16), above. These translations are due to the existence of dialect counterparts which interfere in the acquisition of *at*.

In the ATT item (6) tests *at*,

(6) Al rajulu waqifun 'inda' al nafidhah

(The man is standing *at* the window)

This meaning of *at* would be expressed in dialect by the use of 'janb' = *near, beside*.

The responses to this item include *near* or *near to* 25 times, in 83 responses representing 45% of the 55 errors.

What appears to be happening here is that a significant number of subjects are mentally representing the test item to themselves in dialect before translating into English. In this way their dialect is interfering with their acquisition of *at*.

On

On was in the middle, occasionally difficult, group of prepositions according to the analysis of results in Section 6.2 (see Table 6.2.11).

Table 6.3.3 predicts substitution of *at* and *in* for *on* due to L1 dialect interference.

In the FBT item 21 tests *on*:

(21) There is a red label the bottle.

The subjects' responses include 34 uses of *in* from 83 responses, representing 77% of the 44 errors for this item.

Arabic dialect would use 'fi' (*in*) in this context instead of the Standard Arabic 'alā' (*on*) and this appears to be the cause of the incorrect use of *in*.

In the PT, the sentence

(1) There are many apples the tree

accompanies a picture of an apple tree with many apples on it. Subjects' responses include 32 uses of *in* in 83 responses, 84% of the total number of 38 errors. Again this is apparently due to the dialectal "... 'fi' al shajarati" = "... *in* the tree", where Standard Arabic would use 'alā' = *on*.

The results of the above two tests give strong evidence of dialect interference in the acquisition of *on*.

Above

Above was in the middle, occasionally difficult, group of prepositions according to the analysis of results in Section 6.2 (see Table 6.2.11).

Table 6.3.3 predicts the use of *from* for *above* in some cases, due to dialect interference.

In the PT, item (5) shows a diagram of a mountain next to the sea with an arrow indicating its height above sea level. The accompanying sentence is

(5) The mountain peak is 7000 ft sea level.

In 17 of the 83 responses the subjects gave *from*, 35% of the total number of errors for this item. This is probably due to the dialect use of 'min' (= *from*) in this context, again indicating dialect interference.

Among

Among was in the third, most difficult, group of prepositions according to the analysis of results in Section 6.2 (see Table 6.2.11).

Table 6.3.3 predicts the occasional use of *in* for *among* due to dialect interference.

In the FBT, item 13

(13) Was Mr Wood *in* the meeting? No he was not the attendants.

subjects responded with *in* 28 times in 83 responses, or 45% of the 62 errors. Standard Arabic would use 'bayna' (= *between*) or 'wasta' (= *among*) in this context. The use of *in* indicates interference from the dialectal 'fi' (= *in*) which would be used here.

In front of

In front of was in the easiest group of prepositions according to the analysis of results in Section 6.2 (see Table 6.2.11).

Table 6.3.3 predicts the use of *on* and *at* for *in front of* due to dialect interference.

In the FBT for item (6)

- (6) She spends too many hours the TV screen.

subjects responded with *on* 15 times, and *at* 6 times, out of 83 responses. Together these represent 78% of the 27 errors for this item. These errors are made as a result of dialect interference since

... 'àlā' (= *on*) al televiziun, and ... ' 'inda' (= *at*) al televiziun

are both common dialect usages. Standard Arabic would use 'amāma' (= *in front of*) in this context. Again dialect is interfering with the acquisition of the English spatial preposition, as defined above in 6.3.2.

The test results for the other five prepositions; *in*, *behind*, *between*, *under* and *below*, do not provide significant evidence of dialect interference.

Finally, some of the evidence of dialect interference is more appropriately analysed in the context of the discussions of the remaining hypotheses below.

6.4.3 Hypothesis 3

H₀ Arab learners will **not** tend to have difficulty determining which English spatial preposition is appropriate in contexts where there is a shared primary counterpart in Arabic.

H₃ Arab learners will tend to have difficulty determining which English spatial preposition is appropriate in contexts where there is a shared primary counterpart in Arabic.

The previous two hypotheses, H₁ and H₂, were proposed in order to investigate the effect of Standard Arabic and Arabic dialect respectively on the acquisition of English spatial prepositions. Hypotheses 3, 4 and 5 are intended to highlight three specific ways in which Arabic as an L1 interferes with the acquisition of English as a second language. Hypothesis 3 suggests that where there is a single Arabic preposition or locative adverb which can be used to translate two or more English prepositions, there will be some confusion among Arab learners as to which English preposition is correct or more appropriate in a given context. Furthermore, it will be suggested that there will be a tendency to rely on one particular preposition in English if the Arabic counterpart is one which is frequently and comprehensively used to denote any general area of location such as interlocation or lower relative location. For example, of the three prepositions of general location, *at*, *in* and *on*, *in* will tend to be overused at the expense of the others, since of the Arabic counterparts 'inda', 'fi' and 'alā', 'fi' (= *in*) is the most widely and generally used in Arabic, more so than *in* in English.

As explained briefly in Section 5.4.3, this hypothesis was tested by grouping together the different responses for each preposition in each test. These responses were then analysed using the Chi-Square test. This test is designed to reveal those instances where the correct response is not significantly more frequent than other incorrect responses, in which case the resulting P value is less than 0.05. In such cases it is apparent that the subjects have, on the whole, failed to distinguish between certain English spatial prepositions. If these instances correspond to a situation where there is a common Arabic counterpart to the English spatial prepositions in question it seems clear that there is evidence of L1 interference.

As explained above for H_1 and H_2 , the statistical analysis of results is sometimes too general to reveal single instances of significant interference. Hence the discussion below will focus in the first instance on the Chi-Square test results where $P < 0.05$, but will also consider particular examples from other items which do not give significant P values when analysed collectively.

The following discussion will focus on only those examples of difficulty relevant to this hypothesis.

On, (in and at)

The Chi-Square test produces a value of $P < 0.025$ for the items testing *on*: for these items *at* and *in* were extensively substituted.

Two items reveal confusion over the correct use of *on* (Appendix 1: 18, 21).

(18) Cairo isthe River Nile.

(21) There is a red label the bottle.

In item (18), *at* was given 22 times and *on* 28 times, out of 83 responses. In this instance there is no significant difference between the frequency of *at* and *on*.

Table 6.3.3 indicates that in Standard Arabic 'alā' can be used in contexts both where *at* and *on* are used in English, although *on* is the primary counterpart. In the context of (18) above, Standard Arabic would use 'alā' (= *on*). However the subjects are unsure whether to use *on* or *at*, and consequently both were used with approximately equal frequency. This is an example of difficulty in determining which English spatial preposition to use where there is a common counterpart in Arabic as proposed in H₃, and as such is a result of L1 interference.

For item 21, *in* was used 34 times and *on* 39 times in 83 responses. As Table 6.3.3 indicates, 'fi' (= *in*) can be used to mean *on* in certain contexts, and in this case "... 'fi' al qarurah" would be said in dialect to mean "... *on* the bottle". This gives rise to the incorrect substitution of *in* for *on*, due to the wide use of 'fi' (= *in*, <*on*>) in Arabic, and hence the difficulty in determining which of the two English counterparts is appropriate.

In the PT, as discussed in Section 6.4.2, the test item

- (1) There are many apples the tree.

received 32 responses of *in*, compared to 47 for *on*, due to the dialect interference of 'fi' = <*on*>. This frequency of response is sufficient to indicate a difficulty in deciding whether to use *in* or *on* in this context.

The other item testing *on* in the PT (Appendix 2:9) did not give significant evidence of the substitution of *in* for *on*, which is the reason for the value of $P = 0.7$ for *on* in the Chi-Square test (Table 3.2).

In (at)

In the FBT, *in* is tested in items 4, 7 and 11 (Appendix 1).

- (4) He arrived the UK last week.

There were 43 responses of *at* for this item, and 35 of *in*. The Arabic for "in the UK" would be "... 'fi' (= *in*) al mamlakati al muhtahidati". However 'fi' is also a counterpart of *at*, as indicated in Table 6.3.3, and this leads the subjects to use *at* inappropriately in place of *in* in this context.

Similarly,

- (7) They will wait for you the lobby of the library.

received 28 responses of *at* and 30 of *in*. As above, the Arabic uses 'fi' (= *in/at*) which causes difficulty in determining the appropriate English preposition in this context.

Above

In the Chi-Square test results for the ATT the responses for items testing *above* (Appendix 3: 8, 18, 27) gave a value of $P < 0.05$ ($P = 0.025$), indicating failure to distinguish *on* and *over* from *above*.

- (8) talàt al-shamsu 'fawqa' al-ufoqi.
(The sun rose *above* the horizon.)
- (18) Àllaqa al-lawhta 'fawqa' surati walidihi.
(He hung the painting *above* his father's picture.)
- (27) Tatiru al-ta'iratu 'fawqa' al-sahabi.
(The airplane flies *above* the clouds.)

In the above items the Arabic 'fawqa' has two primary counterparts in English, i.e. *above* and *over*. That is to say 'fawqa' means both *above* and *over*, and by extension, where *over* means *on* in the sense of "on top of", 'fawqa' can mean *on*. Conversely the English prepositions *above* and *over*

share a primary counterpart in the Arabic 'fawqa'. Before discussing these results the responses in the PT for the *above* will be examined.

In the PT the following items test *above*:

- (5) The mountain peak is 7,000 ft sea level (picture/diagram of mountain and sea showing height in feet).
- (10) The primitive hunters are aiming at the birds them with their arrows. (picture of birds above hunters).

Taking both items together the subjects' responses included *over* 37 times and *above* 53 times (22% and 32% of responses respectively). In this context only *above* is acceptable in English, and the responses of *over* are due to the existence of a single primary counterpart in Arabic: 'fawqa'.

In the above two examples of L1 interference it is important to note that in the first test discussed, the ATT, both *over* and *above* are acceptable, although giving different emphases of meaning, and *above* is only more acceptable in (18) in order to distinguish between *over* meaning 'on top of' and *over* meaning *above*. However the Arabic subjects are not necessarily aware of these subtleties of English; they probably use *over* and *above* interchangeably, because there is a single primary counterpart in Arabic, i.e. 'fawqa'. This is borne out in the results for the second test discussed, where *over* is not acceptable in English, yet is still used almost as often as *above*.

The conclusion, then, is that this is evidence in support of H₃.

Below and Under

Table 6.3.3 indicates that *below* and *under* share a primary counterpart in the Arabic 'tahta', which in turn has a strong primary counterpart in *under*, i.e. means *under*, and a strong secondary counterpart in *below*, i.e. is used often in Arabic in contexts where English uses *below*. It is to be expected that Arab subjects will have difficulty determining which English preposition to use in a particular context. In addition, 'tahta' is more frequently used in Arabic than 'dúna' (*below*) or 'asfala' (*below*), and this is likely to lead to the over use of *under* (= 'tahta') in English.

In the FBT taken as a whole there are 119 incorrect uses of *under* in place of *below*, which is used correctly 102 times, representing 48% and 41% of the total number of responses respectively. 'Tahta' (*under*) is acceptable in Arabic in the contexts presented in the test items (Appendix 1: 5, 8, 24) although 'asfala' and 'dúna' are available, and it seems clear that this leads the Arab subjects to fail to perceive any significant difference in meaning between *below* and *under*, and to have difficulty deciding which one to use.

In the PT two items test *below* (Appendix 2: 8, 14)

(8) Dan lives on the 4th floor and Sam lives him on the 3rd floor (picture showing Sam's flat below but not under Dan's).

(14) The airplane is flying the clouds (picture showing airplane below/under clouds).

In both items there was a marked tendency to use *under*, 91 times altogether, compared to 33 uses of *below*.

Although *under* is acceptable as well as *below* in (14), due to the movement of the plane, *under* is probably not used by the Arab subjects because they are aware that it can be used in this context, since they are equally disposed to use *under* in item (8), where it is not acceptable in English. This is another example of the phenomenon proposed in H₃, where a shared counterpart leads to failure to distinguish between two English prepositions.

In the ATT in two items (Appendix 3: 17, 23) *under* was given for *below* 114 times, compared to 44 uses of *below*. The items in Arabic give 'tahta' (= *under* and *below*), but the subjects were not sensitive to the requirement of *below* rather than *under* in English, and considered *under* to be acceptable. It is probably also the case that the subjects are aware that both *under* and *below* are counterparts of 'tahta', but are more confident in the use of *under* and less certain of the specific nuances of *below*, which

they may in addition consider to be a possible, but not obligatory, alternative, as in the case of 'dúna' and 'asfala' in Arabic. This is an example of L1 interference as defined above (6.3.2).

In the ETT the following test below:

- (10) When the sun sets it goes below the horizon.
- (6) The Dead Sea is below sea level.
- (2) A hawk circled below the clouds.

The subjects were required to translate these sentences into Arabic. In Standard Arabic 'dúna' (*below*) is the most appropriate locative adverb for items (2) and (6), and 'asfala' (*below*) is strictly preferable in (10). However both 'dúna' and 'asfala' give way to 'tahta' in terms of frequency of usage; this is even more so in dialectal usage. This indicates two things: that 'tahta' is more generally used in Arabic, revealing a lack of particular attention to the more precise references of 'dúna' and 'asfala'; and that this lack of precision is transferred into English by the use of the primary counterpart of 'tahta', i.e. *under*. Thus in English the subjects are not making a distinction between *below* and *under*, due to L1 interference.

Among and Between

The results of the Chi-Square test presented in Chapter Five (Tables 3.1-3.4) indicate a significant level of substitution of *between* for *among* in the PT (P = 0.0001) and the ETT (P = 0.0001). Table 6.3.3 indicates that *among*

and *between* share a counterpart in 'bayna' and this is expected to lead to use of *between* and *among*, since 'bayna' (*between*) is a secondary counterpart of *among*, but 'wasta' (*among*) is not a counterpart of *between*. This asymmetry of counterparts would lead to the over use of *between*.

In the PT (Appendix 2: 6, 17) *between* is used 49 times and *among* 62 times, representing 30% and 37% of responses respectively. In Arabic, Standard and dialect, there is a tendency to use 'bayna' (*between*) in most contexts of interlocation, in preference to 'wasta' (*among*), and this is transferred into English as a constraint on the acquisition of *among*.

In the ETT 'bayna' (*between*) was used to translate *among* in two items (Appendix 4: 3, 7).

(3) There is a village among these hills.

(7) I saw him among the crowd.

The responses for these two included 90 uses of 'bayna' (*between*) and 32 uses of 'wasta' (*among*), or 54% and 19% of all responses respectively. This is further evidence of the preference for 'bayna' in Arabic, and consequently for *between* in English, leading to a failure to acquire *among* as distinct in meaning from *between*.

6.4.4 Hypothesis 4

H₀ Arab learners will not tend to omit spatial prepositions in English where there is no preposition in the equivalent Arabic context.

H₄ Arab learners will tend to omit spatial prepositions in English where there is no preposition in the equivalent Arabic context.

While prepositions are often not required in Arabic where they would be in the equivalent context in English, this omission does not cause the sentence in Arabic to lose meaning. However this encourages Arab learners of English to omit English prepositions. Kayed (1985) observes that the deletion of English prepositions might be explained as an instance of Arabic interference. Al-Sayed (1982) also maintains that Arab learners of English omit English prepositions in certain situations because of the influence of omission in Arabic. Examples of the omission of English directional and temporal prepositions are instances of probable Arabic interference in learning English prepositions. Arab learners tend to omit the prepositions *for* and *of* because they are not required in certain Arabic situations, as in:

The omission of *for*:

sakantu fi landani shahrayn. (Arabic)

I lived in London two months.

The omission of *of*:

fi bidayati al-sanati al-thanyati. (Arabic)

In the beginning the second Year

This leads us to assess the influence of the Arabic language in learning English spatial prepositions by examining the above hypothesis.

The result of the analysis of the data reveals that only the Arabic translation test (ATT) (Table 4, Ch. Five) indicates the existence of such omission, and not to a very significant degree.

In the ATT, Arab learners committed two types of error in the use of the English spatial preposition *in*; one is the substitution of *in* with the directional preposition *to*, because of the influence of the Standard Arabic, as explained above (6.4.1), e.g.:

wasala ila landan

he arrived to London

The other type of error is omission: Arab learners of English omit the preposition *in* because its equivalent in Arabic, the preposition 'fi', is not required in some Arabic sentences. For example spatial omission of *in*:

sakana omaru landan

Omar lived London

temporal omission of *in*:

wasala ali al-saa'ti al-thaminah

Ali arrived eight o'clock

The analysis of the ATT shows that most of the errors committed in the use of the preposition *in* are either substitution or omission errors, due to Arabic interference (see Appendix 3). For example, substitution occurs in:

The president arrived to Riyadh yesterday. (in)

and omission in:

My friend lives Egypt. (in)

The data of this study did not, in general, provide enough evidence of omission in the use of the investigated spatial prepositions to reject the null hypothesis (see Table 4.1, Ch. Five).

6.4.5 Hypothesis 5

H₀ Arab learners will **not** tend to use English spatial prepositions incorrectly in contexts where their use is different from the use of their counterparts in Arabic.

H₅ Arab learners will tend to use English spatial prepositions incorrectly in contexts where their use is different from the use of their counterparts in Arabic.

This hypothesis proposes that as a result of L1 interference there will be contexts in which the Arabic preposition or locative adverb will be translated directly into English, even in cases where the resulting translation is not correct English usage. This is a different claim from that proposed in hypotheses 1, 2 and 3. In those cases it was proposed that the English error was due to an Arabic term which had two counterparts in English. In this case it is proposed that a particular usage or expression in Arabic will be directly translated. The correct English item is considered to be a counterpart of the Arabic in usage but not in meaning. For example

yadrusu salihun 'fawqa' maktabihi

would be correctly translated as

Saleh is studying *at* his desk.

This shows that 'fawqa' is used in Arabic where English uses *at*. This leads Arab learners to make the following error of translation:

Saleh is studying *above* his desk.

Since 'fawqa' is the primary counterpart of *above*, and only a weak secondary counterpart of *at*.

The analysis of results presented in Chapter Five that errors in the use of English spatial prepositions in the sense indicated above is significant in all tests except the ETT.

In the FBT item (7):

(7) They will wait for you the lobby of the library.

English would allow *in*, or perhaps *outside*, but Arabic will allow 'khalfa' or 'warā' (*behind*) and 'amāma' (*in front of*) in addition to 'fī' (*in*), and this led the Arab subjects to use *in front of* or *behind* 21 times for this item, 38% of the 53 errors and 25% of the total number of responses. This is a clear example of Arabic usage being directly transferred into English.

Other examples include:

1. *Above* ('fawqa') for *on*

as in the FBT:

(18) Cairo is the River Nile.

'fawqa' is used in dialectal Arabic in this context and leads to the subjects use of *above*, 3 times. This occurs also in the ATT:

(10) Taqàu al-Qāhiratu 'alā nahri al nili.

(Cairo is situated on the River Nile).

where the Arab subjects used *above* in place of *on* 4 times.

Also in the PT:

(9) The TV set this table is very small.

the Arab subjects used *above* when the picture shows *on* (3 times).

2. *On for above*

In the ATT:

(18) Àllaqa al-lawhata 'fawqa' surati walidihi.

(He hung the painting above his father's picture).

on is used in place of *above* due to the acceptable dialect use of 'fawqa' to mean *on*, as noted above.

3. To for in

In the ATT:

(7) Wasala al-ra'isu al-Riyadh.

(The president arrived in Riyadh yesterday.)

To was used for *in* 37 times in 64 errors, with only 19 uses of *in*. This is due to the Arabic "wasala ila Riyadh" = He arrived to Riyadh, which is an acceptable alternative to "wasila Riyadh".

4. On for at:

In the FBT (9):

(9) The children are sitting the desk, doing their homework.

The subjects used *on* 41 times for this item, and *at* 27 times. The Arabic uses 'alā' (*on*) in this context, causing the Arab learners, translating directly from Arabic usage, to use *on* where *at* is required in English.

5. In for on

In the ATT(20):

Hunaka ghaymatun 'fi' al ufuqi

(There is a cloud on the horizon.)

was translated as " ... *in* the horizon" in 57 responses, with only 8 responses of *on*. This is directly due to the Arabic usage of "... fi al ufoqi", literally " ... *in* the horizon".

To conclude, the examples, found in the data, stated above in support of Hypothesis Five provide evidence of L1 interference.

CHAPTER SEVEN

SUMMARY, EVALUATION AND CONCLUSIONS

7.1 Introduction

This chapter will present a summary of the aims of this study and the structure and content of each chapter in turn. This is followed by a discussion of the conclusions which can be drawn from the research results. The next section reviews a number of broader issues arising from the work of this study.

7.2 Summary

The aim of this thesis has been to examine the errors in the use of English spatial prepositions made by Arab learners, and in particular to determine if and to what extent the first language of Arab learners

interferes with their acquisition of English spatial prepositions. To this end, Chapter One provides an introduction to the study and includes: a brief overview of second language acquisition, a statement of the hypotheses to be assessed, a summary of the scope and plan of the study, a discussion of the Arabic language and its variations, and an assessment of the importance of English as a foreign/second language in Saudi Arabia and the Arab speaking world in general.

Chapter Two comprises a review of theories of first, and particularly second language acquisition. The theories of contrastive analysis and error analysis are summarised and discussed, with particular reference to the key concepts of 'language transfer' and 'interlanguage'.

Chapter Three provides an exposition of the meanings and uses of spatial prepositions in English and of spatial prepositions and locative adverbs in Arabic. These are the lexical items which form the focus of this study, and an understanding of the similarities and differences between English and Arabic locatives is the basis on which an evaluation of potential and actual interference can be constructed in Chapter Six.

Chapter Four reviews the research methodology and the instruments (tests) which will be used to gather data on Arab learners' errors in the use of English spatial prepositions. There is also an explanation of the methods of statistical analysis used to derive significant generalisations from the data provided by the instruments.

Chapter Five presents the results of the tests in the form of graphs and tables, and the statistical analysis of the results, together with brief explanations and clarifications.

Chapter Six forms the central element of the study, and is divided into two parts. Firstly there is a detailed discussion of the test results, together with an explanation of unexpected or anomalous findings, and an evaluation of results in terms of the relative difficulty experienced by the subjects both in the different prepositions and in the different tests, as apparent from the test data. Themes arising from the test results are discussed, including a discussion of the concept of an 'acquisition order' for the English spatial prepositions of this study.

The second half of Chapter Six begins with a discussion of terms, including 'counterpart', 'transfer', and 'interference', in order to clarify the purpose and intention of the five hypotheses under examination. There is also a discussion of what form of argument might be needed to support a conclusion that interference, as defined, has been a cause of error, and a preliminary exposition of Arabic/English counterparts and the errors expected as a result of the difference between Arabic and English meaning and use.

The chapter concludes with a detailed discussion and evaluation of each of the five hypotheses of this study:

- H₁ Standard Arabic will interfere with Arab Learners' acquisition of English spatial prepositions.

- H₂ Arabic dialects will interfere in Arab learners' acquisition of English spatial prepositions.

- H₃ Arab learners will tend to have difficulty determining which English spatial preposition is appropriate in contexts where there is a shared counterpart in Arabic.
- H₄ Arab learners will tend to omit spatial prepositions in English where there is no preposition in the equivalent Arabic context.
- H₅ Arab learners will tend to use English spatial prepositions incorrectly in contexts where their use is different from the use of their counterpart in Arabic.

Finally, Chapter Seven, this chapter, presents a summary, evaluation and conclusion.

7.3 Evaluation

In the analysis of results and evaluation of the hypotheses in Chapter Six, clear evidence was found of L1 (Arabic) interference in the acquisition of English spatial prepositions by Arab learners.

The nature of interference, or 'negative transfer', was discussed in Section 6.3, and it was concluded that for the purposes of this study, this notion would be interpreted as referring to a constraint on the formation of rules for the use of English spatial prepositions in the emerging interlanguage of the Arab learners. The constraints operate when a L1 rule is adopted into the interlanguage and is accepted, if only temporarily, as sufficient for the generation of a relevant set of utterances in the second language. Once this adoption has taken place there is a

constraint on further hypothesis testing for this rule, since in the developing internal grammar of the L2, the interlanguage, the need for a rule in this area has been satisfied. When the rule is found to be inadequate, a process of revision is indicated and this may or may not lift the constraint on further rule development. In cases where there is some extrinsic reason for not making changes to the existing interlanguage rule, for example the produced errors are held to be unimportant, the constraint on new rule formation may not be lifted, resulting in "fossilisation".

An example of this process suggested by the results of the tests conducted in this study, is that of the rule formation for *between* and *among* in the interlanguage of Arab learners. The process seems to take the following (idealised) route:

- 1) The student learns that 'bayna' usually means *between* in English, but may also mean *among*. The student learns that 'wasta' means *among*.
- 2) The student adopts the Arabic rules for the use of 'bayna' and 'wasta' into his or her English interlanguage.
- 3) The student hypothesising that in English, as in Arabic, knowledge of 'bayna' = *between* is sufficient to express interlocation, ceases to seek further clarification of the way in which English expresses interlocation, particularly the specific use of *among*, and rules for *among* are not adopted into the interlanguage.

- 4) The student produces the utterance "He is *between* the crowd" as a translation of "Huwa 'bayna' al-zihami", failing to distinguish *among* from *between*, and failing to use *among* since the rule for *among* has not been adopted (see 3 above).

At this point we would say that Arabic has "interfered" with the acquisition of *among*, and led to the over use of *between* as a reflection of Arabic usage of 'bayna'.

If the error in 4) is noted and fed back into the interlanguage a rule change may be prompted.

Both Standard and dialectal Arabic were found to interfere in this way in the acquisition of English spatial prepositions. It was found in the analysis of H₁ that Standard Arabic usage interfered in English acquisition and production in the case of the substitution of:

On for *at*

In for *at*

Between for *among*

Under for *below*

In the analysis of H₂, dialectal Arabic was found to interfere in the English acquisition and production in the case of the substitution of:

On for at

In for at

In for on

Near and beside for at

From for above

In for among

On and at for in front of

In the analysis of H₃, Standard and dialectal Arabic interference resulted in difficulty for the Arab learners in determining which English spatial preposition was appropriate in a context where there was a shared primary counterpart in Arabic, in the following cases:

In and at

Over and above

Under and below

Between and among

The analysis of H₄ revealed some evidence of interference from Arabic causing the omission of a preposition in English, as for example in ATT (14):

My friend lives Egypt (Appendix 3).

Finally the analysis of results pertaining to H₅ revealed evidence of Arabic interference resulting in incorrect use of English prepositions as a reflection of the use of their counterparts in Arabic. The following incorrect uses were significant:

On for above

To for in

On for at

In for on

In all of the above claims for the existence of interference, the supporting evidence is examined in detail in the relevant sections of Chapter Six and need not be repeated here.

The question which now arises is, having found evidence of Arabic interference, how significant is this interference as a cause of the errors recorded in the results of the tests which form the instrument of this study? This will be addressed below as one of the broader issues arising from this research.

7.4 Conclusion

Other researchers in the field of SLA have reported on the degree of influence that a learner's first language was found to have on second

language acquisition as deduced from analysis of errors. Ellis (1985:29) provides the following table:

Table 7.4.1

Percentage of interference errors reported by various L2 studies of English.

<i>Study</i>	<i>% of interference errors</i>	<i>Type of learner</i>
Grauberg (1971)	36%	First language German - adult, advanced
George (1972)	33% (approx)	Mixed first languages - adult, graduate
Dulay and Burt (1973)	3%	First language Spanish - children, mixed level
Tran-Chi-Chau (1974)	51%	First language Chinese - adult, mixed level
Mukattash (1977)	23%	First language Arabic - adult
Flick (1980)	31%	First language Spanish - adult, mixed level
Lott (1983)	50% (approx)	First language Italian - adult, university

Another finding is that of Sheen (1980) who attributes 79% of errors to L1 interference.

The results of the present study, conflating all tests and years, give a figure of 48% of errors due to L1 interference, which is broadly consistent with the figures of other researchers.

One important observation to make about the above findings is that no mention is yet made of the linguistic domain in which L1 interference was detected. It is the view of this writer that different areas of language will exhibit different degrees of L1 interference. Broadly speaking we might expect to find a high and unambiguous degree of interference on the phonological level, the 'foreign accent' so universally observed in L2 speakers. In syntax there have been studies of English relative clause formation and the use of passives, which are two areas in which L1 interference is almost certainly explicit. This study, focusing on spatial prepositions, falls into the domain of semantics and pragmatics, and is correspondingly difficult to analyse and quantify with precision, since errors in this domain can be relatively problematic to define.

Within the tightly specified domain of spatial prepositions it is the position of this study that detection of L1 interference has not been overly problematic, and interference appears to be the single main source of error.

This naturally leads into an evaluation of the use and usefulness of contrastive analysis in this study and in general. Here again semantics would seem to be the most difficult area in which to compare and contrast two languages.

This study makes use of a contrastive analysis of Arabic and English, with reference to ten English and fourteen Arabic lexical items, a very

limited field when taking into account that only the spatial uses of the prepositions were considered. This analysis took essentially two forms, one *a priori* and the other *a posteriori*. The first analysis was able to compare the meanings of different Arabic and English locatives, and to make some predictions on that basis of errors that were thought likely to occur. The second analysis took place during the interpretation of test responses, and was able to explain, after the event, certain errors which occurred due to the different uses to which prepositions are put in Arabic and English. Thus both "strong" and "weak" forms of CA, as discussed in Chapter Two, were used in this instance. The "weak" analysis was found to comprise explanations of errors which, although in principle predictable, were in practice difficult to anticipate due to their infrequent and idiosyncratic character. Consequently, although CA was useful in this study to evaluate the sources of errors, this was due to the very limited field of research; it would be difficult to extend this analysis to a larger domain, for example *all* prepositions and uses.

A further comment on the use of CA in this study is that the author is not thereby committed to a view of interference in behaviourist terms. The mechanical transfer of habits from Arabic to English is not suggested, only that differences between the two languages will be areas of uncertainty and hence potential error. The effect of L1 in constraining rule formation in the interlanguage of Arab learners of English is explained in terms of L1 meaning and usage, but the hypothesis testing process proposed by Schachter (1983) which allows a positive interpretation of errors is not incompatible with the model of interference tentatively proposed above.

This revised view of CA owes much to work in the field of Error Analysis and its objections to the over-simplified behaviourist model of language acquisition and the inflated claims of the proponents of a 'strong' view of CA, which suggest that up to 100% of errors in L2 production are due to L1 interference.

Having accepted a relatively "weak" version of CA for the purposes of this study, it remains to address the question of what, if any, use CA has in a pedagogic context. It could certainly be claimed, on the basis of this study, that specific areas of language could be investigated using CA and the resulting predictions used in the construction of an ESL curriculum. However, this usefulness would vary between different areas of the syllabus, and although, for example, as mentioned above, work in phonology would be assisted by targeting aspects of difference between the L1 and English, these aspects might easily be determined a posteriori from the results of a diagnostic test, and the *cause* of errors would be largely irrelevant to the teaching of English phonology. This criticism of the usefulness of CA, that the source of errors is not relevant once the errors have been detected, could be generalised to all areas of the curriculum. The usefulness of CA is then restricted to predicting errors *a priori* which may be appropriate in theoretical studies but is of little practical value in language teaching.

Appendix 1

Fill in the blank with one of the following prepositions:

ABOVE, AMONG, AT, BEHIND, BELOW, BETWEEN, IN FRONT OF, IN, ON, UNDER.

1. They are often home early in the evening.
2. We live on the first floor and John lives us on the third floor.
3. There is a crack the ceiling.
4. He arrived the United Kingdom last week.
5. His coat is quite long. It comes his knees.
6. She spends too many hours the TV screen.
7. They will wait for you the lobby of the library.
8. It's freezing! The temperature must be zero.
9. The children are sitting the desk, doing their homework.
10. The house stands on a hill which is about 50 feet the valley level.
11. The policeman could not see the criminal, he was standing the wall.
12. The cat was hiding the table.
13. Was Mr. Wood in the meeting? No, he was not the attendants.
14. Adel was sitting me in the mosque; he always likes to sit in the front line.
15. The final competition is those two athletes.
16. There's someone the front door; I heard the bell ring.

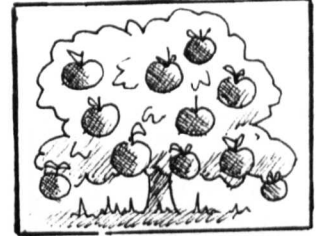
Appendix 1

17. The doctor asked Sarah to stay bed for a couple of days.
18. Cairo is the River Nile .
19. The river flows two mountains.
20. The castle stands the trees.
21. There is a red label the bottle.
22. I found my brother's pen my bed with some other missing books.
23. Bill looked over his shoulder at the student him.
24. The tourists stopped on the bridge to look at the river them.
25. Some fancy restaurants have partitions each booth for the customers' privacy.
26. He is many who need help.
27. The boy was hiding a big rock.
28. They were flying higher than the clouds, about 200 feet them.
29. I could not see the speaker, there was a fat man sitting me.
30. The young girl is lying the branches of the tree.

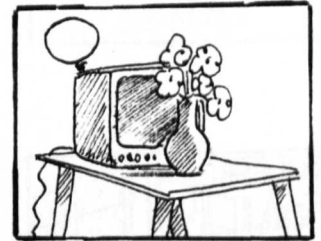
Appendix 2

In the following test, each QUESTION consists of a picture and incomplete sentence. COMPLETE the sentence with one preposition (word or phrase) which you think will fit the picture the best.

1. There are many apples the tree.



2. There is a vase the TV set.



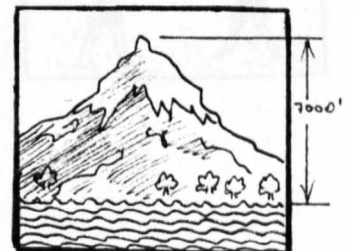
3. John is hiding his face the bed cover.



4. John's cat is sitting the horse.

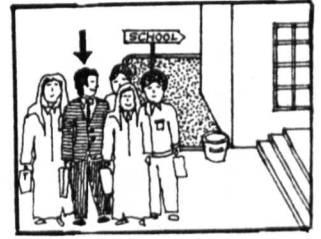


5. The mountain peak is seven thousand feet sea level.



Appendix 2

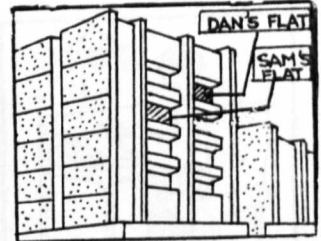
6. The student is standing his friends.



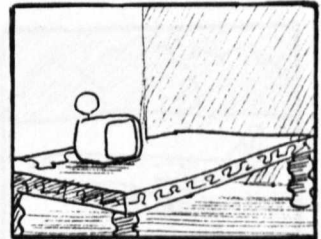
7. Jeff, See who's the door, please.



8. Dan lives on the fourth floor and Sam lives him on the third floor.



9. The TV set this table is very small and does not match it.



10. The primitive hunters are aiming at the birds them with their arrows.



Appendix 2

11. There is a bird hiding the tree.



12. Tony is holding a bunch of flowers him.



13. John was studying his desk all night, he must have a test.



14. The airplane is flying the clouds.

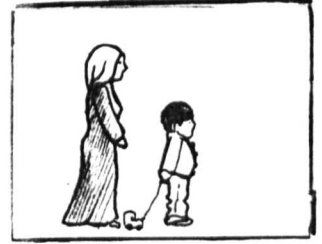


15. The car which is the house and the tree is my father's.

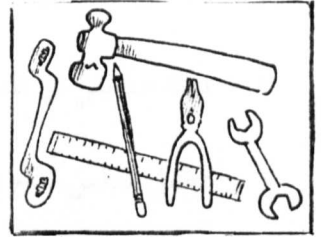


Appendix 2

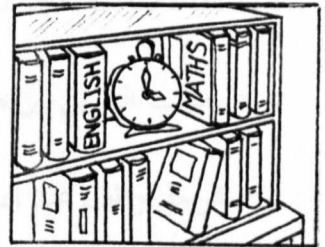
16. Nancy's son is standing her.



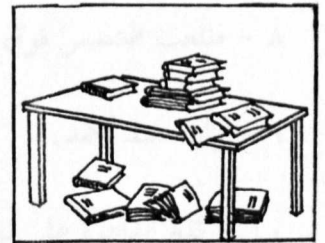
17. Do you know who put my pencil those tools.



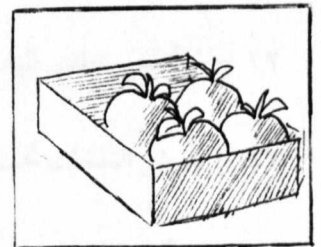
18. Do you know where the alarm clock is?
Yes, Jeff put it the maths and
the english books on the table.



19. Oh, No! Somebody threw these
books the table.



20. There are four apples the box.



Appendix 3

بسم الله الرحمن الرحيم

ترجم الجُمْل التالفة إلى اللغة الأنجلزفة مستخدماً نموذج الإجابة المرفق:

١ - قابلة صدفق في المطار.

٢ - الطفل جالس قدام الحافلة.

٣ - وضع الطالب كتابه في الحقففة.

٤ - الفتاة جالسة تحت الشجرة.

٥ - يصعب التفرفق بفن هذفن اللاعبفن.

٦ - الرجل واقف عند النافذة.

٧ - وصل الرئفس الرفاض.

٨ - طلعت الشمس فوق الأفق.

٩ - رأفته عند أحمد.

١٠ - تقع القاهرة على نهر النيل.

١١ - ترك الولد حذائه أمام المنزل.

١٢ - لاتفلس خلف الباب.

١٣ - ففش السمك تحت سطح.

١٤ - فسكن صدفقف مصر.

Appendix 3

- ١٥ - نسيت قلمي على الطاولة.
- ١٦ - الطفلة جالسة وسط زميلاتها.
- ١٧ - درجة الحرارة تحت درجة التجمد.
- ١٨ - علّق اللوحة فوق صورة والده.
- ١٩ - جلس الولد بين أبيه وأمه.
- ٢٠ - هناك غيمة في الأفق.
- ٢١ - قابلته أمام المدرسة.
- ٢٢ - رأيتَه وسط الزحام.
- ٢٣ - يسكن صالح تحت عليّ في الطابق الأول.
- ٢٤ - وضعت الحقيبة تحت السرير.
- ٢٥ - أوقف عليّ سيارته خلف الحافلة.
- ٢٦ - هل أكتب اسمي تحت السطر؟
- ٢٧ - تطير الطائرة فوق السحاب.
- ٢٨ - اقتسم الطلاب التفاحة بينهم.
- ٢٩ - تقع الحديقة وراء البيت.
- ٣٠ - توقف القطار بين الدمام والرياض.

Appendix 3

Answer Sheet

Student Information:

Name (optional)

Your city, town, or village (in Arabic)

Level (year)

Answers

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

Appendix 3

16	.....
17	.....
18	.....
19	.....
20	.....
21	.....
22	.....
23	.....
24	.....
25	.....
26	.....
27	.....
28	.....
29	.....
30	.....

Appendix 4

Translation

Translate the following English sentences into **meaningful Arabic sentences**, using the enclosed answer sheet.

1. He arrived at the meeting before seven p.m.
2. A hawk circled below the clouds.
3. There's a village among these hills.
4. The oranges were divided between the two boys.
5. He is at Sally's house.
6. The Dead Sea is below sea level.
7. I saw him among the crowd.
8. She is studying at her desk.
9. Choose between those two horses if you want a good leader.
10. When the sun sets, it goes below the horizon.
11. The Red Sea is between Asia and Africa.
12. Sheffield is among the largest industrial towns in England.
13. Her evening dress hung in the cupboard.
14. The cat was under the table.
15. The sun was behind the clouds.
16. The sun was above the horizon.
17. He is standing in front of the bus.
18. He is working in the office.
19. The children are playing under the tree.
20. The picture is hanging on the wall.
21. She stays close behind her big brother.
22. Jeff was born in a small town.

Appendix 4

23. The water came above their knees.
24. Chicago is a big city on Lake Michigan.
25. There are some trees in front of the house.
26. He parked his car in front of Mary's house.
27. The temperature has been above average recently.
28. The boy is wearing a white shirt under his blue coat.
29. She left her pen on the desk.
30. He drove the car behind the fence.

Appendix 4

Answer Sheet

Student Information:

Name (optional)

Your city, town, or village (in Arabic)

Level (year)

Answers

- ١
- ٢
- ٣
- ٤
- ٥
- ٦
- ٧
- ٨
- ٩
- ١٠
- ٢٠
- ٢١
- ٢٢
- ٢٣

Appendix 4

.....	24
.....	20
.....	27
.....	27
.....	28
.....	29
.....	30

Appendix 5

Composition

Write a composition on ONE of the following topics.

The composition should be between 150 and 200 words long. Some words are listed below to help you. However, you are expected to add your own.

TOPIC 1

People enjoy travelling or camping in their free time. National parks have become very popular to many tourists. Describe an outing or camping trip you had with your friends to any of the national parks and/or cities in Kingdom of Saudi Arabia.

beach	highway	overnight	tent
bridge	hike	play	trees
drive	hotel	shopping	valley
food	meet	sleep	vans/cars
foot path	mountains	sleeping bag	fire

TOPIC 2

Every human being has or will have experienced good or bad times in his/her life. Since you are a student at the university, compare your life at the university with your life at the school in your hometown.

bus	flat	live	roommate
dormitory	friends	lonely	schedule
eat	house	major	sport
family	independent	privacy	tests
first floor	library	recreation	neighbours

Appendix 5

Answer Sheet

Student Information:

Name (optional)

Your city, town, or village (in Arabic)

Level (year)

Composition

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

Bibliography

- Abbott, G. (1980). Towards A More Rigorous Analysis of Foreign Language Errors. IRAL, 18(2), 121-133.
- Abkarian, G. G. (1982). Comprehension of Deictic Locatives: The Object "Behind" It. Journal of Psycholinguistic Research, 11(3), 229-245.
- Abkarian, G. G. (1983). More Negative Findings for Positive Prepositions. Journal of Child Language, 10, 415-429.
- Aboud, P. F. (1964). The Syntax of Najdi Arabic. Austin: The University of Texas.
- Al-Najjar, B. (1984) The Syntax And Semantics of Verbal Aspect in Kuwaiti Arabic. PhD, the University of Utah.
- Al-sayed, A. M. (1982) An investigation into the Syntactic Errors of Saudi Freshmen's English Preposition. PhD, Indiana University.
- Al-Syuti, J. ((d.911h)1977). Hamià Al-Hawamià fí Sharhi Jmià Al-Jawamià. In A. S. Mokarram (Ed.), (Vol. 3), Kuwait: Dar Al-bohuthi Al-elmiati.
- Anderman, G. (1985). Linguistics and Modern Language Teaching : A Typological Approach. IRAL, 23(1).

- Anderson, J. M. (1971). THE GRAMMAR OF CASE: Towards a Localistic Theory. Cambridge: Cambridge University Press.
- Ard, J., & Homburg, T. (1983). Verification of Language Transfer. In S. M. Gass & L. Selinker (Eds.), Language Transfer In Language Learning. Rowley, Mass.: Newbury House Publishers, Inc.
- Bar-Adon, A. (1971). Child language: a book of readings. Englewood Cliffs: Prentice-Hall.
- Bavin, E. L. (1990). Locative Terms and Warlpiri Acquisition. Journal of Child Language, 17, 43-66.
- Beeston, A. F. L. (1970). The Arabic Language Today. London: Hutchinson & Co Ltd.
- Benathy, B., Trager, E., & Waddle, C. (1966). The Use of Contrastive Data in Foreign Language Course Development. In A. Valdman (Ed.), Trends in Language Teaching (pp. 35-56). New York: MacGraw-Hill.
- Bennett, D. (1975). Spatial and Temporal uses of English Prepositions: An Essay in Stratificational Semantics. London: Longman.
- Bhatia, A. T. (1974). An Error Analysis of Students' Composition. IRAL, 12(4), 337-350.
- Bialek, N., Madden, C., & Krashen, S. (1974). Is there a 'natural Sequence' in adult Second Language Learning? Language Learning, 24, 235-243.
- Bialystok, E., & Sharwood Smith, M. (1985). Interlanguage is not a State of Mind: An evaluation of the construct for second-language acquisition. Applied Linguistics, 6(2), 101-117.

- Blau, J. (1976). Observations of Syntactic Trends in Modern Standard Arabic. Iosg, Tel Aviv, 158-190.
- Bley-Vroman, R. (1983). The Comparative Fallacy in Interlanguage Studies: The case of Systematicity. Language Learning, 33(1), 1-17.
- Bloom, L. (Ed.). (1978). Readings in Language Development. New York: John Wiley & Sons.
- Bogges, L. C. (1978) Computational Interpretation of English Spatial Prepositions. PhD, University of Illinois, Urbana.
- Bourenane, K. (1984) English Learning In Algeria; An Analysis of Errors and Attitudes (ESL). PhD, University of Texas.
- Broselow, E. (1988). An Investigation of Transfer in Second Language Phonology. In D. Nehls (Ed.), Interlanguage Studies. (Studies in Descriptive Linguistics). Heidelberg: Julius Groos Verlag.
- Brown, H. D. (1987). Principles of Language Learning and Teaching. Englewood Cliffs, New Jersey: Prentice-Hall, Inc.
- Brown, R. (1973). A First Language: The Early Stage. London: George Allen & Unwin Ltd.
- Bryant, D. J., Tversky, B., & Franklin, N. (1992). Internal and External Spatial Frameworks for Representing Described Scenes. Journal of Memory and Language, 31(1), 74-98.
- Buckingham, T. (1975). Helping Students Use Prepositions. English Language Forum, 111-113.
- Burt, M. K. (1975). Error Analysis in the Adult EFL Classroom. TESOL Quarterly, 9(1), 53-63.

- Burton-Roberts, N. (1986). Analysing Sentences. London: Longman.
- Buteau, M. F. (1975). Students' Errors and the Learning of French as a Second Language: A Pilot Study. In J. Schumann & N. Stenson (Eds.), New Frontiers In Second Language Learning. Rowley, Mass.: Newbury House Publishers, Inc.
- Campbell, R. N. (1986). Language acquisition and cognition. In P. Flecher & M. Garman (Eds.), Language Acquisition, Studies in First Language Development. Cambridge: Cambridge University Press.
- Chejne, A. (1969). The Arabic Language: Its Role in History. Minneapolis: University of Minnesota Press.
- Chomsky, N. (1957). Syntactic Structures. Mouton: The Hague.
- Chomsky, N. (1959). Review of Skinner's Verbal Behavior. Language, 35(1), 26-58.
- Chomsky, N. (1964). Current Issues in Linguistic Theory. The Hague: Mouton.
- Chomsky, N. (1965). Aspects of the Theory of Syntax. Cambridge, Mass.: MIT Press.
- Chomsky, N. (1966). Topics in the Theory of Generative Grammar. Mouton: The Hague.
- Clark, E. V. (1971). On the Acquisition of Meaning of before and after. Journal of Verbal Learning & Verbal Behavior, 10, 266-275.
- Clark, E. V. (1973). Non-linguistic Strategies and the Acquisition of Word Meanings. Cognition, 2(2), 161-182.

- Clark, E. V. (1979). On the Children's Acquisition of Antonyms in Two Semantic Fields. In E. V. Clark (Ed.), The Ontogenesis of Meaning. Wiesbaden, Akade: Verlag. Athenaion.
- Clark, H. H. (1973). Space, Time, Semantics and the Child. In T. E. Moore (Ed.), Cognitive Development and the Acquisition of Language. (pp. 28-63). New York: Academic Press.
- Clark, H. H. (1976). Semantics and Comprehension. The Hague: Mouton & Co. B. V. Publishers.
- Clark, H. H., & Clark, E. V. (1977). Psychology and Language: An Introduction to Psycholinguistics. New York: Harcourt Brace Jovanovich.
- Close, R. A. (1975). A Reference Grammar for Foreign Students of English. London: Longman.
- Cohen, A. D. (1980). Testing Language Ability in the Classroom. Rowley: Newbury House Publishers, Inc.
- Comrie, B., & Keenan, E. (1979). Noun Phrase Accessibility Revisited. Language, 55, 649-664.
- Conner, P. S., & Chopman, R. S. (1985). The Development of Locative Comprehension in Spanish. Journal of Child Language, 12(1), 109-123.
- Cook, V. (1973). Comparison of Language Development in Native Children and Foreign Adults. IRAL, 11, 13-28.
- Cook, V. (1991). Second Language Learning and Language Teaching. London: Edward Arnold.

- Cook, V. J. (1985). Chomsky's Universal Grammar and Second Language Learning. Applied Linguistics, 6(1), 2-18.
- Corder, S. P. (1967). The Significance of Learners' Errors. IRAL, 5, 161-170.
- Corder, S. P. (1971). Idiosyncratic Dialects and Error Analysis. IRAL, 6, 99-107.
- Corder, S. P. (1981). Error Analysis and Interlanguage. London: Oxford University Press.
- Correa-Beningfield, M. R. (1985) Prototype and Language Transfer: The Acquisition by Native Speakers of Spanish of Four English Prepositions of Location. PhD, Columbia University.
- Cox, M. V. (1979). Young Children's Understanding of 'in front of' and 'behind' in the Placement of Objects. Journal of Child Language, 6, 371-374.
- Cox, M. V., & Isard, S. (1990). Children's Deictic and Nondeictic Interpretations of Spatial Locatives in front of and behind. Journal of Child Language, 17, 481-488.
- Cuyckens, H. (1985). At: A typically English Preposition. Papers and Studies in Contrastive Linguistics, 19.
- Cuyckens, H. (1988). Spatial Prepositions in Cognitive Semantics. In W. Hüllen & R. Schulze (Eds.), Understanding the Lexicon: Meaning, Sense and World Knowledge in Lexicon Semantics. Tübingen: Niemeyer.
- Davies, A., Criper, C., & Howatt, A. P. R. (Eds.). (1984). Interlanguage. Edinburgh: Edinburgh University Press.

- Di Pietro, R. J. (1971). Language Structures in Contrast. Rowley, Mass.: Newbury House.
- Dirven, R. (1989). Space Prepositions. In R. Dirven & R. A. Geiger (Eds.), A User's Grammar of English: Word, Sentence, Text, Interaction (pp. 519-550). Frankfurt: Verlag Peter Lang.
- Douglas, D., & Selinker, L. (1985). Wrestling with 'Context' in Interlanguage Theory. Applied Linguistics, 6(2), 190-204.
- Dromi, E. (1979). More on the Acquisition of Locative Prepositions: An analysis of Hebrew Data. Journal of Child Language, 6(3).
- Dulay, H. C., & Burt, M. K. (1973). Should we Teach Children Syntax? Language Learning, 23(2), 245-258.
- Dulay, H. C., & Burt, M. K. (1974). You Can't Learn without Goofing. In J. C. Richards (Ed.), Error Analysis. London: Longman.
- Dulay, H. C., Burt, M. K., & Krashen, S. D. (1982). Language Two. Oxford: Oxford University Press.
- Dúskova, L. (1969). On Source of Errors in Foreign Language Learning. IRAL, 7(1), 11-36.
- Eckman, F. R. (1977). Markedness and the Contrastive Analysis Hypothesis. Language Learning, 27(2), 315-330.
- Eld, M. (1987). Al-Nahw Al-Musaffaa. Cairo: Maktabat-Al-Shabab.
- Ellis, R. (1982). The Origins of Interlanguage. Applied Linguistics, 3(3), 207-223.
- Ellis, R. (1985). Sources of Variability in Interlanguage. Applied Linguistics, 6(2), 118-131.

- Ellis, R. (1985). The L1 = L2 Hypothesis: A Reconsideration. System, 13(1), 9-24.
- Ellis, R. (1985). Understanding Second Language Acquisition. Oxford: Oxford University Press.
- Ellis, R. (1992). Second Language Acquisition and Language Pedagogy. Clevedon: Multilingual Matters.
- Ellis, R., & Roberts, C. (1987). Two Approaches for Investigating Second Language Acquisition. In R. Ellis (Ed.), Second Language Acquisition in Context (pp. 3-29). London: Prentice-Hall International.
- Ervin-Trip, S. M. (1974). Is Second Language Learning Like the First? TESOL Quarterly, 8(2), 111-129.
- Esser, J. (1980). Contrastive Analysis at Crossroads of Linguistics and Foreign Language Teaching. IRAL, 18(2), 181-191.
- Faerch, C., & Kasper, G. (1987). Perspectives on Language Transfer. Applied Linguistics, 8(2), 111-136.
- Felix, S. (1981). The Effects of Formal Instruction on Second Language, Language Acquisition. Language Learning, 31, 87-112.
- Ferguson, C. (1962). Problems of Teaching Languages with Diglossia. Monograph Series on Language and Linguistics, 15, 163-177.
- Ferguson, C. A. (1959). Diglossia. Word, 15, 325-340.
- Ferguson, C. A., & Huebner, T. (1991). Foreign Language Instruction and Second Language Acquisition Research in the United States. In K. DeBot, R. B. Ginsberg, & C. Kramsch (Eds.), Foreign

Language Research in Cross-Cultural Perspective. Amsterdam:
John Benjamins Publishing Company.

Fishman, J. A. (1966). Bilingual Sequences at the Societal Level. In C. J. Kreidler (Ed.), On Teaching English to Speakers of Other Languages, Series II. NCTE, Champaign, Illinois, 139-144.

Flynn, S. (1989). The Role of the Head-initial/Head Final Parameter in the Acquisition of English Relative Clauses by Adult Spanish and Japanese Speakers. In S. Gass & J. Schachter (Eds.), Linguistic Perspectives on Second Language Acquisition. Cambridge: Cambridge University Press.

Fries, C. (1945). Teaching and Learning English as a Foreign Language. Ann Arbor: University of Michigan Press.

Garnham, A. (1989). A Unified Theory of the Meaning of Some Spatial Relational Terms. Cognition, 31(1), 45-60.

Gass, S. (1980). An Investigation of Syntactic Transfer in Adult Second Language Learners. In R. C. Scarcella & S. D. Krashen (Eds.), Research in Second Language Acquisition. Rowley, Massachusetts: Newbury House Publishers, Inc.

Gass, S. (1984). A Review of Interlanguage Syntax: Language Transfer and Language Universal. Language Learning, 34(2), 115-131.

Gass, S. M. (1988). Integrating Research: A Framework for Second Language Studies. Applied Linguistics, 9(2), 198-216.

Gass, S. M., & Selinker, L. (Eds.), (1983). Language Transfer in Language Learning. Rowley, Mass.: Newbury House Publishers, Inc.

- George, H. V. (1972). Common Errors in Language Learning. Rowley, Mass.: Newbury House.
- Ghadessy, M. (1980). Implications of Error Analysis for Second/Foreign Language Acquisition. IRAL, 18(2), 93-104.
- Gibbs, D. A. (1990). Second Language Acquisition of Modal Auxiliaries Can, Could, May, and Might. Applied Linguistics, 11(3), 297-314.
- Goodluck, H. (1991). Language Acquisition: A Linguistic Introduction. Oxford: Basil Blackwell Ltd.
- Graham, C. R., & Belnap, R. K. (1988). The Acquisition of Lexical Boundaries in English by Native Speakers of Spanish. In D. Nehls (Ed.), Interlanguage Studies. (Studies in Descriptive Linguistics). Heidelberg: Julius Groos Verlag.
- Grammar, C. C. E. (1990). Expressing Manner and Place. In Collins Cobuild English Grammar, Based on the Cobuild Language Research Project at the University of Birmingham. London: Collins.
- Gregg, K. (1989). Linguistic Perspectives on Second Language Acquisition: What could they be, and where can we get some? In S. Gass & J. Schachter (Eds.), Adult Second Language Acquisition: Linguistic Perspectives. New York: Cambridge University Press.
- Grimm, H. (1975). On the Child's Acquisition of Semantic Structure Underlying the Wordfield of Prepositions. Language and Speech, 18, 97-119.

- Gunst, R. F., & Mason, R. L. (1980). Regression Analysis and its Applications: A Data-Oriented Approach. New York: Marcel Dekker, Inc.
- Gynan, S. N. (1984). Attitudes toward Interlanguage: What is the Object of Study? Modern Language Journal, 68(4), 315-321.
- Hakuta, K. (1976). A Case Study of a Japanese Child Learning English as a Second Language. Language Learning, 26(2), 321-351.
- Hakuta, K. (1978). A Report on the Development of Grammatical Morphemes in a Japanese Girl Learning English as a Second Language. In E. Hatch (Ed.), Second Language Acquisition: a Book of Readings. (pp. 132-147). Rowley, Mass.: Newbury House.
- Hakuta, K., & Cancino, H. (1977). Trends in Second Language Acquisition Research. Harvard Educational Review, 47(3), 294-315.
- Hall, E. J. (1982). Dictionary of Prepositions for Students of English. New York: Minerva Books, Ltd.
- Hammarberg, B. (1974). The insufficiency of Error Analysis. IRAL, 12(3), 185-192.
- Hanania, E. A., & Gradman, H. L. (1977). Acquisition of English Structures: A Case Study of an Adult Native Speaker of Arabic in an English-speaking Environment. Language Learning, 27(1), 75-91.
- Harley, B. (1980). Interlanguage Units and Their Relations. Interlanguage Studies Bulletin, 5, 3-30.

- Harris, D. P. (1969). Testing English as a Second Language. New York: McGraw-Hill Book Company.
- Harris, Z. (1954). Transfer Grammar. International Journal of American Linguistics, 20, 259-270.
- Hartford, B. (To appear). Prototype Semantics: the development of prepositional meanings in a second language. Australian Review of Applied Linguistics, 11(1).
- Hasan, A. (1973). Al-Nahw Al-Wafii. Cairo: Daar-Al-Maarif Bi-Misr.
- Hatch, E. (1980). Second Language Acquisition - Avoiding the Question. In S. W. Felix (Ed.), Second Language Development, Trends and Issues. Tübingen: Gunter Narr Verlag Tübingen.
- Hatch, E., & Farhady, H. (1982). Research Design and Statistics for Applied Linguistics. Rowley, Mass.: Newbury House Publishers, Inc.
- Heaton, J. B., & Stocks, J. P. (1966). Overseas Student's Companion to English Studies. London: Longman.
- Herskovits, A. (1986). Language Spatial Cognition. Cambridge: Cambridge University Press.
- Hill, C. (1978). Linguistic Representation of Spatial and Temporal Orientation. Proceedings of Berkeley Linguistic Society, 4, 524-538.
- Hill, L. A. (1968). Prepositions and Adverbial Particles. London: Oxford University Press.

- Holzman, M. (1981). Where is Under: From Memories of Instances to Abstract Featural Concepts. Journal of Psycholinguistic Research, 10(4), 421-439.
- Huddleston, R. (1984). Introduction to the Grammar of English. Cambridge: Cambridge University Press.
- Huebner, T. (1985). System and Variability in Interlanguage Syntax. Language Learning, 35(2), 141-163.
- Ibn-Hisham, A. J. a.-D. i. Y. ((d.761h) 1963). Qatr al-Nada wa Bal al-Sada. In M. Abdelhamid (Ed.), Cairo: Matba'at al-Sa'adah.
- Ibn-Hisham, A. J. a.-D. i. Y. ((d.761h) 1985). Awdah al-Masalik ila Alfiati ibn Malik. In M. Abdelhamid (Ed.), Beirut: Dar Ihia al-Olum.
- Ibn-Hisham, A. J. a.-D. i. Y. (1934). Sharh Shudhur al-Dhahab. In M. Abdelhamid (Ed.), Cairo:
- Ibrahim, A. A.-A. (1970). Al-Nahw Al-Wadhifi. Cairo: Daar Al-Ma'arif Bi-Misr.
- Ibrahim, M. H. (1977). Diglossia and Foreign Language Teaching. IRAL, 15(2), 158-163.
- Ijaz, H. I. (1985) Native Language and Cognitive Constraints on the Meaning Ascribed to Select English Spatial Prepositions by Advanced Adult Second Learners of English. PhD, University of Toronto.
- Ingram, D. (1989). First Language Acquisition: Method, Description, and Explanation. Cambridge: Cambridge University Press.
- Ioup, G., & Kruse, A. (1977). Interference Versus Structural complexity as a Predictor of Second Language Relative Clause acquisition.

In C. Henning (Ed.), Proceedings of Second Language Research Forum. Los Angeles.

Jakobovits, L. A. (1969). Second Language Learning and Transfer Theory: A Theoretical Assessment. Language Learning, 19, 55-86.

James, C. (1971). The Exculpation of Contrastive Linguistics. In G. Nickel (Ed.), Papers in Contrastive Linguistics. Cambridge: Cambridge University Press.

James, C. (1980). Contrastive Analysis. London: Longman.

James, J. (1977). Language Transfer Reconsidered. Interlanguage Studies Bulletin, 2, 7-21.

Jehani, N. M. (1985) Sociostylistic Stratification of Arabic in Makkah. PhD, the University of Michigan.

Johnson, S. (1975). The Uses of Error Analysis and Contrastive Analysis I and II. ELTJ, 29 (3 & 4), 247-253 & 303-337.

Johnston, J. (1985). Cognitive Prerequisites: the Evidence from Children Learning English. In D. I. Slobin (Ed.), The Crosslinguistic study of Language Acquisition: Theoretical Issues. Hillsdale, New Jersey: Lawrence Erlbaum Associates.

Johnston, J. R. (1984). Acquisition of Locative Meanings: behind and in front of. Journal of Child Language, 11, 407-422.

Johnston, J., & Slobin, D. (1979). The Development of Locative Expression in English, Italian, Serbo-Croatian, and Turkish. Journal of Child Language, 6, 529-545.

- Jordan, I. J. (1991). Portuguese of Spanish Speakers: A Case for Contrastive Analysis. Hispania, 74(3), 788-792.
- Jordens, P., & Kellerman, E. (1981). Investigations into the "TRANSFER STRATEGY" in Second Language Learning. In J.-G. Savard & L. Laforge (Eds.), Proceedings of the 5th Congress of L'Association Internationale De linguistique Appliquée, (pp. 195-215). Montréal: Les Presses De L'université Laval, Québec.
- Kayed, I. M. H. (1985) The Influence of Arabic Grammar on Edited and Non-edited English Used by Arabs. PhD, University of Missouri, Columbia.
- Keenan, E., & Comrie, B. (1977). Noun Phrase Accessibility and Universal Grammar. Linguistic Inquiry, 8, 63-99.
- Kellerman, E. (1977). Toward Characterization of Strategy of Transfer in Second Language Learning. Interlanguage Study Bulletin, 2(1), 58-145.
- Kellerman, E. (1979). Transfer and Non-Transfer: Where are We. Studies in Second Language Acquisition, 2(1), 37-57.
- Kerlinger, F. N. (1973). Foundation of Behavioral Research. London: William Clowes & Sons Limited.
- Khafaji, A. R. (1975). A Formal-Functional Approach for Contrastive Linguistics. ELT, 29(2), 90-95.
- Khampang, P. (1974). The Difficulties in Using English Prepositions. Language Learning, 24(2), 215-222.
- Klein, W. (1986). Second Language Acquisition. Cambridge: Cambridge University Press.

- Klein, W. (1990). A Theory of Language Acquisition Is not so Easy. Studies in Second Language Acquisition, 12(2), 219-231.
- Klein, W. (1991). SLA Theory: Prolegomena to a Theory of Language Acquisition and Implications for Theoretical Linguistics. In T. Huebner & C. Ferguson (Eds.), Crosscurrents in Second Language Acquisition and Linguistic Theories (pp. 169-194). Amsterdam: John Benjamins Publishing Company.
- Krashen, S. (1988). Second Language Acquisition and Second Language Learning. London: Prentice Hall International.
- Kreidler, C. W. (1966). English Prepositions. ELT Journal, 20(2).
- Kuczaj, S. A., & Maratsos, M. P. (1975). On the Acquisition of Front, Back and side. Child Development, 46, 202-210.
- Lado, R. (1957). Linguistics Across Cultures. Ann Arbor: The University of Michigan Press.
- Lado, R. (1961). Language Testing: the Construction and Use of Foreign Language Tests. New York: MacGraw-Hill Book Company.
- Landau, B., & Jackendoff, R. (1993). "What" and "Where" in Spatial Language and Spatial Cognition. Behavioral and Brain Sciences, 16(2), 217-265.
- Langcker, R. (1982). Space Grammar, Analyzability, and The English Passive. Language, 58, 22-80.
- Larsen-Freeman, D. (1975). The acquisition of Grammatical Morphemes by Adult ESL learners. Tesol Quarterly, 9, 409-420.
- Larsen-Freeman, D., & Long, M. H. (1991). An Introduction to Second Language Acquisition Research. London: Longman.

- Lee, W. R. (1968). Thoughts on Contrastive Linguistics in the Context of Language Teaching. In J. E. Alatis (Ed.), Report on the Nineteenth Annual Round Table meeting on Linguistics and Language Studies. (pp. 185-194). Washington, D.C.: Georgetown University Press.
- Leech, G., & Svartvik, J. (1975). A Communicative Grammar of English. London: Longman.
- Lehiste, I. (1988). Lectures on Language Contact. London: MIT Press.
- Lehn, W. and Slager, W. R. (1963). A Contrastive Study of Egyptian Arabic and American English: The Segmental Phonemes. Selected Articles from Language Learning. No. 2, Ann Arbor, Michigan: The Research Club in Language Learning, 110-118. Originally published in Language Learning, IX, 1-2, 1959.
- Lenneberg, E. H. (1967). Biological Foundations of Language. New York: John Wiley & Sons, Inc.
- Lentzner, K. R. (1977). Semantic And Syntactic Aspects of Arabic Prepositions. PhD, Georgetown University.
- Levin, M. (1975). A Cognitive Theory of Learning: Research in Hypothesis Testing. Hillsdale, N.J.: Lawrence Erlbaum Associates.
- Lightbown, P. M. (1984). Introduction to Series on Interlanguage Syntax. Language Learning, 34(2), 113-114.
- Lightbown, P. M. (1985). Great Expectations: Second-Language Acquisition Research and Classroom Teaching. Applied Linguistics, 6(2), 173-189.

- Lindkvist, K.-G. (1968). Studies on the Local Senses of the Prepositions In, At, On, and To in Modern English. Wiesbaden: Kraus-Thomson Organization Ltd.
- Lindkvist, K.-G. (1976). A comprehensive Study of Conceptions of Locality in which English Prepositions Occur. Stockholm: Almqvist and Wiksell International.
- Lott, D. (1983). Analysing and Counteracting Interference Errors. ELT Journal, 37(3), 256-261.
- Mack, J. L. (1981). The Comprehension of Locative Prepositions in Nonfluent and Fluent Aphasia. Brain and Language, 14(1), 81-92.
- Mackey, W. F. (1965). Language Teaching Analysis. London: Longman.
- McLaughlin, B. (1987). Theories of Second-Language Learning. London: Edward Arnold.
- Madsen, H. S. (1983). Techniques in Testing. Oxford: Oxford University Press.
- Markham, P. (1985). Contrastive Analysis and the Future of Second Language Education. System, 13(1), 25-29.
- Marton, W. (1972). Pedagogical Implications of Contrastive Studies. Studia Anglica Posnaniensia, 4, 115-125.
- Matthews-Bresky, R. J. H. (1972). Translation as a Testing Device. ELT Journal, 27, 58-66.
- Miller, J. (1985). Semantics and Syntax. Cambridge: Cambridge University Press.

- Mukattash, L. (1984). Contrastive Analysis and Adult EFL Learner. World Language Learning, 3(3), 178-182.
- Mukattash, L. (1985). Errors Made by Arab University Students in the Use of English Prepositions. Glottodidactica, 17, 47-64.
- Mukattash, L. (1988). Persistence of Fossilization. In D. Nehls (Ed.), Interlanguage Studies. (Studies in Descriptive Linguistics). Heidelberg: Julius Groos Verlag.
- Naser, A. K. (1983). Language Problems of Arab Students Learning English As a Second Language in Selected Universities in America. Ed.D, Oklahoma State University.
- Nasr, R. T. (1963). The Teaching of English to Arab Students. London: Longman.
- Nemser, W. (1971). Approximative Systems of Foreign Language Learners. IRAL, 9(2), 115-123.
- Nickel, G. (1971). Contrastive Linguistics and Foreign Language Teaching. In G. Nickel (Ed.), Papers in Contrastive Linguistics. Cambridge: Cambridge University Press.
- Nickel, G. (1989). Some Controversies in Present-Day Error Analysis: 'Contrastive' VS. 'Non-Contrastive' Errors. IRAL, 27(4), 293-305.
- Nixon, G. (1993). Patterns in English Syntax. Doncaster: The Language Press.
- Odlin, T. (1989). Language Transfer: Cross-linguistic influence in language learning. Cambridge: Cambridge University Press.
- Oller, J. W., Jr. (1979). Language Tests At School. London: Longman.

- Owens, R. E., Jr. (1984). Language Development : An Introduction. Columbus, OH.: Charles E. Merrill Publishing Company.
- Pavesi, M. (1987). Variability and Systematicity in the Acquisition of Spatial Prepositions. In R. Ellis (Ed.), Second Language Acquisition in Context. London: Prentice-Hall International.
- Peronard, M. (1985). Spanish Prepositions Introducing Adverbial Constructions. Journal of Child Language, 12, 95-108.
- Pittman, G. A. (1967). Activating the Use of Prepositions. London: Longman.
- Pittman, G. H. (1966). Activating the Use of English Prepositions. London: Longman.
- Quirk, R., Greenbaum, S., Leech, G. & Svartvik, J. (1985). A Comprehensive Grammar of the English Language. London: Longman.
- Radden, G. (1989). Figurative Use of Prepositions. In R. Dirven & R. A. Geiger (Eds.), A User's Grammar of English: Word, Sentence, Text, Interaction, (pp. 551-576). Frankfurt: Verlag Peter Lang.
- Richards, J. C. (1971). Error Analysis and Second Language Strategies. Language Sciences, 17, 12-22.
- Richards, J. C. (1972). Social Factors, Interlanguage, and Language Learning. Language Learning, 22(2), 159-188.
- Richards, J. C. (Ed.). (1974). Error Analysis: Perspectives on Second Language Acquisition. London: Longman.

- Richards, J. C., & Sampson, G. P. (1974). The Study of Learner English. In J. C. Richards (Ed.), Error Analysis: Perspectives on second Language Acquisition. London: Longman.
- Sa'adeddin, M. A. A. (1989). Text Development and Arabic-English Negative Interference. Applied Linguistics, 10(1), 36-51.
- Sampson, G. P. (1982). Converging Evidence for a Dialectal Model of Function and Form in Second Language Learning. Applied Linguistics, 3, 1-28.
- Schachter, J. (1974). An Error in Error Analysis. Language Learning, 24(2), 205-214.
- Schachter, J. (1990). On the issue of completeness in second language acquisition. Second Language Research, 6(2), 93-124.
- Schachter, J., & Celce-Murcia, M. (1977). Some Reservations concerning Error analysis. TESOL Quarterly, 11, 441-451.
- Schachter, J., Tyson, A. F., & Diffley, F. J. (1976). Learner Intuitions of Grammaticality. Language Learning, 26(1), 67-76.
- Schibsbye, K. (1970). A Modern English Grammar, with an Appendix on Semantically Related Prepositions. London: Oxford University Press.
- Schmidt, M. (1980). Coordinate Structures and Language Universals in Interlanguage. Language Learning, 30(2), 397-415.
- Schumann, J. H. (1986). Locative and Directional Expressions in Basilectal Speech. Language Learning, 36(3), 277-294.

- Schumann, J., & Stenson, N. (1975). Introduction. In J. Schumann & N. Stenson (Eds.), New Frontiers In Second Language Learning. Rowley, Mass.: Newbury House Publishers, Inc.
- Sciarone, A. G. (1970). Contrastive Analysis Possibilities and Limitations. IRAL, 8(2), 115-131.
- Scott, M. S. & Tucker, R. G. (1974). Error Analysis and English-Language Strategies of Arab Students. Language Learning, 24(1), 69-97.
- Selinker, L. (1969). Language Transfer. General Linguistics, 9(2), 67-92.
- Selinker, L. (1972). Interlanguage. IRAL, 10, pp. 209-230. Reprinted in J. C. Richards (Ed.), (1974), 31-54.
- Selinker, L. (1989). CA/EA/IL: The Earliest Experimental Record. IRAL, 27(4), 267-291.
- Selinker, L., & Gass, S. M. (Eds.). (1983). Language Transfer in Language Learning. Rowley, Mass.: Newbury House Publishers, Inc.
- Selinker, L., & Lamendella, J. T. (1981). Updating the Interlanguage Hypothesis. In J. G. Savard & L. Laforge (Eds.), Proceedings of the 5th Congress of L'Association Internationale De linguistique Appliquée, (pp. 402-424). Montréal: Les Presses De L'université Laval, Québec.
- Sheen, R. (1980). The Importance of Negative Transfer in Speech of Near-Bilinguals. IRAL, 18(2), 105-119.
- Sibawayh, A. I. U. (1966). El-Kitaab; Kittab Sibawayh. Cairo: Daar Al-ilm.
- Skinner, B. (1957). Verbal Behavior. New York: Appleton Century Crofts.

- Slobin, D. I. (1985). The Crosslinguistic Study of Language Acquisition, Theoretical Issues. New Jersey, Hillsdale: Lawrence Erlbaum.
- Snook, R. L. (1971). A Stratificational Approach to Contrastive Analysis. In G. Nickel (Ed.), Papers in Contrastive Linguistics. Cambridge: Cambridge University Press.
- Stenson, N. (1975). Induced Errors. In J. Schumann & N. Stenson (Eds.), New Frontiers In Second Language Learning. Rowley, Mass.: Newbury House Publishers, Inc.
- Stern, H. H. (1970). Perspectives on Second Language Teaching. Toronto: The Ontario Institute for Studies in Education.
- Stockman, I. J., & Vaughn-Cooke, F. (1992). Lexical Elaboration in Children's Locative Action Expressions. Child Development, 63(5), 1104-1125.
- Svartvik, J. (1988). English Prepositions in Applied Linguistics. In J. Klegraf & D. Nehls (Eds.), Essays on the English Language and Applied Linguistics on the Occasion of Gerhard Nickel's 60th Birthday. Heidelberg: Verlag Julius Groos.
- Svorou, S. (1988) The Experiential Basis of the Grammar of Space: Evidence from the Languages of the World. PhD, State University of New York at Buffalo.
- Takahashi, G. (1969). Prepositions of Space and Function of Certain English Prepositions. Language Learning, 19(3&4), 217-234.
- Tanaka, S. (1983) Language Transfer as a Constraint on Lexico-Semantic Development in Adults Learning a Second Language in Acquisition-poor Environments (Locatives, Japanese, English). Ed.D, Columbia University Teachers College.

- Tanz, C. (1980). Studies in the Acquisition of Deictic Terms. Cambridge: Cambridge University Press.
- Tarone, E. (1988). Variation in Interlanguage. London: Edward Arnold.
- Taylor, A. J. (1992). English Grammar. Edinburgh: W. & R. Chambers Ltd.
- Taylor, B. P. (1975). The Use of Overgeneralization and Transfer Learning Strategies by Elementary and Intermediate Students of ESL. Language Learning, 25(1), 73-107.
- Taylor, C. V. (1972). Why Throw Out Translation? ELT Journal, 27, 56-58.
- Taylor, C. V. (1976). Sources of Error in Foreign Language Teaching. ELTJ, 30(3), 191-195.
- Taylor, D. S. (1988). The Meaning and Use of the Term 'Competence' in Linguistics and Applied Linguistics. Applied Linguistics, 9(2), 148-168.
- Taylor, G. (1986). Errors and Explanations. Applied Linguistics, 7(2), 144-166.
- Telleen, S., & Wren, C. T. (1985). Acquisition of Prepositions of Language-delayed Preschoolers: Is Intervention effective? British Journal of Disorders of Communication, 20(3), 301-309.
- The Presidency of Islamic Researches, I, Call and Guidance (Ed.), (1990). THE HOLY QUR-'AN: English Translation of the Meanings and Commentary. Al-Madinah Al-Munawarah, Saudi Arabia: King Fahad Holy Qur-'an Printing Complex.

- Timm, J.-P. (1986). The Consistency of Interlanguage in Task-bound Second-language Production. Applied Linguistics, 7(1), 86-105.
- Tomasello, M. (1987). Learning To Use Prepositions: A Case Study. Journal of Child Language, 14, 79-98.
- Topping, D. (1964). Contrastive Analysis and Sandhi Alternations. Language Learning, 14 (3 & 4), 99-107.
- Traugott, E. (1975). Spatial Expressions of Tense and Temporal Sequencing: A Contribution to the Study of Semantic Fields. Semantica, 15(3), 207-230.
- Ullmann, S. (1967). Semantics: An Introduction to the Science of Meaning. Oxford: Basil Blackwell.
- Upshur, J. A. (1962). Language Proficiency Testing and the Contrastive Analysis Dilemma. Language Learning, 12(2), 123-127.
- Van Buren, P., & Sharwood-Smith, M. (1985). The acquisition of preposition stranding by second language learners and parametric variation. Second Language Research, 1(1), 18-46.
- Vanpanys, J. (1984). Source Metaphors in English. Journal of Pragmatics, 8(3).
- Wales, R. (1986). Deixis. In P. Fletcher & M. Garman (Eds.), Language Acquisition, Studies in First Language Development. Cambridge: Cambridge University Press.
- Wardhaugh, R. (1970). The Contrastive Analysis Hypothesis. Tesol Quarterly, 4, 123-129.

- Washington, D., & Naremore, R. (1978). Children's Use of Spatial Prepositions in Two and Three Dimensional Tasks. Journal of Speech and Hearing Research, 21, 151-165.
- Wehr, H. (1976). A Dictionary of Modern Written Arabic. In M. Cowan (Ed.), New York: Spoken Language Services, Inc.
- Weinreich, U. (1953). Languages in Contact: Findings and Problems. The Hague: Mouton.
- White, L. (1984). Universal Grammar as a Source of Explanation in Second Language Acquisition. In B. Wheatley, A. Hastings, F. R. Eckman, L. Bell, G. Krukar & R. Rutkowski (Eds.), Current Approaches to Second Language Acquisition, (pp. 43-68). University of Wisconsin-Milwaukee: IU Linguistics Club.
- Whitman, R. L. (1970). Contrastive Analysis: Problems and Procedures. Language Learning, 20(2), 191-197.
- Whitman, R. L., & Jackson, K. L. (1972). The Unpredictability of Contrastive Analysis. Language Learning, 22(1), 29-41.
- Wilcox, S., & Palermo, D. S. (1974). "in", "on", and "under" revisited. Cognition, 3(3), 245-254.
- Wilcox, S., & Palermo, D. S. (1982). Children's Use of Lexical and Non-lexical Information in Responding to Commands. Journal of Child Language, 9(1), 139-150.
- Wiss, B. G. (1976). A Theory of Parts of Speech in Arabic. Arabica, 23, 23-36.
- Ziadeh, F. J. and Winder, R. B (1957). An Introduction to Modern Arabic. London: Oxford University Press.

- Zobl, H. (1980). The Formal and Developmental Selectivity of L1 Influence on L2 Acquisition. Language Learning, 30(1), 43-57.
- Zobl, H. (1982). A Direction for Contrastive Analysis: The Comparative Study of Developmental Sequences. TESOL Quarterly, 16(2), 169-183.
- Zughoul, M. R. (1978). Lexical Interference of English in Eastern Province Saudi Arabic. Anthropological Linguistics, 20(5), 214-225.
- Zughoul, M. R. (1979). Teaching English Prepositions. English Teaching Forum, 17(3), 24-29.