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A

L1 Lexical, Morphological and Morphosyntactic Attrition in Greek-English Bilinguals

by

Linda A. Pelc

A dissertation submitted to the Graduate Faculty in Linguistics in partial fulfillment of the requirements for the Doctor of Philosophy, The City University of New York

2001

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Abstract

L1 Lexical, Morphological and Morphosyntactic Attrition in Greek-English Bilinguals

by

Linda A. Pelc

Adviser: Professor Gita Martohardjono

This study investigated first language attrition in Greek-English bilinguals. Three areas of attrition were identified and tested in grammaticality judgment tasks. They include the lexical, morpholexical and morphosyntactic domains of Greek. Rejection of Greek grammatical sentences and acceptance of English grammatical sentences characterize the attrited state of these bilinguals.

The first area of attrition involves metaphorical senses of *perno*, 'take,' and *spazo*, 'break.' These verbs were chosen for this study because of the wide range of senses or meanings associated with them. As predicted, metaphorical senses were found to be vulnerable to attrition.

Another form of lexical attrition comprises opaque expressions. This term is used to mean the class of idiomatic expressions that are particularly impervious to word-by-word analysis. The traditional meaning of idiom as a complex conventionalized unit which cannot be explained in terms of regular rule-governed syntactic or semantic restrictions is adopted here. As hypothesized, L2 opaque expressions were judged grammatical in the L1 attriters' native language.

Morpholexical attrition was found in the perception of gender in the noun phrase and in the perception of agreement of the constituents of the noun phrase across clauses. Most notably, ungrammatical, unmarked forms in Greek were judged grammatical by the participants in this study.

Case was investigated in the morphosyntactic domain. Similarly, Greek ungrammatical, unmarked forms, such as those of the accusative case, assigned to complements by most verbs, were judged grammatical.

Fifty-seven Greek-English bilinguals and twenty-one Greek monolingual were tested in all four areas. Results indicated that L2 use affects L1 competence in terms of metaphorical verb sense and opaque expressions. In addition, results showed that L1 marked morpholexical forms and morphosyntactic rules undergo leveling or regularization.

**For the children, Christopher, Annajean and Dina
May their journeys be full of adventure and knowledge.**

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“When you start on your journey to Ithaca,
then pray that the road is long,
full of adventure, full of knowledge ...”

Constantine P. Cavafy

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Table of Contents

Abstract	iv
Dedication	vi
Acknowledgements	vii
1. Introduction	1
1.1 Language Attrition: Definition	2
1.2 Language Attrition: Typology	3
1.2.1 Patholinguistic Loss	4
1.2.2 Sociolinguistic Loss	8
1.2.3 Psycholinguistic Loss	8
1.3 The Lexicon and Lexical Loss	10
1.4 Morphological Loss	10
1.4.1 Noun Paradigms in Modern Greek	11
1.4.2 The Definite Article	16
1.4.3 The Indefinite Article	17
1.4.4 The Adjective	18
1.4.5 The Pronoun	19
1.5 Language Change	21
1.6 Overview	22
2. Theoretical Background	24
2.1 Theoretical Framework of Language Attrition	25
2.2 Externally-induced Changes	26
2.3 Lexical Attrition	27
2.3.1 Metaphorical Verb Senses	32
2.3.2 Opaque Expressions	39
2.4 Internally-induced Changes	43
2.5 Markedness	45
2.5.1 Learnability and Markedness	46
2.5.2 Neurolinguistics and Markedness	46
2.5.3 Complexity in Markedness Theory	47
2.5.4 Frequency and Prevalence in Markedness Theory	48

2.6 Morphological Attrition	50
2.7 Production vs. Receptive Tasks	51
2.8 Grammaticalness	53

3. Hypotheses

3.1 The Perception of Verb Senses	56
3.1.1 Hyp. 1: Metaphorical Verb Senses (L1 ungr., L2 gr.)	57
3.1.2 Hyp. 2: Metaphorical Verb Senses (L1 ungr., L2 ungr.)	59
3.1.3 Hyp. 3: Metaphorical Verb Senses (L1 gr., L2 ungr.)	60
3.1.4 Hyp. 4: Metaphorical Verb Senses vs. Literal Verb Senses	60
3.2 Opaque Expressions	63
3.2.1 Hyp. 5: Opaque Expressions (L1 ungr., L2 gr.)	64
3.2.2 Hyp. 6: Opaque Expressions (L1 ungr., L2 ungr.)	64
3.2.3 Hyp. 7: Opaque Expressions (L1 gr., L2 ungr.)	66
3.3 Markedness in Greek Morphology	67
3.3.1 Hyp.8: Noun	69
3.3.2 Hyp. 9: Article	72
3.3.3 Hyp. 10: Noun-Adj. and Noun-Pro. Agreement	76
3.3.4 Hyp. 11: Case	79

4. Methodology

4.1 Background of the Experiment	81
4.2 Subjects	81
4.2.1 Experimental Group	81
4.2.2 Control Group	83
4.3 Test Type and Materials	84
4.3.1 Grammaticality Judgment	84
4.3.2 Materials	84
4.4 Procedures	85
4.4.1 Test: Part 1	85
4.4.2 Test: Part 2	86
4.4.3 Test: Part 3	87
4.5 Order of Presentation	88
4.6 Scoring	88
4.7 Questionnaire	88
4.7.1 Background	88
4.7.2 Types: experimental group and control group	89
4.8 Sociolinguistic Variables and the Questionnaires	90
4.8.1 Age of arrival in the U.S.	90
4.8.2 Length of Stay in the U.S.	91
4.8.3 Level of Education	91
4.8.4 Extent of Contact	92

4.8.5 Language Use	94
4.8.6 Language Dominance	94
4.8.7 Language Preference	95
5. Results	
5.1 Background	96
5.2.1 Hypothesis 1	97
5.2.2 Hypothesis 2	98
5.2.3 Hypothesis 3	99
5.2.4 Hypothesis 4	100
5.3.1 Hypothesis 5	103
5.3.2 Hypothesis 6	104
5.3.3 Hypothesis 7	105
5.4.1 Hypothesis 8	106
5.4.2 Hypothesis 9	107
5.4.3 Hypothesis 10	108
5.5.1 Hypothesis 11	109
5.6 Sociolinguistic Variables	110
6 Discussion	
6.1 Introduction	112
6.2 Attrition in the Lexicon	112
6.2.1 <i>Perno/Spazio</i> & Take/Break	115
6.2.2 Opaque Expressions	118
6.3 The Bilingual Mind and the Bilingual Lexicon	120
6.4 Morphological Attrition	124
6.5 Sociolinguistic Variables	127
6.5.1 Introduction	127
6.5.2 Age of Arrival	128
6.5.3 Years in the U.S.	130
6.5.4 Education in Greece	132
6.5.5 Age	132
6.6 On L1 Maintenance in the Immigrant Bilingual	133
6.7 Further Implications	134
Appendices	134
Bibliography	181

List of Tables

Table

1. Noun Paradigm in Greek: Class 1	12
2. Noun Paradigm in Greek: Class 2	14
3. Definite Article Paradigm in Greek	16
4. Indefinite Article Paradigm in Greek	17
5. Inflected Numerals in Greek	18
6. Adjective Paradigm in Greek: Class 1	18
7. Pronoun Paradigm 1 in Greek	20
8. Pronoun Paradigm 2 in Greek	20
9. Percentage Correct on Metaphorical Verb Senses (E*G)	97
10. Percentage Correct on Metaphorical Verb Senses (*E*G)	98
11. Percentage Correct on Metaphorical Verb Senses (*EG)	99
12a. b. Percentage Correct on Metaphorical Verb Senses TBGRP2> Literal Verb Senses TBGRPI	101
13. Percentage Correct on Opaque Expressions (E*G)	103
14. Percentage Correct on Opaque Expressions (*E*G)	104
15. Percentage Correct on Opaque Expressions (*EG)	105
16. Percentage Correct on Marked Noun Endings Reg. In Gender	106
17. Percentage Correct on Marked Noun Reg. in Gender on the Article	107
18. Percentage Correct on Marked Noun Reg. in Gender on Pronouns and Adjectives	108

19. Percentage Correct on Marked Noun Endings Reg. in Case	109
20. Correlations of Sociolinguistic Variables and Test Results	110

Chapter 1

1. Introduction

The broad aim of this study is to look at lexical and morphological attrition in the Greek (L1) of Greek-English bilinguals. Lexical attrition in other languages has been widely documented in the literature¹, but not in Greek². The particular aspects of lexical attrition with which we are concerned are the perception of metaphorical verb senses and opaque expressions by Greek and Greek-American informants as measured by grammaticality judgments.

Morphological attrition has also been widely documented in the last two decades of attrition studies³. Two specific aspects of morphological attrition serve as the focuses of this study, morpholexical and morphosyntactic attrition. This area is of particular interest in reference to Greek because of its rich and complex morphology, especially in contrast to English. Simplifications and reductions are expected.

Two verbs, *perno*, *spazo* 'take,' 'break,' which have a wide range of senses or meanings in both languages, have been chosen for the task of investigating perception of metaphorical verb senses. Test items included literal and metaphorical senses of *perno* 'take,' and *spazo* 'break' that were

¹ References to the literature on lexical attrition can be found in chap 2.

² See Seaman's 1972 study of Modern Greek and American English in contact.

³ See Jordens et al. in Weltens, de Bot & van Els 1986; Maher, Dressler, and Kaufman & Aronoff in Seliger & Vago 1991; Anderson in Hyltenstam & Viberg 1993 among others.

grammatical in Greek and English as well as those that were ungrammatical in either Greek or English or both. L1 grammaticality and lack of grammaticality and the influence of L2 grammaticality and lack of grammaticality on acceptance and rejection of L1 test sentences are measured in order to determine the state of the subjects' knowledge regarding metaphorical verb senses. Similarly, knowledge of opaque expressions was measured in terms of acceptance of Greek grammatical expressions, rejection of English grammatical/Greek ungrammatical expressions and rejection of Greek/English ungrammatical expressions.

In the morphological domain, morpholexical knowledge was measured in terms of rejection of Greek items with incorrect gender assignment on the noun, incorrect gender assignment on the article, and lack of agreement between nouns and pronouns and nouns and adjectives in terms of gender across clauses. Acceptance of these deviant items is interpreted as attrition. The last area of investigation is the morphosyntactic. Case assignment is examined in terms of acceptance or rejection of the incorrect assignment of accusative case on Greek nouns grammatically of the nominative case in predicate complements.

1.1 Language Attrition: Definition

Language attrition, or language loss, refers to a phase or state of regression from mastery or competency in a language. An individual may

attrite in his/her first or primary⁴ language or in any of her secondary (including second, third etc. or foreign) languages. In this context, the individual who attrites in his/her first or second language can be called an 'attriter'⁵, while the language s/he has attrited in can be called the 'attrited language'. In addition, a group of people in society may regress in or lose their primary or secondary language as a result of sociopolitical events.

1.2 Language Attrition: Typology

A brief description of the major areas that fall under the broad designation of language attrition or language loss follows:

1. patholinguistic (also called pathological or neurolinguistic in Dressler 1993) loss can be defined as loss of language or language components as a result of trauma or mental deterioration due to aging and disease. Further distinctions in this type of loss can be made, as in the case of Hyltenstam & Viberg (1993: 26-28) who tease old-age related attrition (e.g. senility) out of pathological attrition (e.g. aphasia and dementia).

⁴ 'Primary' is a term used by Seliger (1993: 38) to designate "that language in which the speaker is most competent and which was acquired naturalistically before the onset of the critical period." It is important to note that the use of the term 'primary' may serve to clear up the possible confusion that the use of the term 'first language' may cause, since 'first' implies both first in sequence of acquisition as well as primary language.

⁵ Although both 'attriter' and 'attrited language' have been called awkward by researchers in the field (Waas 1996: 26; Seliger 1993: 39), they have also been deemed useful and, thus, preferable to other alternatives, such as 'language loser', (Seliger 1993: 39).

2. sociolinguistic loss or attrition is usually accompanied by a shift to a dominant language by speakers of a dying language. In cases of language extinction or “language death”, the number of native speakers of the language usually diminishes over generations, as the language loses its vibrancy and richness. Eventually, with the death of the last speaker, the language also dies. This, of course, is the most dramatic scenario of sociolinguistic language loss.

3. psycholinguistic attrition is the loss of features or components of a first or second language in the context of bilingualism or multilingualism. It is often gradual in the case of first language attrition.

1.2.1 Patholinguistic Loss

Indeed the documentation of language loss, both as the result of trauma and lack of use, is not new. Two interesting occurrences of it are in the Bible. The first and, perhaps, the earliest recorded instance of language attrition can be found in the book of Exodus (4: 10) and was re-recorded in the contemporary context of a history of language attrition by Seliger (1993:

1. It describes a state of language loss or attrition as a result of lack of language use for a prolonged period of time. After fleeing Egypt, Moses went to the town of Midian and remained there for forty years. When the time came for him to return to Egypt, by God’s command, he replied that he was “heavy of mouth and heavy of tongue.” An interpretation by a

medieval biblical commentator claims that Moses no longer fluently spoke his first language, the language of the Egyptian court, because he had been away from it for so long and had instead become fluent in the language of the Midianites. Thus, lack of language exposure and use is a factor in attrition.

Aphasia, literally from the Greek 'without speech,' is language loss, temporary or permanent, as a result of brain damage caused by injury or disease. An early instance of aphasia can also be found in the Bible, the New Testament (Luke I: 20). The victim, Zachariah, the father of John the Baptist, was struck dumb for his disbelief that, at such a late age, he and Elizabeth, his wife, would produce a child.

More widely documented in the past as well as in the present, aphasia was described in early medical documents, recorded on papyrus by Egyptian surgeons who observed patients suffering from language loss who had become 'silent in sadness' (Breasted 1930).

Many centuries later, in the nineteenth century, the scientific study of language loss as a result of trauma or cardiovascular accidents began to enjoy wider currency after the publication of the works of Paul Broca and Carl Wernicke. Findings by these men shed light on the location of language centers in the brain as well as on the language disorders that result from lesions or disease in particular areas of the brain.

At present, the extent to which language mechanisms are located in neurological structures and their elements is recognized as highly complex

and abstract. According to Crick and Jones 1993, the brain sciences are not sufficiently developed to support intelligible correlations between higher mental functions and their physical substrate. Nevertheless, new methods of directly observing brain activity, such as PET, Functional MRI, and Magneto-Encephalography have added and will, no doubt, continue to add valuable insights into where language is processed in the healthy brain. Although Broca's area still shows the presence of grammatical processing and Wernicke's area is still considered the location for the sounds of words, especially nouns and some aspects of their meaning, more varied yet more specific information is becoming available. As more precise brain-imaging technologies are developed, better localization of mental processes will most likely ensue (Pinker 1995: 313-17).

Different trends in this century include attempts to locate the neural structure correlates of both the universal properties and the language-specific properties of language in light of Chomsky's theory of knowledge of language. Of additional interest is to what extent individuals with brain impairments, but exceptional language ability, can shed light on the theory of modularity, on the properties of Universal Grammar, on language learning and the question of parameter setting and re-setting, and on the structure of the language faculty and its relation to the rest of the mind (Smith & Tsimpli 1995: XVI.). One notable example is Smith & Tsimpli's study of Christopher, a polyglot savant, who is "unprecedented in having language and languages as his domain of genius." (Smith & Tsimpli 1995: XVI) With

his ability to read, write, translate and communicate in approximately twenty languages, he far surpasses other savants who have exhibited great linguistic ability in the presence of severe cognitive deficit, such as 'chatterbox children (Cromer 1991) and hyperlexics (Cossu & Marshall 1986). Nevertheless, all of these savants have one thing in common, a dissociation between linguistic and general cognitive abilities, which lends substantial support to the modularity theory.

Another twentieth-century trend has been to branch out into a newly-created subfield of neurolinguistics called linguistic aphasiology. As defined by Caplan (1987: X), 'it seeks to describe what aspects of the language code and its processing are disturbed after brain injury and to account for the pattern or breakdown in terms of principles of language structure and processing.' Yet another trend rejects the notions of mental grammars and rather supports a communicative-continuum approach to aphasia (Schnitzer 1995).

Frequency of occurrence of a form or lexical item plays a role in language loss and attrition. This has been documented in more than one area of attrition. In her research on aphasics, Obler (1982: 62) found that difficulty in naming items accompanied the large majority of lesions to the left hemisphere. Close scrutiny of the types of naming disturbances that occur revealed that infrequent nouns are among the most susceptible. There is also evidence that healthy attriters follow a similar attrition pattern. In a

study done with a population⁶ not unlike that of the present study, Olshtain and Barzilay (1991) found a reduction in their informants' ability to retrieve infrequent nouns.

1.2.2 Sociolinguistic Loss

The second type of language loss, communal or sociolinguistic loss, gained prominence with the work of Nancy Dorian, who began documenting the demise of East Sutherland Gaelic in the 1970s. A dying dialect, it became one of the most comprehensively-studied languages of the decade, known by its signs of decay. Her work, like the work of many (Lehmann 1962; Mougeon 1976, 1977; Hill & Hill 1977; Adler 1977) who preceded her, deals with language death, defined as the gradual disuse and eventual disappearance of a language over time as its speakers die. This research documents the reduction and simplification of a minority language or dialect in an environment where a dominant language or dialect enjoys wider currency.

1.2.3 Psycholinguistic Loss

The more recent history of language loss is a mere two decades old, marked by an event that rendered language loss or attrition a linguistic field

⁶ Their informants are "adult attriters who continue to maintain their primary language as their own dominant language while living in an L2 dominant linguistic environment (1991:140)."

of inquiry in 1980, the Loss of Language Skills Conference held at the University of Pennsylvania. One of the organizers, Barbara F. Freed (in Lambert & Freed 1982: 1), defined language loss or attrition as the loss of any language or any portion of a language by an individual or speech community. However, the focus of the conference as well as that of its proceedings, published in a volume called *The loss of language skills*, was narrower. It was on the loss of language skills by those who have studied an L2 and then ceased using it. Similar studies of attrition of a second or third language followed these earlier studies and were reviewed in Oxford 1982; Bahrick 1984; Pan & Gleason 1986; Weltens, de Bot & van Els 1986; Weltens 1987; Hyltenstam & Obler 1989; Hyltenstam & Viberg 1993).

Almost concurrently, an interest in first language attrition in bilingual and multilingual individuals sprang up. One of the earliest papers encouraging researchers to examine the loss of first language skills was Robert C. Gardner's "Social factors in language retention," in Lambert & Freed (1982). Although articles on first language attrition continued to appear in the decade that followed (Seliger 1985; Sharwood-Smith 1983; Jaspaert, Kroon, & Van hout 1987), it was not until 1991 when an entire volume of papers dedicated to research and theories on first language attrition was collected in *First Language Attrition*, (Seliger & Vago 1991). In individual papers in this work, researchers examined linguistic aspects of the attrition of aspects of the first language of bilinguals.

1.3 The Lexicon and Lexical Loss

The lexicon has held a prominent place in linguistic theory since structuralism and before, though it has had a different name and place in each linguistic framework. While Sapir (1921: 25) was concerned with words, significant parts of words or word groupings, Bloomfield (1933: 264) wrote about lexical forms as a cover term for “all forms that can be stated in terms of phonemes, including even such forms as already contain some grammatical features, e.g. ‘ran’.” In his work on languages in contact, Weinreich (1953) considers lexical interference in detail, whereas Katz & Fodor (1963) wrote about the dictionary entry or grammatical portion and the semantic portion of each lexical item. It is also gaining an ever-increasingly-important place in the generative framework. Namely, ‘as language description tends to take place in terms of the ever more abstract principles and parameters of what is called the *core grammar*, a heavier accent is placed on the peculiarities of the lexicon’ (Bogaards 1996: 363). Here ‘peculiarities’ can be taken to mean the wide range of meanings and uses that constitute the exhaustive semantic description of any given word. This is the realm of *semantemes*, semantic units, or lexical specifications.

1.4 Morphological Loss

Morphological loss or attrition covers a wide range of phenomena from morphophonemic leveling (discussed by Vago, 1991, in his study of the first language attrition of a Hungarian-Hebrew bilingual) to morphosyntactic reduction (characterized by a lack of marking on case in Young Dyrbal, spoken in Northern Australia, as discussed by Schmidt, 1991). Reduction of suffix allomorphy in Breton-French bilinguals, documented by Dressler 1991, demonstrates a universal preference for bi-uniqueness (one meaning-one form). This same tendency was found in Greek-English bilinguals of the present study in their acceptance of such forms as grammatically correct Greek. The discussion below of Greek morphology serves to illustrate how and why this occurs in the Greek noun, article, adjective and pronoun of these subjects. Case reduction appears to follow this same universal preference as indicated in the subjects' acceptance of accusative case in predicate nominatives in postverbal position.

1.4.1 Noun Paradigms in Modern Greek

Modern Greek ⁷ is a fusional, inflectional language which uses affixes that simultaneously encode several grammatical features to mark significant distinctions. A single bound morpheme or unanalysable unit can encode, in nominal endings for instance, case, number, and gender in nouns, articles, adjectives and pronouns. In many cases these units are homonymous in nature, though not always throughout the paradigm. There are 3 genders:

masculine, feminine and neuter, 2 numbers: singular and plural, and 4 cases: nominative, accusative, genitive and vocative. Since all of these components must agree with the noun's number, gender and case, lack of agreement can manifest itself in a number of ways.

In order to identify L1 vulnerability to attrition, the researcher collected natural speech samples of the experimental subjects from free conversations. Analysis of this data revealed instances of incorrect gender or case assignment, and lack of agreement across noun phrase constituents within the same noun phrase or long distance across clauses. Thus, test sentences were constructed with these errors in mind.

The sample lexical items below belong to the two basic classes of the noun, the classes with the largest membership. They illustrate the entire range of patterns of nouns used in the morphological section of the grammaticality judgment test. When compared to the test items, these detailed paradigms show the nature of the divergence of the ungrammatical items from existing grammatical patterns. In Greek, inflectional class assignment is based on gender and while nouns usually respect the genders of animate beings, gender assignment must be considered inherent and semantically arbitrary for inanimate nouns (Mackridge 1985).

Table 1: Noun paradigm in Greek: Class I

⁷Although the term 'Modern Greek' describes the language in its present stage of development, I will simply refer to this language as 'Greek,' since I am placing no emphasis on the language in its present form in contrast to any of its previous forms.

masculine

dhaskalos	kathigyitis	pateras	<i>nom. sg.</i>
dhaskalo	kathigyiti	patera	<i>accus. sg.</i>
dhaskalou	kathigyiti	patera	<i>gen. sg.</i>
dhaskale	kathigyiti	patera	<i>voc. sg.</i>

dhaskali	kathigyites	pateres	<i>nom. pl.</i>
dhaskalous	kathigyites	pateres	<i>accus. pl.</i>
dhaskalon	kathigyiton	pateron	<i>gen. pl.</i>
dhaskales	kathigyites	pateres	<i>voc. pl.</i>

‘teacher’ ‘professor’ ‘father’

feminine

yineka	aghapi		<i>nom. sg.</i>
yineka	aghapi		<i>accus. sg.</i>
yinekas	aghapis		<i>gen. sg.</i>
yineka	aghapi		<i>voc. sg.</i>

yinekes	aghapes		<i>nom. pl.</i>
yinekes	aghapes		<i>accus. pl.</i>
yinekon	aghapon		<i>gen. pl.</i>
yinekes	aghapes		<i>voc. sg.</i>

‘woman’ ‘love’

neuter

dhoros	pedhi	mathima	<i>nom. sg.</i>
dhoros	pedhi	mathima	<i>accus. sg.</i>
dhorou	pedyou	mathimatos	<i>gen. sg.</i>
dhoros	pedhi	mathima	<i>voc. sg.</i>

dhora	pedhya	mathimata	<i>nom. pl.</i>
dhora	pedhya	mathimata	<i>accus. pl.</i>
dhoron	pedhyon	mathimaton	<i>nom. pl.</i>
dhora	pedhya	mathimata	<i>voc. pl.</i>

‘gift’ ‘children’ ‘lesson’

The nominative singular ending for the common classes of masculine nouns⁸ consist of either of three vowels: [i], [o], [a] plus *-s*. Although the nominative stems for the common classes of feminine nouns, namely *-i* and *-a*, are noticeably different from those of the common classes of masculine nouns, there is some neutralization: *-a* is used for both masculine accusative and feminine nominative and accusative and *-es* is used for the feminine and masculine nominative plural and accusative of different noun classes. In addition, *-es* is the suffix of both feminine noun types in the accusative case.

Table 2: Noun Paradigm in Greek: Class 2

masculine

kafes	papous	singrafeas	<i>nom. sg.</i>
kafe	papou	singrafeas	<i>accus. sg.</i>
kafe	papou	singrafeas	<i>gen. sg.</i>
kafe	papou	singrafeas	<i>voc. sg.</i>
kafedhes	papoudhes	singrafis	<i>nom. pl.</i>
kafedhes	papoudhes	singrafis	<i>accus. pl.</i>
kafedhon	papoudhon	singrafon	<i>gen. pl.</i>
kafedhes	papoudhes	singrafis	<i>voc. pl.</i>
'coffee'	'grandfather'	'author'	

feminine

leoforos	eisodhos	alepou	<i>nom. sg.</i>
leoforo	eisodho	alepou	<i>accus. sg.</i>
leoforou	eisodhou	alepou	<i>gen. sg.</i>
leoforo	eisodho	alepou	<i>voc. sg.</i>
leofori	eisodhi	alepoudhes	<i>nom. pl.</i>
leoforous	eisodhous	alepoudhes	<i>accus. pl.</i>
leoforon	eisodhon	alepoudhon	<i>gen. pl.</i>

⁸ as indicated above

leofori	eisodhi	alepoudhes	<i>voc. pl.</i>
'avenue'	'entrance'	'fox'	
neuter			
lathos	boufan		<i>nom. sg.</i>
lathos	boufan		<i>accus. sg.</i>
lathou	boufan		<i>gen. sg.</i>
lathos	boufan		<i>voc. sg.</i>
lathi	boufan		<i>nom. pl.</i>
lathi	boufan		<i>accus. pl.</i>
lathon	boufan		<i>gen. pl.</i>
lathi	boufan		<i>voc. pl.</i>
'mistake'	'jacket'		

This noun class hosts a large number of representatives. To be noted in the examples above is that the *-s*, which is present in the masculine nominative singular, is not present in any of the remaining cases: accusative, vocative and genitive. The feminine follows the same pattern. Thus, in these cases and many others, it is only in the article where overt markings of case and gender⁹ lie.

The feminine nominative stems *-i* and *-a* remain constant throughout the cases of singular number except for the genitive, where it assumes an *-s* ending. Similarly, the plural ending *-es* remains constant for all cases of both classes except for the genitive plural with its universal *-on* ending which is shared by all classes across all genders.

⁹ See feminine and masculine *-es* plural endings in nominative and accusative cases

1.4.2 The Definite Article

Definite articles occur with all nouns, including proper nouns, and agree with them in number, gender and case. They are often the only indicator of distinction in gender because certain endings are found in more than one gender, as in the case of the *-os* ending in masculine (class 1) and feminine (class 2) nouns, or of case, as in the *-au* ending in nominative and accusative cases. Finally, the most marked example of homonymy is in the article *ton* and as it is in the ending *-on*, the genitive plural of nouns of all genders and all types.

Table 3: Definite Article Paradigm in Greek

masculine	feminine	neuter	
ο	ι	το	<i>nom. sg.</i>
το(ν) ¹⁰	τι(ν)	το	<i>accus. sg.</i>
του	τις	του	<i>gen. sg.</i>
-	-	-	<i>voc. sg.</i>
ι	ι	τα	<i>nom. pl.</i>
τους	τις	τα	<i>accus. pl.</i>
τον	τον	τον	<i>gen. pl.</i>

¹⁰ The presence or absence of the *-n* at the end of the article in the accusative case (singular) of masculine and feminine nouns is phonologically conditioned by the sound that follows it.

- - - *voc. pl.*

1.4.3 The Indefinite Article

The indefinite article, delineated in Table 4 below, is also the numeral one, which agrees in gender and case with the noun it modifies. Thus, it comes in three forms: masculine, feminine and neuter (*enas* , *mia* , *ena*). It precedes the noun and its adjectives (if any) in the noun phrase and it can also signify 'some (one)' or a 'certain' someone or something.

Table 4: Indefinite Article Paradigm in Greek

masculine	feminine	neuter	
<i>enas</i>	<i>mia</i>	<i>ena</i>	<i>nom. s</i>
<i>ena</i>	<i>mia</i>	<i>ena</i>	<i>accus. sg.</i>
<i>enos</i>	<i>mias</i>	<i>ena</i>	<i>gen. sg.</i>
-	-	-	<i>voc. sg.</i>

Some of the other numerals, which all serve as adjectives, also occur in more than one form and thus must agree in gender and case with the noun they modify. Namely, 'three' and 'four' whose three forms, *tris*, *tris*, *tria*.

and *tesseris*, *tesseris*, and *tessera*¹¹ agree with masculine, feminine and neuter nouns respectively.

Table 5: Inflected Numerals in Greek

masculine	feminine	neuter	
tris, tesseris	tris, tesseris	tria, tessera	<i>nom. sg.</i>
tris, tesseris	tris, tesseris	tria, tessera	<i>accus. sg.</i>
tris, tesseris	tris, tesseris	tria, tessera	<i>gen. sg.</i>
-	-	-	<i>voc. sg.</i>
'three', 'four'			

'Two' and 'twenty,' which occur in the test sentences, have one form each, *dhio* and *ikosi* respectively for all genders and case.

1.4.4 The Adjective

Agreement is investigated in the test sentences in terms of articles and nouns, adjectives and nouns and pronouns and nouns. Like articles, adjectives agree in case, gender and number with the nouns they modify. The most common class is given below:

Table 6: Adjective Paradigm in Greek: Class I

masculine	feminine	neuter
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¹¹ See Table 7 below

kalos	kali	kalo	<i>nom. sg.</i>
kalo	kali	kalo	<i>accus. sg.</i>
kalou	kalis	kalou	<i>gen. sg.</i>
kalo, kale	kali	kalo	<i>voc. sg.</i>

masculine**feminine****neuter**

kali	kales	kala	<i>nom. pl.</i>
kalous	kales	kala	<i>accus. pl.</i>
kalon	kalon	kalon	<i>gen. pl.</i>
kali	kales	kaia	<i>voc. pl.</i>

'good'

The declination pattern of *kalos* follows the pattern of noun class 1¹², specifically that of the masculine *-os* ending, the feminine *-i* ending, and the neuter *-o* ending, and has the largest number of members, since the large majority of adjectives follow this pattern, regardless of whether their associative nouns follow the same pattern. Nevertheless, there are also, as in the case of nouns, irregular or less common adjective endings

1.4.5 The Pronoun

¹² See Table 1 above

Similar to articles and adjectives, pronouns agree in case, gender and number with the nouns to which they refer. Although there are a number of types of pronouns in Modern Greek, only two are relevant to our particular discussion here, namely, 'which ('who,' 'whom,' 'that,' 'whose') and 'none.'

Table 7: Pronoun Paradigm 1 in Greek

masculine	feminine	neuter	
pyos	pya	pyo	<i>nom. sg.</i>
pyo	pya	pyo	<i>accus. sg.</i>
pyanou	pyanou	pyanou	<i>gen. sg.</i>
pyo	pya	pyo	<i>voc. sg.</i>
pyi	pyes	pya	<i>nom. sg.</i>
pyi	pyes	pya	<i>accus. sg.</i>
pyanou	pyanou	pyanou	<i>gen. sg.</i>
pyi	pyes	pya	<i>voc. sg.</i>
'which'			

'None,' a compound word in Modern Greek, follows the same pattern as the numeral 'one,' which is the second word in the compound.

Table 8: Pronoun Paradigm 2 in Greek

masculine	feminine	neuter
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kanenas	kamia	kanena	<i>nom. sg.</i>
kanena	kamia	kanena	<i>accus. sg.</i>
kanena	kamias	kanenos	<i>gen. sg.</i>
kanena	kamia	kanena	<i>voc. sg.</i>

'none'

1.5 Language Change

In contrast to the view that the attrition of one of the languages of the bilingual or polyglot is a loss is the perspective that any language contact situation, this one being no exception, brings about language change in one or more of the languages involved. This is a widely observable fact in language, in general, whether there is another language present or not.

Milroy (1992: 3) describes this state of flux as the natural state of language.

'No real language state is a perfectly balanced and stable structure: linguistic change is always in progress and all dialects are transitional dialects. Synchronic states, as we observe them at a given time, are therefore changing states, and stable states of language of the kind postulated in Saussurean theory are idealizations. Variable states are normal.'

Not to be ignored or underestimated is the importance of memory in accessing lexical items that have become fixed in reference to specific concepts. One timely example can be seen in the comment of the new archbishop of New York, Bishop Egan, during his first New York press

conference on May 11, 2000. "Bishop Egan answered a question in English but used an English translation of the Italian word for condoms 'preservatives,' to the confusion of some reporters," (*The New York Times*, May 12, 2000). The same article mentioned a TV interview that the Bishop had had some years before just after his return to the United States from Rome after an extended stay in Italy. During the interview he had had difficulty in accessing the words he needed to express himself more than once. The host of that TV show, surprised at the articulate bishop's struggle to find the right words, was quoted as asking his interlocutor "What was going on?" The bishop's reply was simple, "I think in Latin." These facts bring to the surface a number of questions relevant to the present study: Does the bilingual or multilingual feel so immersed in one of his languages in certain moments that accessing the other cannot be achieved easily or smoothly? Is it necessary, in such moments, for a period of transition to occur, during which reimmersion is possible? Is this true even in one's primary or first language?

1.6 Overview

The remaining five chapters will present the details of this study in the following organizational pattern. Chapter 2 discusses the theoretical framework within which the present study lies. Chapter 3 presents the hypotheses tested. Chapter 4 describes the methodology of the study.

Chapter 5 presents the results, which are, in turn, discussed in chapter 6. The appendices include the instrument, the questionnaire and their English translations.

Chapter 2

2. Theoretical Background

A study of the first language attrition of Greeks in the U.S. is interesting for a number of reasons. Language attrition is a new and expanding field and looking at Modern Greek, a linguistic system previously unexplored from this perspective, can provide us with interesting insights into its nature and processes. At the conception of this project, no experimental study of this kind¹³ showing language attrition of native speakers of Modern Greek¹⁴ had been conducted. This study looks at language change in a language contact situation, Greek immigrants immersed in the English language and American culture of the U.S.

The fact that Greek is well maintained among first generation immigrants (Scourby 1982) is well known to sociolinguists. The reasons for the success of this language maintenance situation are not uncommon; they are the following: active, widespread use of Greek on a daily basis, a rigorous preservation of Greek customs and traditions and a strong sense of national pride. Thus, a challenge that presents itself to a researcher of Greek first language attrition is to determine whether a language so well preserved in the

¹³ Respect must be paid here to Seaman and his 1972 study of Greek and American English in contact for his study did reveal, among other things, changes in the Greek of these bilinguals due to the contact situation. These changes are discussed in further detail in chapter 2.

¹⁴ For purposes of convenience and in following the tradition of Modern English, Modern Greek, the language presently spoken by the Greeks of Greece and the Greek diaspora, including the United States, will be referred to simply as, 'Greek.'

community would show any signs of language breakdown in bilinguals whose second language may be encroaching on their first. A further research query could be to ascertain where, in the language system, such changes might lie. This has been addressed in the present study, where areas of attrition are first identified and then tested.

Another challenge that presents itself to the researcher of a study of this kind comes from the language attrition literature. A common observation in language shift situations is that the L1 gradually becomes replaced by the dominant language (L2) of the larger community or new community (i.e. host country for immigrants) in the course of two or three generations (Van Hut & Munstermann 1988; Trudgill 1983; Gonzo & Saltarelli); however, "changes in the structure of the linguistic system do not occur so much with individuals as across generations of speakers." (de Bot & Weltens 1991: 42). In an attempt to meet that challenge, one of the goals of this study has been to ascertain aspects of structural loss in the Greek of first-generation Greek immigrants in the U.S.

2.1 Theoretical Framework of First Language Attrition

In the context of bilingualism, the setting for the present study of first language attrition, changes to the attriters' first language can be attributed to external or internal forces. Indeed, these are considered "to be the two principal forces bearing on the linguistic forms of attriting L1 grammars" (Seliger & Vago

1991: 7). In terms of the present study, the influence of an external force, the L2, can be seen in changes to the L1 lexicon, while the influence of internal forces, natural changes in the L1 itself greatly accelerated in attrition, can be seen in the morphological domain of the L1.

2.2 Externally-induced Changes

Externally-induced changes in one of a bilingual's languages are also known as crosslinguistic influences, interlingual effects or, simply, transfer, interference, or convergence. Such changes often manifest themselves in the lexicon, most extensively in loan translations, word translation substitutions (L2 word translated into the L1), semantic extensions (analogizing the wider range of meanings of a word in the L1 on an equivalent word in the L2) and semantic reductions (analogizing the narrower range of meanings of a word in the L1 on an equivalent word in the L2).

Externally-induced changes have also been observed in the syntax of the L1 of some bilinguals as a result of contact with the L2. For example, Schmidt (1991) reports a rigidifying of word order in the Dyirbal of Dyirbal-English bilinguals and the Finnish of Finnish-English bilinguals (Maher 1991) due to pressure from English word order, SVO and, in the case of Finnish, a concomitant loss of inflections. Another example of syntactic change in the L1 can be seen in Huffines study (1991) of the Pennsylvania German. The Mennonite and Amish Pennsylvania German-English bilinguals of her study

exhibited a convergence of the dative and accusative cases of Pennsylvania German into one case - the accusative case. Pressure from English must have induced this change since the Pennsylvania German of another non-sectarian group which was part of this study did not exhibit the same change (Huffines 1991: 131).

2.3 Lexical Attrition

The lexicon as a site of attrition has been widely documented in the attrition and language loss literature. In fact, the lexicon has been called the place "where bilinguals report the most dramatic changes in their first language (L1) after acquiring a second language," (Boyd 1993: 386). Some examples ensue.

Boyd (1993) examined the incorporation of Swedish lexical items into the American English and Finnish of American and Finnish natives living in Sweden for 10 years or more¹⁵. Her major findings were the following: 1. Of the 458 clear cases of incorporations into Finnish of Swedish lexical items, 286 were nouns. 2. Of the 207 clear cases of incorporations into Finnish of American lexical items, 178 were nouns.

One overall difference in the incorporations between the two groups is that the Finns tended to phonologically and morphologically integrate the Swedish words into Finnish to a greater extent than the Americans tended to phonologically and

morphologically integrate the Swedish words into English. Nevertheless, there were two small groups who deviated from the norm. The first group consisted of two Finns who had a greater number and greater frequency of contacts with non-Finns but had a very low level of integration of Swedish words in their Finnish, rather they had a greater occurrence of code-switches and loans. In contrast, the second group consisted of three Americans who had a greater number and a greater intimacy of contacts with other Americans and yet exhibited a greater occurrence of integrations of Swedish lexical items in their English.

With a population of immigrants similar in some ways to those of the present study, Olshtain & Barzilay (1991) investigated the ability of 15 adult English-Hebrew bilinguals living in Israel to retrieve low-frequency lexical items in English. Subjects were recorded in their telling of two frog stories based on two booklets, *Frog, where are you?* and *A boy, a dog and a frog*, both by Mercer Mayer (1969, New York: The Dial Press). Since the story lines of these books are conveyed through a series of detailed pictures without any written texts, subjects were required to produce the necessary language to describe characters, objects and events.

Results showed that the subjects could fluently retell the story but had difficulty retrieving specific infrequently-occurring nouns, used to refer to particular objects, geographical features or animals in the story, e.g. 'pond,' 'deer,' 'gopher,' 'cliff, and 'jar.' Thus, the researchers concluded that these subjects exhibited "reduction of lexical accessibility in English when they are

¹⁵ Similarly, the subjects (experimental group) of the present study have been in the U.S. for 10 years or more. After 10 years of immersion in an L2 and limited contact with an L1, signs of

placed in a situation where certain lexical specification is necessary” (Olshtain and Barzilay 1991: 145).

Loss of lexical information and morphological rules was the focus of another study by Altenberg (1991) who devised a written fill-in task to examine the vulnerability of first language¹⁶ gender and pluralization information in attrition. “Subjects were presented, in a random order, with the singular form of each noun, and asked to fill in, in the spaces provided, each noun’s gender and its plural form.” (Altenberg 1991: 202). The 56 nouns used fell into two groups, 34 high-frequency words and 22 low-frequency words. Examples are given below, 2 high-frequency words and 2 low-frequency words :

1. *Tag* ‘day’ and *Gesicht* ‘face’
2. *Pfeil* ‘arrow’ and *Beitrag* ‘contribution’

Results indicated that number was more vulnerable to attrition than gender was in the German of these German-English bilinguals. In fact, the largest number of errors was found among low frequency, unpredictable plural forms (Altenberg 1991: 203).

Calquing or loan translating from an L2 to an L1 has also been documented elsewhere in attrition. In data that they examined, Seliger & Vago (1991: 9) noted examples of loan translations from English into Hungarian and

attrition would certainly be evident.

¹⁶ German

German respectively, e.g. 'oily hair' *olajos* and 'Forget it!' *Vergisses*. Similarly, in an L2 acquisition study, Bialystok lists the following interlingual strategies, which are also common to L1 and L2 attrition: "foreignizing (applying L2 morphology and/or phonology to L1 lexical items) and transliteration (the use of L2 lexicon and structure to create a usually non-literal translation of an L1 item or phrase, word coinage, description (i.e. circumlocution), and semantic contiguity (use of similar but inexact L2 lexical item when the correct item is not known to the speaker).

Simultaneous acquisition and attrition was examined in a case study conducted by Turian & Altenberg (1991). Their subject, a young boy, who had been growing up bilingual in Russian (L1) and English (L2), was videotaped from when he was 3.0 to 3.7 years of age and then recorded when he was 4.3 and 4.4 years of age. The transcriptions of the recordings were analyzed and the compensatory strategies used by the child in each of the languages were categorized and discussed. Results indicated that a wide range of compensatory strategies were used by the attriter at various stages of his L1 attrition process: interlingual, intralingual and discourse strategies. Interlingual strategies (Turian & Altenberg 1991: 213) included lexical borrowing ('basement' and 'name' were used as Russian words, their pronunciation adapted to Russian), and syntactic transfer ('That's me' was translated into Russian, which only permits a nominative, I, after the copula.). Intralingual strategies (Turian & Altenberg 1991: 214) included analogical leveling (the ungrammatical regular infinitive forms of the verbs 'to shave' and 'to sleep' in

Russian replaced the grammatical irregular present tense forms of these same verbs in Russian) and lexical innovation (the new lexical item 'bear children' was created in Russian combining the Russian lexical items, 'bears' and 'children').

Working with an even younger child (2.6), Dorit Kaufman documented the simultaneous L1 (Hebrew) attrition and L2 (English) acquisition of an Israeli girl during the first two years (2.6 – 4.7) of her stay in the U.S. Her results showed interlingually-induced changes in the child's nominal and verbal systems. Code blending, the merging of morphemes from the languages at the word level (e.g. *xitul* – ז'17 'diapers' and *isader* – *ing*¹⁸ 'arranging' Kaufman 1991: 24.) characterized the most frequent modifications.

Seliger (1991) also recorded the speech of a child over a two-year period for evidence of attrition. The child, who was nine years old in the earlier data collection and then ten years old in the later data collection, was a native speaker of English and a second language speaker of Hebrew. Based on an analysis of selected portions of the transcriptions, metalinguistic grammaticality judgment tests were devised and administered. Interlinguistic effects were observed in the subjects' acceptance of sentences in English, such as *Dick handed to Sally the book (Seliger 1991: 234). Seliger posits that the subject is "relying on the Hebrew rule for unrestricted placement of the PP" (Seliger 1991: 236) in her acceptance of this sentence in English.

¹⁷ Note that this is the English plural marker /z/.

¹⁸ Note that this is the English progressive tense marker 'ing.'

2.3.1 Metaphorical Verb Senses

Two specific kinds of lexical attrition focused on in this study are the attrition of metaphorical verb senses and the attrition of opaque expressions.

Verb senses can best be explained in a generativist framework in terms of selectional restrictions. Selectional properties of verbs are constrained by what each entry s-selects (s = semantic) for the contents of the sentence or clause following the verb. For example, "the entry for *hit* will specify that it takes a complement with the semantic role of recipient of action (patient), and that its subject has the semantic role of agent," (Chomsky 1986: 86). To complete the picture, a set of semantic features, such as 'object, physical, human, adult, male, not married' is used to characterize the semantic representation of 'a sense' of a constituent¹⁹. Furthermore, a sense of a constituent is called 'a reading.' A given lexical item can have more than one reading, as is the case with the verbs of this study, in both their Greek and English instantiations, *perno, spazo*, 'take,' and 'break.' Finally, selection restrictions are those features of a reading which reconstruct the different ranges of application of the different senses of the same lexical item (Katz 1972: 101-09).

In attrition in the context of bilingualism, changes to the selectional properties of verbs can be externally induced. That is, they can be affected by the selectional properties of an equivalent word in the other language, e.g. the L2. In his study of the Flemish-English bilinguals of Detroit, Ostyn (1972) found attrition of selection restrictions in their Flemish in the form of transference from English.

One example from his data concerns the verb *te beurt vallen* 'happen, occur,'

which includes the features

(+pleasant, +positive) in Flemish:

We suurden onze doelneming ... bij het grote leed dat hen te beurt viel.

'We sent our condolences ... at the occasion of the great suffering that happened to them ... (Ostyn 1972: 79)

As is clear from the example, *te beurt vallen* is used here without the features (+pleasant,+ positive), the way 'happen, occur,' the equivalent verb in the L2 would be used in English.

From another perspective, each sense of a verb can be said to occupy a different dimension of the semantic space of that verb. In this framework, it can easily be seen how when verbs are confused even crosslinguistically (i.e. *perno* 'take'), it is the dimension or dimensions of one verb that is assumed to fill the semantic space of the other verb.

Yet another perspective on verb sense maintains that differences between lexical items can be explained in terms of differences in the semantic components of the lexical items (Jackendoff 1992). According to Jackendoff (1992), "these components are primitive elements which combine to form units at the level of grammar and are arranged as functions and arguments which can be successively embedded within one another" (Saeed 1997:261). Just as these differences can be intralingual, they can be extralingual or crosslinguistic. That is, the English

¹⁹ In this case, the constituent described is 'bachelor.'

verbs 'take' and 'break' may differ in terms of semantic components with the Greek verbs *perno* and *spazo* to the extent that a number of senses of each verb are particular to that specific verb in that particular language. Even though Jackendoff's primitives have been attacked on philosophical grounds (J.A. Fodor 1970, Fodor et.al 1980) and on psychological grounds (J.D. Fodor et.al. 1975), Jackendoff's semantic representation of lexical items offers a plausible explanation for differences in lexical items that have certain uses and meanings in common. Thus, in all of the three scenarios outlined above, attrition of the L1 verb can be seen to take the form of a change in that verb induced by the presence in the same mind of an equivalent L2 verb.

Processing differences between different senses of a verb may also account for degree of vulnerability to attrition of certain senses. Specifically in the framework of the present study, "the need to compute first a literal and then an idiomatic²⁰ representation or the necessity of constructing two interpretations in parallel," (D'Arcais 1993: 91), may make metaphorical or idiomatic senses of a verb more vulnerable to attrition. In either case, increased processing loads could be expected with processing metaphorical or idiomatic representations as opposed to processing literal representations because the reader or listener must slow down and assign an alternative interpretation to the sentence when a literal interpretation is no longer possible. (D'Arcais 1993: 93).

A 1991 study done by Altenberg in the area of lexical specifications took two verbs, 'take' and 'break,' as suitable for a study of metaphorical uses of

²⁰ Since both 'metaphorical' and 'idiomatic' are used to refer a phrase that is not parsed word by word, we use them interchangeably here.

verbs. In her experiment, two German-English bilingual subjects were asked to judge the grammaticality of 34 *nehmen/brechen* 'take/break' sentences in German. There were 18 sentences with *brechen*, eight of which were grammatical in English, but not in German (E*G)²¹ and eight of which were grammatical in English and in German (EG) and 16 with *nehmen*, six of which were grammatical in English, but not in German (E*G) and six of which were grammatical in English and in German. Examples follow:

* <i>Sie brachen ihr Fasten.</i>	"They broke their fast."	E*G
<i>Ellen brach sein Herz.</i>	"Ellen broke his heart."	EG
* <i>Nimm Mut!</i>	"Take heart."	E*G
<i>Er nahm ein Bad.</i>	"He took a bath."	EG

She found that the German-English bilinguals of her study accepted (in a grammaticality judgment, GJ, task) seven out of nine of the E*G *brechen* sentences, while they accepted only two of the eight E*G *nehmen* sentences.

Similarly, in the third experiment in their 1978 study, Jordens & Kellerman investigated the transfer of idiomatic verb senses in their informants from their first language, in this case, Dutch, to their second language, in this case, English. Their interest was in the relationship between perception of 'semantic space' and transferability. That is, they proposed that the nearer a meaning of a particular verb was to its core or unmarked meaning in one language, the more likely it was to be accepted in translation, where it would

²¹ Following what is considered standard practice in syntax for at least three decades (Chomsky 1968), an asterisk placed before a sentence or, in this case, before the first initial of a language

naturally have the form of its counterpart in the other language. The verb in question in their experiment was *breken* in Dutch and 'break' in English. Using Miller's card sorting technique (1969) they produced a numerical matrix of the 17 meanings of *breken* and then compared it to a similar matrix of the translatability of these meanings to sentences with English 'break.' They found a high correlation between the translatability rank orders and the core/non-core dimension ordering in their subjects' grammaticality judgments. However, one unusual fact did emerge from their study. "Some metaphorical meanings were placed closer to the core meaning than some concrete ones" (Jordens & Kellerman 1978: 207). This was an unexpected finding for concrete meanings were thought of as naturally closer to core meanings. Thus, this suggests that certain metaphorical meanings may indeed be core in other languages as well.

Examples #1 and #17 from the concrete-abstract dimension follow:

- | | |
|--|--|
| 1. <i>Het kopje brak.</i> | "The cup broke." |
| | |
| 17. <i>Sommige arbeiders hebben de staking gebroken.</i> | "Some workers have broken the strike." |

Examples #1 and #17 from the core/non-core distinction follow:

- | | |
|-------------------------------|---------------------|
| 1. <i>Hij brak zijn been.</i> | "He broke his leg." |
|-------------------------------|---------------------|

indicates that the sentence is ungrammatical in that language.

17. *Een spelletje zou de middag enigszins breken.* "A game would break up the afternoon a bit."

When compared to Jordens & Kellerman's ordering of meanings along core/non-core and concrete/non-concrete dimensions, none of Altenberg's (1991) sentences fell into the extremes, either core or concrete. Rather, they were found in the middle range from core to non-core and concrete to abstract along both axes. She found that the German-English bilinguals of her study accepted (in a grammaticality judgment, GJ, task) seven out of nine of the English (L2) sentences (E*G) translated into German (L1), none of which fall into any clear pattern in the two-dimensional scaling framework of Jordens & Kellerman. Nevertheless, Altenberg's study does show the influence of L2 'break' senses on *brechen* verb senses. Acceptance of *brechen* meanings in German suggests that changes in L1 verb sense occurred under the influence of L2 verb sense and use in these bilinguals.

The first part of the present study was modeled on Altenberg's *nehmen*/'take' and *brechen*/'break' experiment and directly inspired by Jordens & Kellerman's results. Their impact on the conception of this investigation can be thus stated:

1. These two verbs boast a broad range of senses in both languages.
2. Some of the senses of the verb *breken* and 'break' shared the same 'semantic space' or selectional properties in Dutch and English, respectively, according to the Jordens & Kellerman study. Similarly, many of the uses of *perno* 'take' and

spazo 'break' share the same selectional properties in Greek and English. 3.

Some of the senses of these verbs were found to be vulnerable to attrition in the Altenberg study.

For the purposes of this study a clear distinction was made between literal and metaphorical. We hypothesize that metaphorical verb sense, an essential component of the knowledge of the large majority of verbs, is subject to attrition. That is, selectional properties of specific verbs in the L1 may change so that the lexical entry or range of meanings for those verbs no longer resembles that of a native speaker. For example, sentences containing certain verbs which are grammatical in Greek but ungrammatical in English (*EG) may be deemed ungrammatical by the attriter because s/he no longer recognizes or can no longer access, in the allotted time, the full range of selectional properties that characterize that verb. The crosslinguistic effects of grammaticalness may also play a role in attrition. At the outset, the grammaticalness (E*G) and lack of grammaticalness (*E*G) of L2 equivalent sentences is hypothesized to have no significant effect on L1 verb sense. If indeed an effect is found, L2 grammaticalness or lack of grammaticalness can be expected to have an equal effect; however, since this study looks contains both groups of L2 grammatical sentences and L2 ungrammatical sentences, these effects can be looked at separately.

Finally, in an attempt to answer the abstract/non-abstract verb range question for Greek, metaphorical uses (EG) and literal uses (EG) of the verbs used in the study will be compared. We hypothesize that due to their more

frequent occurrence and usual meaning, literal uses of these verbs will be less vulnerable to attrition.

2.3.2 Opaque Expressions

Among the specific patterns which emerged across speakers in preliminary data collections conducted by the researcher were translated-from-English opaque expressions in their Greek, e.g. *Tous dhino pistiosi.* (*Evghalan arketa lefta ya na ktisoun ena meghalo spiti sto khoryo.*) 'I give them credit.' ('They made enough money to build a big house in the village.')

One possible explanation for the transfer of these forms is that L1 lexical entries, such as opaque expressions are especially unstable and thus vulnerable to crosslinguistic influence, possibly because they are idiosyncratic, marked, and not part of a productive pattern.

In his research on knowledge and use of English idiomatic language in L1 and L2 speakers, Coreil coined the term 'supralexical' to "refer to the recurrence of specified lexical items in predetermined sequence" (Coreil 1992: 3). According to Coreil, supralexical units include transparent and opaque idioms. Traditionally, an idiom or idiomatic expression is a word or phrase whose constituent elements considered as a whole do not carry the figurative meaning of the phrase. This figurative construction seems to be a fused structure whose elements have lost much of their ability to behave as independent items (Coreil 1992: 109). Specifically, this fusion links the phrase to a specific concept, and reduces the lexical elements to what might be called "morphemic husks" with a reduced

capacity to function as analytical, combinatory elements. As such, these fused constructions are largely immune to many of the influences that cause change in language.

Coreil's investigation included a description and analysis of supralexicals and a test of preference for supralexical units over analytical approximations. Two examples of his sentences follow in response to the context sentence, which precedes them:

How is the chair I fixed?

1A -.Not too good. Your work didn't hold up very long.

1B - Not too good. That repair failed after a short period.

(Coreil 1992: 320)

Coreil's test included 40 pairs (1 supralexical, 1 analytical approximation) of these types of sentences which were judged by 343 subjects, from the following 5 groups of speakers: Intermediate ESL, Advanced ESL, Black English, Bilingual, Standard English who were asked to express their preference for one sentence over the other. Choices were to be based on which sentence subjects would expect to hear and were comfortable with in their speech. Results showed a significant difference at the $p < .05$ level between each of the five groups of speakers: Int. ESL, Adv. ESL, BE, Bilinguals, SE. The groups of subjects are listed in ascending order, in terms of preference for supralexical units. Based on these results, Coreil concluded that "supralexical ability is not only indicative of

fluency, but that it is a major constituent of linguistic competence.” Coreil 1992: 66. In fact, in adult native speakers, this skill in handling synthesized language is apparently critical to their performance (Coreil 1992: 65).

One implication for attrition that follows, as drawn by Coreil, is that a test of knowledge of and preference for use of supralelexical units would be able to measure small degrees of language loss and change (Coreil 1992:2), namely, extent of attrition, however small it may be. This proceeds from the claim that if knowledge of and therefore²², preference for use of supralelexical units can be correlated with competence in a language, then the acceptance of the supralexicals of another language within the framework of one’s first language and the rejection of the supralexicals of one’s first language both constitute first language attrition.

One type of supralelexical unit is the fused item referred to as a non-decomposable phrase. One way to describe these non-decomposable phrases is in terms of their degree of opacity. Coreil (1992) offers one useful definition of transparency and opacity. His third order fusions are made up of “transparent idioms.” Several semantic features are added to these structures but generally not enough to totally obscure the semantic content of the phrase that is yielded through analysis of component lexical items. (108)

Fused

Analytical

She was **in and out** all day long.

She departed and returned
all day long.

²² This assumption is in accordance with that of Coreil (1992: 215): “If a particular supralelexical unit has been internalized, it will probably be chosen over its analytic counterpart.”

This job is my **bread & butter**.

This job enables me to buy
food, clothing and shelter.

In contrast, Coreil's fourth order fusions are opaque idioms. In this case, it is the "added" semantic features and not the sum of the features of the constituent lexical items that constitutes the semantic content of the figurative interpretation of opaque idioms, e.g. 'Kick the bucket.'

These fourth order fusions are precisely the kinds of opaque²³ expressions that were analyzed in the present study. Specifically, three types of grammatical situations were tested and analyzed. In the first, the opaque expressions were ungrammatical in Greek (E*G). Thus, their acceptance would indicate an influence from the grammaticality of the expressions in English. The second type consists of expressions which are neither grammatical in English nor in Greek. In this case, their acceptance would indicate an influence from the grammaticality of the expressions in English and the attrition of the sense of what is ungrammatical in Greek. Finally, in the third type the expressions are grammatical in Greek but not in English (*EG). Their rejection would demonstrate an influence from the ungrammaticality of the English and the attrition of the sense of what is grammatical in Greek.

Opaque expressions may be vulnerable to attrition because of processing constraints. That is, since nondecomposable idioms take longer to process than literal phrases and decomposable idioms (Gibbs 1993: 64), a timed test (such as

²³ 'Opaque' is used here in the sense of non-decomposable and unanalyzable. That is, a strict compositional analysis of these expressions offers little, if any, information about their figurative, non-literal meanings.

the one the subjects of the present study were given) may not provide informants with the time needed to process these idioms. On a grammaticality judgment test, this could result in a reluctance to accept an idiom that has not been processed.

Tabossi & Zardon (1995) who claim that accessing an idiom and accessing a single word are essentially different processes, reached a similar conclusion. They propose that idioms and words are stored in different ways. One important difference they note is that activation of idiom meaning is slower than activation of a word meaning and is more dependent on various contextual factors than the activation of word meaning.

2.4 Internally-induced Changes: Language and mind

LI attrition is also characterized by changes to the L1 that are internally induced. That is, changes can be viewed as modifications that are either induced by universal principles or connected to some aspect of the linguistic system of the L1 and they include phenomena, such as generalization, simplification, regularization, naturalization, intralinguistic effects, conceptual/cognitive²⁴ strategies (Seliger & Vago 1991: 10). From another perspective these are changes that are caused by simplifying and generalizing tendencies that affect every language over time (i.e. diachronic change). Such processes of change have been well documented in the

²⁴ To be noted is that here and elsewhere (Silva-Corvalan 1991: 154) cognitive strategies and intralinguistic effects are grouped under the general category of internally-induced changes. Future researchers may gain useful insights from teasing these apart and testing them separately. Hence, my discussion below.

historical linguistics literature and include a variety of types of analogization, neutralization, reduction and simplification.

Internally-induced changes have been noted by Silva-Corvalan (1991) in her study of the Spanish of three generations of Mexican-Americans. Early forms lost or nearly lost include the morphological conditional in its tense form, *miraria* 'I would look,' and the morphological future, *mirara*, 'I will look,' replaced by the 'going to' future, *va a mirar*²⁵.

Another example, which bears a greater similarity to the present study, is in Margit Waas' (1996) study of the L1 attrition of German-English bilinguals in Australia. Her comprehensive study yielded a wide range of interesting results: however, those most relevant to this study lie in the lexical and morphosyntactic domains. One common problem she noted was that subjects showed difficulties producing correct singular and plural constructions, e.g. 20 **jahr* 'year' for *jahres* 'years' and **Tigern* for *Tiger* 'tigers' (Waas 1996: 162-63). Lack of agreement was also documented, e.g. **die* (fem.) *Moskito* (masc.) for *der* (masc.) *Moskito* (masc.) 'the mosquito' and **jedes* (neut.) *Kilometer* (masc.) for *jeder* *Kilometer* 'every kilometer' (Waas 1996: 164). Both Greek and German place a similarly heavy memory and processing load on their users due to the complexity of their noun paradigm and strict agreement requirements²⁶.

Cognitive factors can also induce linguistic change. One example is the principle of semantic transparency, which is defined by Slobin (1977: 186) as the

²⁵ This development may have been furthered along through the bilingual's collapsing of L1 and L2 forms in his own mind, for 'going to' is quite prevalent in American English.

²⁶ Both Greek and German have three genders on nouns and articles, adjectives and pronouns must agree with their nouns in terms of case, number and gender.

tendency to “maintain a one-to-one mapping between underlying semantic structures and surface forms, with the goal of making messages easily retrievable for listeners.” Its counterpart in historical linguistics (i.e. diachronic language change) is called leveling, which can be defined, in terms of morphology, as “a complete or partial elimination of unimportant morpheme or stem alterations within paradigms.” (Hock 1986: 183) This can be expressed in other words as ‘one meaning – one form.’

2.5 Markedness

Another factor that induces change in a language is markedness. In general terms, markedness is a property of linguistic forms. Specifically, a marked form is one of the following: a. a form that has more structure than its unmarked counterpart. b. a form that requires more rules or possesses more informational content than an unmarked form directly associated with it. c. a form which occurs less frequently in the world’s languages d. in Chomskyan theory, it is the property of forms which require evidence in the input for their adoption by the learner. (Sharwood Smith 1994: 201). These are precisely the three types of markedness that are referred to in the literature:

1. learnability, 2. complexity, 3. frequency, while the most widely used descriptive parameters for markedness decisions are frequency, neutralization, complexity and syncretization.

2.5.1 Learnability & Markedness Theory

Interestingly, despite equivalencies, such as unmarked = simple and notions, such as simple is easier to learn or process in a psycholinguistic sense, there is evidence that some marked structures are learned before unmarked structures by children learning their first language. For example, “children acquire stranded prepositions before they acquire non-stranded ones.” (Sharwood Smith 1994: 126). One example will suffice:

- | | |
|-----------------------------------|--------------------------|
| 1a. At what time are you leaving? | Non-stranded preposition |
| 1b. What time are you leaving at? | Stranded preposition |

2.5.2 Neurolinguistics and Markedness

In studies on aphasia, the absence of inflected forms in a patient’s speech has generally been considered to be a characteristic symptom of agrammatism, “speech which is essentially devoid of appropriately used closed class or function words. The speech of agrammatic patients is generally slow and effortful.” (Oblor & Gjerlow 1999: 49). This makes agrammatics’ loss of inflection in highly inflected languages particularly interesting to the neurolinguist. In one such study, Micelli and Caramazza (1988) examined the repetition of derived versus inflected words in an Italian patient. They found that although derivational affixation was relatively well preserved, inflectional

processes had become inaccessible. Namely, in place of the wide range of inflections that characterize intact Italian, the patient had substituted morphologically unmarked inflections.

2.5.3 Complexity in Markedness Theory

In a psycholinguistic framework, the concept of markedness can be defined in terms of the complexity principle and contextual neutralization as delineated below. It is well-known and widely supported by research findings in psycholinguistics (Clark 1973) that comprehension of more complex items requires slightly more processing time. Furthermore, George (1972: 17) noted “a general relationship among redundancy in communication terms, processing difficulty in psychological terms, and marking in linguistic terms.” He claims that it is the unmarked member which requires less time for cognitive processing (Rutherford 1983).

According to Clark and Clark (1977: 231), “if expression A can neutralize in meaning in contexts that the almost equivalent expression B cannot, then B is more complex than A.” A necessary oversimplification of this concept is given by Rutherford (1983), who equates more marked with more complex.

Neutralizations and simplifications are related to complexity. Neutralization often takes place when a marked and unmarked item or form is in a binary relationship (Rutherford 1983). When neutralization takes place, it favors the unmarked item. If the marked form loses item or form eventually

disappears from the language, then the language has also been reduced or simplified.

Another form of simplification occurs in nonbinary relationships, where the relationship between any two items or forms to each other is in terms of more or less marked. (Rutherford 1983), a more marked form loses a rule or information or changes in form thus becoming a less marked form.

Jordens & Kellerman (1978) and Kellerman (1983) propose that psycholinguistic markedness between languages plays a role in determining transferability. Along these lines, Zobl (1980) and Sharwood Smith (1983) suggest that those structures which lead to overall processing simplicity will be transferred most readily. While these constraints on transfer have been proposed primarily to account for the influence of the first language on the second language, they are likely to be equally significant in an investigation of the influence of the second language on the first (Altenberg 1991). This is in accordance with our claim here.

One final reference to markedness must include an intralingual simplification process referred to in the sociolinguistic literature as leveling. Specifically, leveling is “the reduction or attrition of marked variants.” (Trudgill 1986: 98). Thus, hereafter, we shall refer to the morpholexical and morphosyntactic changes in the L1 of the Greek-English bilinguals of this study as leveling.

2.5.4 Frequency & Prevalence in Markedness Theory

One way of setting up the distinction between marked and unmarked forms or items is in terms of frequency and prevalence. For example, when considering 'cow' and 'cows,' 'cow' seems to be the more basic form from which is derived the plural 'cows.' Thus, the singular 'cow' is the unmarked form, while 'cows' is the marked form. This type of distinction can also be extended to relationships between forms or items in different languages. For example, since there seems to be no language with just rounded vowels but many with both rounded and unrounded vowels and some with only unrounded vowels, unrounded vowels must be the unmarked form while rounded vowels is the marked form, (Sharwood Smith 1994: 123 -24).

A distinction may be made between frequency of occurrence of form and frequency of occurrence of an individual lexical item. That is, a particular lexical item might be morphologically marked in some way but also be so frequently-occurring in the language that its use is prevalent. In this case, neutralization or simplification may be a highly unlikely change. One case in point is the English verb 'to be.' Despite its highly irregular morphological character, it has been highly resistant to change over the centuries due to its constant, widespread use.

Substituting an unmarked for a marked form is also a documented characteristic of sociolinguistic language decay. Dressler found in his study of the sociolinguistic attrition of Breton in France that "unmarked categories are better preserved than marked ones and unmarked ones may substitute marked ones rather than the reverse," (Dressler 1991: 109). The same phenomenon has also been observed in aphasia patients and thus can be cited as a characteristic of

neurolinguistic language decay. In one study conducted by Miceli & Caramazza (1987), the inflectional processes of the patient studied had become inaccessible and, as a result, he had substituted morphologically unmarked inflections for marked ones in most cases. Thus, it is not surprising to find the presence of this same phenomenon occurring as a characteristic of psycholinguistic language decay or first language attrition in a bilingual individual in the present study.

Markedness also plays a role in the morpholexical and morphosyntactic components of language. Specifically, it manifests itself as a tendency to generalize on common, frequent and less complex forms. Thus, the prediction for attrition is that marked forms will be neutralized

2.6 Morphological Attrition

As mentioned above, we hypothesize that the Greek of Greek immigrants will undergo natural language changes as well as changes which result from language contact and lack of exposure and use, as reflected in the focus of each of the three parts of the instrument. Lexical changes are easily provoked by the presence of another language competing for brain space and processing time. Both morpholexical and morphosyntactic changes are provoked by internal processes, such as reduction and simplification, but also by typological differences between English and Greek, marked by the richness of Greek morphology as opposed to the paucity of English morphological structure.

In a morphologically complex language like Greek with homonymy in noun suffixing analogizing on or generalizing common frequent forms appears to be a normal process of morphological neutralization and simplification. In other words, the number of homonymous endings will be reduced resulting in paradigmatic leveling and system simplification. With fewer classes in each paradigm and a concomitant larger number of members of each class, the resulting attrited morphological system will have less variability and complexity than its intact counterpart.

2.7 Production vs. Receptive Tasks

For use as instruments, both productive and receptive tasks were reviewed and considered. Productive language ability has been hypothesized to be more vulnerable to language attrition than receptive ability (Bahrick 1984; Cohen 1989). This appears to be especially true in situations where a small community of people speak a language, which though indigenous to the area, has gradually been losing currency over generations. Indeed, a number of studies (Dorian 1981; Dressler & Wodak-Leodolter 1977; Denison 1977; Hill & Hill 1977) have focussed on situations such as these, the attrition and loss of the L1 productive ability of bilinguals living in an L2 dominant or L2 encroaching environment. In many cases, as is the case in Dorian's detailed account of the life cycle and eventual death of East Sutherland Gaelic, another language often replaces the dying language, whose last speakers die with the language. Thus, their decreasing productive ability in the language can be readily observed in their increasing struggle to communicate.

However, the circumstances surrounding the bilinguals of the present study were different in that their native tongue, Greek, was still alive and well in the country where it was spoken, Greece. Rather, it was *their* Greek that was vulnerable to change due to lack of exposure or limited exposure to the L1 coupled with ready access to and frequent use of the L2, English, the language of the larger community. Nevertheless, these bilinguals, unlike those of the cases mentioned above, were and may still be proficient speakers of their L1, having fully acquired their L1 before immigrating to the U.S. That is, since opportunities for maintenance are available to them, the attrited state of their L1 might demonstrate subtle. One implication of this is that their performance may be largely intact. Nevertheless, seems to be that a productive task controlled enough to monitor subtle changes in competence is difficult to devise. Mindful that performance is rife with hesitations, false starts, self-corrections and adaptations to the speech of the interlocutor, it does not always accurately mirror competence. Thus, the newly changed L1 competence of these Greek-English bilinguals might be better tested in receptive tasks.

Timed grammaticality judgment tasks were chosen as the tool. Controlled experiments minimize performance phenomena that are not part of the linguistic analysis focusing on the specific targeted structures investigated, thus ensuring a more accurate assessment of competence or knowledge of language. Timed grammaticality judgment tasks were chosen over untimed tasks to ensure that participants would not have time to think about what they know or do not

know and thus provide a judgment influenced by metalinguistic knowledge as opposed to just linguistic knowledge.

2.8 Grammaticalness

One widely accepted definition of grammar in the last decade or so is that grammar is the underlying knowledge that a speaker has of the language (van Riemsdijk & Williams 1986: 5). Thus, by extrapolation, an item or structure is deemed grammatical by an evaluator if it reflects that knowledge or, at a minimum, conforms to the scope and limits of it. Although much has been said (Chomsky 1995: 235; Cook 1988: 12; Smith & Tsimpli 1995: 85) about the peripheral nature of the lexical component in contrast to the core nature of the syntactical component or grammar, UG principles and language-specific properties, the lexicon is also considered an essential part of the grammar. Indeed, Epstein, Thrainsson and Zwart (1996: 8) adhere to this view: "the lexicon is an arguably irreducible component of the **grammar** (emphasis mine) expressing what we know when we know the words of a given language." In an earlier version of generative grammar, Katz expressed the same notion in different terms. "meanings like phonological features and syntactic categories are abstractions that form part of competence" (Katz 1971: 121). We are in accord with this view. Hence, for the purposes of this study we shall use the term **grammatical** to refer to those items or structures (including lexical items) that constitute the grammar of that language in its entirety, as it is known to a native speaker. Specifically, semantically well-

formed sentences are characterized as grammatical and semantically ill-formed sentences are categorized as ungrammatical and any deviation from these norms will be deemed a sign of attrition. Similarly, morphologically well-formed sentences are characterized as grammatical and morphologically ill-formed sentences are categorized as ungrammatical. As discussed in detail in chapter 2, the constituents of the Greek noun phrase and verb phrase, as well as those lexical items (i.e. pronouns, adjectives etc.) outside of it but which must agree with it, all have to be in full morphological agreement to be well-formed. Placed within the framework of the minimalist program, inflectional morphology belongs to syntax proper and derivational morphology belongs to the lexicon proper (Chomsky 1995: 133). Thus in terms of the present study, both the morpholexical items and the morphosyntactic items are deemed grammatical when they follow the rules and restrictions of the lexical and syntactic components of the language, respectively.

. These intuitions of grammaticality, both of what is and what is not grammatical, are part of native speakers' competence. In fact, "in modern linguistics, the primary data which linguists use are intuitions (of a native speaker) about what is and is not an acceptable sentence." (Harley 1995: 19). Hence, in testing grammaticality or grammaticalness in this study, we are testing what native speakers judge as acceptable or unacceptable in their language, in other words, what is grammatical or ungrammatical.

The task commonly used to elicit native speakers' intuitions is a grammaticality judgment task with two possible responses: grammatical or ungrammatical. Furthermore, some of the sentences are grammatical while others

are ungrammatical. Thus, there are two types of incorrect responses: incorrectly judged as grammatical and incorrectly judged as ungrammatical. Many L2 researchers claim that acceptance of an ungrammatical sentence is indicative of absence of a rule. Undoubtedly, this is one explanation. However, more recent research suggests another explanation. Klein & Martohardjono (1999: 20) point out such acceptance can reflect a learner's variable or optional rule system. In either case, such acceptance would indicate an attrited or changed state in the Greek-English bilinguals' knowledge of the L1. Rejection of a grammatical statement is similar. It demonstrates that knowledge of the language is no longer constant or that it can not be accessed in the time allotted.

Since grammatical intuitions are influenced by context (Lallemant 1996: 9), setting the sentences in a clear context is crucial. In response to the claim that contextualized grammaticality judgment tasks more closely tap internal grammars, Robertson & Sorace (1999) provided stimulus sentences within natural contexts in their study. A similar technique was chosen for the present study.

Chapter 3

3. Hypotheses

In the last chapter we saw that the focus of this study would be on two types of lexical²⁷ attrition and two types of morphological²⁸ attrition. Specifically, seven hypotheses were tested in terms of L1 Greek attrition of verb usage (metaphorical and literal), opaque expressions, morpholexical features and morphosyntactic features.

3.1 The Perception of Verb Senses

As stated in chapter 2, verb attrition is related to the loss of or a change in the selectional properties of the verb. Since this study focuses on two verbs, 'take' and 'break' and two languages, Greek and English, it is mainly concerned with the syntactic and semantic features of these verbs in these languages and their interrelationship in terms of acceptability in each language. One additional concern is the effect of the syntactic and semantic features of these verbs in other natural languages on the acceptability of usage in Greek.

The first hypothesis states that the grammaticality of some metaphorical senses of 'take' and 'break' in English will influence the recognition of those same senses as ungrammatical in Greek. That is, English selectional restrictions of 'take' and 'break' are accepted for Greek *perno* and *spazo*. The verbs 'take' and

²⁷ See a detailed discussion of lexical attrition in chapter 2

²⁸ See a detailed discussion of Greek morphology and Greek attrition in chapter 1

perno are recognized as equivalent in Greek and English since their literal senses and uses are directly translatable. Following the tradition of Katz & Fodor (1963), a sentence has a literal meaning when the individual meanings for the lexemes in the sentence are combined according to the set of rules of composition. Literal meanings of lexemes are concrete and ordinary. In contrast, metaphorical meanings of lexemes are abstract or figurative.

The second hypothesis states that the lack of grammaticalness of some metaphorical uses of 'take' and 'break' in Greek will be influenced by the ungrammatical uses of those same verbs in English. This is, lack of L1 grammaticalness will be affected by lack of L2 grammaticalness.

The third hypothesis states that some of the metaphorical uses of the Greek verbs *perno* and *spazo* will be influenced by the lack of grammaticalness of those same uses of the English verbs 'take' and 'break.' That is, lack of L2 grammaticalness will influence L1 grammaticalness. In this case as in the first hypothesis, English selectional restrictions of 'take' and 'break' are accepted for Greek *perno* and *spazo*.

The fourth hypothesis states that metaphorical uses of Greek *perno* and *spazo* would be more vulnerable to attrition than literal uses of these verbs. Increased processing loads associated with the processing of metaphorical representations may be responsible for this.

3.1.1 Hypothesis 1: Metaphorical Verb Senses Will Attrite (L1 ungrammatical) Under the Influence of L2 (grammatical)

We hypothesize that L1 metaphorical verb senses in Greek-English bilinguals is vulnerable to attrition. Thus, ungrammatical senses of Greek verbs will be accepted by the attriter, especially if the equivalent senses in the L2 are grammatical (E*G²⁹), for example:

1. He took me to school many times.
Me pire sto skholio poles fores.
2. We took turns so as not to argue.
Pirame sires ya na min malosoume.
3. The visit took us by surprise.
I episkepsi mas pire apo ekpliksi.
4. She broke the news to me.
Mou espase ta nea.
5. He broke the law many times.
Espase to nomo poles fores.
6. The branch broke her fall.
To kladhi espase tin ptosi tis.

If L2 grammaticality is a factor in attrition, then these sentences will be judged grammatical by the Greek-English bilinguals to a higher degree than they will be judged grammatical by the Greek monolinguals.

²⁹ The following notation will be used heretofore in this document: EG – English grammatical, Greek grammatical; E*G – English grammatical, Greek ungrammatical; *EG – English ungrammatical, Greek grammatical; *E *G – English ungrammatical, Greek ungrammatical.

In order to test this hypothesis, we compare the rate of acceptance on the above group of sentences of the two groups, the experimental group, Greek-English bilinguals, and the control group, Greek monolinguals.

3.1.2 Hypothesis 2: Metaphorical Verb Senses (L1 ungrammatical) Will Attrite under the Influence of L2 (ungrammatical)

Perception of what is ungrammatical or unacceptable in terms of metaphorical verb sense in the L1 (Greek) will weaken in the attriter. Furthermore this could happen regardless of the influence of ungrammatical or unacceptable L2 (English) equivalent usage.

In order to test this hypothesis, we analyze the results of the scores on the following group of sentences, which contain sentences that are neither grammatical in English nor in Greek (*E*G) but are grammatical in an existing language to ensure naturalness. Translations, transliterations (where applicable) and language origins are given for each sentence.

1. He took the fly immediately.
French - Il a immediatement pris la mouche. 'He got angry right away.'
2. She took gloves with him.
French - Elle a pris des gants avec lui.
'She had to be careful, tactful with him.'
3. She took face with her boss.
Indonesian - Dia mengambil muka dengan majikannya.
'She was keen on doing what was necessary to win her boss's favor.'
4. He broke the problem at midnight.
Indonesian - Dia memecahkan permasalahannya tengah malam.

'He solved the problem at midnight.'

5. He broke himself.

Arabic - Inhara

'He tried very hard to succeed at something difficult.'

6. He broke sugar on the back of his boss.

French – Il a casse du sucre sur le dos de son patron.

'He talked behind his boss's back.'

Scores on these sentences become particularly interesting when viewed in conjunction with results on the (E*G) sentences. If the Greek-English bilinguals accept sentences which are grammatical in English but not in Greek (E*G) to a greater extent than they accept sentences that are ungrammatical in both English and Greek (*E*G), then this suggests that the sense of grammaticalness in one language of this bilingual, in this case the L1, is influenced by the grammaticalness of the other language, the L2, English.

3.1.3 Hypothesis 3: Metaphorical Verb Senses (L1 grammatical) Will Attrite under the Influence of L2 (ungrammatical).

Perception of metaphorical verb sense in the L1 (Greek) will weaken in the attriter. This may occur even when equivalent L2 (English) metaphorical sense is ungrammatical. Thus, grammatical metaphorical senses of Greek verbs may be rejected when equivalent senses in the L2 are ungrammatical.

The sentences in the following group are grammatical in Greek but not in English (*EG).

1. She took me telephone on Friday afternoon.
Me pire telefono paraskevi to mesimeri. - 'She called me on Friday afternoon.'
2. He took me from behind right away.
Me pire apo piso amesos. - 'He followed me right away.'
3. He took the wrong (phone) number the night before last.
Pire lathasmeno noumero prothtes to vradhi. - 'He called the wrong number the night before last.'
5. He broke it to me last night.
Mou tin espase hthes to vradhi. - 'He drove me crazy or up the wall with his annoying behavior.'
6. He broke my nerves.
Mou espase ta nevra. - 'He got on my nerves.'
7. He broke the gall to me.
Mou espase tin kholi aftos. - 'He frightened me.'

This part of the experiment investigates the acceptance of metaphorical senses of Greek verbs. If metaphorical senses of Greek verbs are rejected by the experimental group to a higher degree than they are rejected by the control group, then it can be assumed that the Greek-English bilinguals' sense of grammaticalness has deviated from that of native L1 Greek monolinguals and has, thus, attrited.

3.1.4 Hypothesis 4: Metaphorical Verb Senses > Literal Verb Senses

Perception of metaphorical or idiomatic verb senses may be more vulnerable to attrition than literal verb senses. If so, then metaphorical senses of verbs will have a lower acceptance rate by the attriter than literal senses of the same verbs.

In order to test this hypothesis, we analyze the results of the scores on the following group of sentences under X, which contain literal senses of *perno* and *spazo* and compare them to the results of the scores on the sentences under Y, which contain metaphorical uses of *perno* and *spazo*. All of the sentences in both groups are grammatical in English and in Greek (EG).

X.

1. He took it from the table.
To pire apo to trapezi.
2. He took all the money from here.
Pire ola ta lefta apo edho.
3. She took all the books with her.
Pire ola ta vivlia mazi tis.
4. She broke the glass this morning.
Espase to potiri to proi.
5. He broke the record last night.
Espase to dhisko htēs to vradhi.
6. He broke it last week.
To espase tin perasmeni evdhomadha.

Y.

1. It took a long time.
Pire poli ora.
2. She took me for a fool, naturally.
Me pire ya khazo, vevea.
3. The doctor took his temperature.
O yattros pire ti thermokrasia.

4. He broke the record with that one.

Espase to rekor me ekino.

6. They broke the ice and became friends.

Espasan ton pagho ke eyinan fili.

7. The waves broke on the rocks.

Ta kimata espasan epano stous vrakhous.

3.2 Opaque Expressions

As discussed in chapter 2, the term opaque expression is used here to refer to non-decomposable, unanalyzable chunks of language, a strict compositional analysis of which offers little, if any, information about their figurative, non-literal meanings. Since these expressions are considered a critical part of native speakers' competence (Yorio 1989; Coreil 1992)³⁰, they merit testing in attrition studies. We examine them here in terms of L1 grammaticality or lack of grammaticality under the influence of L2 grammaticality or lack of grammaticality as well as the influence of the unacceptability of other languages.

To this purpose, opacity will be tested in the following ways: 1. acceptance of ungrammatical sentences in Greek which are grammatical in English, 2. rejection of grammatical Greek sentences which are ungrammatical in English, 3.

³⁰ Yorio (1989) suggested this when he said that the level of proficiency in a given language is closely related to the ability to use idiomatic expression. Coreil (1992: 49) makes a similar claim when he states "the ability to use idiomatic units in precisely those situations where they are appropriate would appear to be a critical part of native speaker competence. He further states that "the formation, accessing and production of fused structures is a fundamental characteristic of language and, as such, is no less important than similar operations involving morphosyntactic operations at the level of individual lexical items." (1992:53).

acceptance of sentences which are ungrammatical in Greek and English but which are grammatical in a natural language other than Greek or English.

3.2.1 Hypothesis 5: Opaque Expressions (L1 ungrammatical) Will Attrite under the Influence of L2 (grammatical)

We hypothesize that L1 attriters will accept grammatical (L2) English opaque expressions or sayings which are ungrammatical in their L1, Greek (E*G).

If L2 grammaticality is a factor in attrition, then these sentences will be judged grammatical by the Greek-English bilinguals to a higher degree than they will be judged grammatical by the Greek monolinguals.

1. Money talks.
Ta lefta milane.
2. Crime doesn't pay.
To englima dhen plironi.
3. If you play, you pay.
An pezis, plironis.
4. Easy come, easy go.
Efkola erkhone, efkola fevghoun
5. He missed the boat.
Ekhase ti varka.

3.2.2 Hypothesis 6: Opaque Expressions (L1 ungrammatical) Will Attrite under the Influence of L2 (ungrammatical)

We hypothesize that the L1 attriter will accept opaque expressions that are ungrammatical in their L1, Greek, even if equivalent expressions are ungrammatical in their L2, English (*E*G). That is, judgments of what is ungrammatical in the L1 (Greek) will weaken in the attriter, regardless of L2 influence. This is the other side of the attrition coin.

In order to test this hypothesis, we analyze the results of the scores on the following group of sentences, which contain sentences that are neither grammatical in English nor in Greek (*E*G) but are grammatical in some other existing language to ensure naturalness.

1. With tablecloth, road.
Russian – s skatert'yu droroga.
'Good riddance.'
2. Two house movings equal one house fire.
Russian – dva perezda rovnyaetsya s odnim pozharom.
'Moving is such a hardship; it's half as bad as having your house burn down.'
3. You always give papaya.
Colombian Spanish – Siempre das papaya.
'You always set yourself up for ridicule or to be taken advantage of.'
4. After seeing the robbers, they started making a rope.
Japanese – Doronawa.
'It's too late.'
5. I managed to eat a pheasant and its eggs.
Korean – Nanun Kwongwa al eul muk eu ryu hat da.
'I did something unexpectedly good.'
6. He helped it to his granny.
Dutch – Hij heeft het naar zijn grootje geholpen.
'He ruined it.'
7. So, he just threw a spoon.
Japanese – saji wo nageru.

'He gave up.'

8. I must not let any parties be drilled through my nose.
Dutch – Ik moet me geen feestjes door de neus laten boren.
'I shouldn't miss out on enjoying any parties.'

9. The water has come up to the level of the soul.
Hebrew – higi³¹ u mayim ad nafesh.
'I've had it up to here³².'

10. I take the peel off the banana; it goes into my mouth.
Thai – ngai mian pok kuoy kao pak.
'It's very easy. It's a piece of cake.'

11. Don't open your mouth to the devil.
Hebrew - al tiftach pe lasatan.
'Don't invite trouble by talking about something; it might happen.'

12. He makes water to be body.
Thai – pan nam pen tuo.
'It's a big nothing. It's just smoke and mirrors.'

3.2.3 Hypothesis 7: Opaque Expressions (L1 grammatical) Will Attrite under the Influence of L2 (ungrammatical)

We hypothesize that the L1 attriter will reject L1 grammatical opaque expressions, even if equivalent expressions in the L2 are ungrammatical. The lowered rates of acceptance of Greek opaque expressions in a native Greek speaker's repertoire indicate an attrited state of L1, as discussed in 3.3. These rates will be measured in terms of degree of rejection of the Greek expressions listed below.

³¹ Following IPA convention, a question mark is used here for the glottal stop.

³² An accompanying hand gesture would show that you've had enough of something.

In order to test this hypothesis, we analyze the rejection rates of the following group of sentences, which contain sentences that are grammatical in Greek but not in English (*EG).

1. Your eyes - fourteen.

Ta matia sou dhekatesera.

'Be careful!'

2. He's getting them beyond.

Ta vghazi pera.

'He's getting by (financially speaking)'

3. He's throwing an eye in a magazine.

Rikhni mia matia se ena periodhiko.

'He's looking at a magazine.'

4. He eats wood every day.

Troy ksilo kathe mera.

'He gets spanked (beaten) every day.'

5. Bad of his head.

Kako tou kefalyou tou.

'He's only harming himself.'

6. I eat my time wrongiy.

Trow tin ora mou adhikos.

'I waste my time.'

7. Now he's paying the bride.

Tora plironi ti nifi.

'Now he's paying for it. He's finally getting his due.'

3.3 Markedness in Greek Morphology

As discussed in chapter 2, generalizations on common, frequent and less complex forms are characteristic of language loss and attrition. Indeed, "many of

Egho ime.

‘ I am.’

In contrast, in English, the accusative case is the default case, but there is no marking for gender or number except in some of the pronouns.

‘Who is it?’

‘It’s me.’

3.3.1 Hypothesis 8: Marked Noun Endings Will be Regularized to the Unmarked Form.

There are five sentences in this section. All of the sentences contain errors in gender in the noun ending. Acceptance of these sentences would indicate attrition.

1. *Pighame sto **dhaso** poles fores persi, epidhi mas aresoun ta dhendra.
[prep. + masc., accus., sing.]

Correct form - Pighame sto **dhasos** poles fores persi, epidhi mas aresoun ta dhendra.
[prep. + neut., accus., sing.]

“We went to the **forest** many times last year, because we like the trees.”

2. *Evale afta pou eihe **ston edhafo** prin aghorasei ala fita.
[prep. + masc., accus., sing.]

Correct form - Evale afta pou eihe **sto edhafos** prin aghorasei ala fita.
[prep. + neut., accus., sing.]

“He put what he had in **the ground** before buying any other plants.”

The above two examples, *to dhasos* and *to edhafos*, belong to a neuter gender noun paradigm. Therefore, according to the paradigm, in the accusative case they should be preceded by the article *to* and should keep the same ending that they carry in the nominative case, *-os*, rendering *sto dhasos* and *sto edhafos*. This is in direct contrast to the masculine gender noun paradigm, e.g. *o dhaskalos*, which carries the *-os* ending in the nominative case, but drops the *-s* in the accusative case, yielding *to dhaskalo*. This *-os* masculine noun paradigm has the largest number of noun members. It also coincides with the masculine adjective paradigm with the largest number of adjective members (Mackridge 1985: 141), since the adjectives decline similarly (following the *-os* masculine noun paradigm³⁷) when paired with nouns belonging to all three of the major noun paradigms, i.e. *-os*, *-as*, *-is*. Based on these facts, *-os* emerges as the default ending for nouns and adjectives. Thus, acceptance of this unmarked pattern in place of a more marked pattern indicates that a neutralizing or analogizing tendency is part of the attrition process.

3. * **Idhan tous plithous** stin parelasi ala dhen pighan konda tous amesos.
[masc., accus., pl.]

Correct form - **Idhan ta plithi** stin parelasi ala dhen pighan konda tous amesos.
[neut., accus., pl.]

"They saw the crowds in the parade but they didn't go near them immediately."

4. * **Eftiakse tous stithous** ton maneken prin tous balei ta nea soutien.
[masc., accus., pl.]

³⁷ See an example in Table 1, chapter 1

Correct form - Eftiakse **ta stithi** ton maneken prin tous valei ta nea soutien.
[neut., accus., pl.]

“He fixed **the breasts** of the mannequins before he put the new bras on them.”

5. *Dhiorthose **tris lathous** stin teleftea ekthesi ala eihe ke alous.
[masc., accus., pl.]

Correct form - Dhiorthose **tria lathi** stin teleftea ekthesi ala eihe ke alous.
[neut., accus., pl.]

“He corrected three mistakes in the last composition, but there were others.”

The nouns, *to plithos* and *to stithos*, which mean ‘crowd’ and ‘breast’ respectively, are both part of the neuter noun paradigm.³⁸ Indeed, they are members of the same paradigm and follow the same pattern as #1 and #2; however, they differ from #1 and #2 in that they are in the plural. Nevertheless, the plural ending here, *-ous*, is analogized on the default plural accusative ending *-ous*.

To lathos in #5 follows the same pattern as *to plithos* and *to stithos* in #3 and #4; however, it is used here in its plural form with the quantifier, ‘three’ instead of with the determiner. The plural ending, *-ous*, is similarly analogized on the default plural accusative ending and the quantifier, *tris*, also follows the pattern of the masculine noun paradigm. In addition, the second clause contains the pronoun *alous* ‘others’, which has *lathous* as its antecedent. Thus, *lathous*, *tris* and *alous* all follow the pattern of the first and most common of the major masculine noun paradigms.

3.3.2 Hypothesis 9: Marked Nouns Will be Regularized to the Unmarked Form, as Indicated by the Article.

There are five sentences in this section. All of the sentences contain errors in gender in the article. Acceptance of these sentences would indicate attrition.

1. * *Otan itan neos, aghapouse ti dhrama ke ya afto egyine ithopiyos.*
[fem., accus., sing.]

Correct form - *Otan itan neos, aghapouse to dhrama ke ya afto eyine ithopiyos.*
[neut., accus., sing.]

“When he was young, he loved **the** drama and for that reason he became an actor.”

In this case, the source of the error is the lexical item *dhrama*, which has two meanings or more precisely two separate entries, which are homophonous. *I Dhrama* is the name of a city in northwestern Greece and *to dhrama* means ‘drama’ in English. The accusative forms of these articles are given above. In this case, the context requires the latter entry. The presence of the lexical item *ithopiyos*, ‘actor’, clearly signals which *dhrama* is being referred to. Since the two entries are similar in every other way, it is only in the article that the two forms can be overtly distinguished. The fact that the word ends in *-a*, a common ending for feminine nouns³⁸, which are also more numerous than neuter nouns.

³⁸ See Table 2, chapter 1.

³⁹ See Table 1, chapter 1.

could account for its acceptance here. Morphologically speaking, *ti dhrama* may be the more optimal item.

2. * *Idhe ola ta ergha tou sto galeri prin aghorasi kapyo.*
[prep. + neut., accus., sing.]

Correct form - *Idhe ola ta ergha tou stin galeri prin aghorasi kapyo.*
[prep. + fem., accus., sing.]

“ She saw all of his works in the gallery before she bought one.”

In #2 above, *i galeri* is a French loanword in Greek. The general rule for loanwords, especially French loanwords, which often do not end in a vowel, is that they take a neuter article and are indeclinable. *I galeri*, however, is an exception. It takes a feminine article, even though its ending, ⁻ⁱ⁴⁰, corresponds to a common neuter ending seen in words, such as *pedhi* ‘child’ and it corresponds, phonologically, to the ⁻ⁱ⁴¹ feminine noun paradigm, which has the largest number of noun members. This feminine ⁻ⁱ ending also coincides with the feminine adjective paradigm with the largest number of adjective members (Mackridge 1985: 141), since the adjectives decline similarly when paired with nouns belonging to either of the major feminine noun paradigms, i.e., ⁻ⁱ and ^{-a}. Based on these facts, ⁻ⁱ emerges as the default ending for feminine nouns and adjectives. Thus, acceptance of this unmarked pattern in place of a more marked pattern indicates that a neutralizing or analogizing tendency is part of the attrition process. A neutralizing or analogizing tendency could account for its acceptance here.

⁴⁰ This [i] sound is written as ι in Greek.

3. * Kimithike **tin** mesanikhta epidhi teleiose ti dhoulia tou argha.
[fem., accus., sing.]

Correct form - Kimithike **ta** mesanikhta epidhi teleiose ti dhoulia tou argha.
[neut., accus., plural]

“He went to sleep at **the** midnight because he finished his work late.”

Ta mesanikhta, which means ‘midnight’ is an unusual and highly marked form for more than one reason. ‘Midnight’ is not plural in any sense of the word and yet its form is plural here in Greek, as marked by the article. *ta*.

‘Midnight’ means, literally, in Greek, ‘the middle (neut. adj., pl). night.’ This is the second reason that it is unusual. ‘Night’ or *nikhta* in Greek, when occurring alone, is feminine and so preceded by the feminine article *i* in the nominative case or *tin* in the accusative case. Analogizing could render *mesanikhta* feminine, i.e. *tin mesanikhta*. This analogizing on a common, unmarked form might account for its acceptance here.

This word appears to derive its complex morphosyntactic structure from the compound *mesa* ‘middle things,’ and *nikhta* ‘night,’ thus yielding something like ‘middle things the night.’ According to den Dikken (1999: personal communication), this could either be a non-headed compound or a left-hand head.

4. * Ekane **tis** kafedhes, prin figyi ya tin eklisia simera to proi.
[fem., accus., pl.]

Correct form - Ekane **tous** kafedhes, prin figyi ya tin eklisia simera to proi.
[masc., accus., pl.]

⁴¹ This [i] sound is written as η in Greek.

“He made **the** coffees before he left for church this morning.”

Here there is a lack of agreement between the feminine accusative plural article *tis* and the masculine accusative plural lexical item *kafedhes*. However, this noun phrase appears to be morphologically well-formed since the *-es* ending of this noun is the same *-es* ending of the two major feminine noun paradigms⁴², i.e. *aghapi – aghapes* ‘love – loves’; *yineka – yinekes* ‘woman – women’. In reality, though, the *i kafes – i kafedhes* nom. and *ton kafes – tous kafedhes* accus. ‘coffee – coffees’ pattern belongs to one of the masculine noun paradigms with relatively few members. These facts and the fact that there are more feminine nouns than masculine nouns (Mackridge 1985: 52) seem to support the likelihood that an analogizing tendency is operating here.

5. * Eghrapse ta noumera **stin** pinaka, prin arhisi na milai stous mathites.
[prep. + fem., accus., sing.]

Correct form - Eghrapse ta noumera **ston** pinaka, prin arhisi na milai stous mathites.
[(prep. + masc., accus., sing.)]

“She wrote the numbers **on the** blackboard before she started to talk to the students.”

In #5 above, the feminine accusative article *tin* precedes the masculine lexical item *pinaka*, in the accusative case. The *-as* in *pinakas* belongs to one of the three major masculine noun paradigms⁴³; however, in the accusative case, where the *-s* is dropped from the ending, *-a* can signify either masculine or

⁴² See Table I chapter I

⁴³ See Table I, chapter I

feminine gender. The conclusion that *-a* in the accusative is more frequently occurring as a feminine ending than as a masculine ending is supported by the following two facts. The *-a* ending characterizes one of the two major feminine noun paradigms (while *-as* is one of three major masculine noun paradigms) and there are more feminine nouns than masculine nouns (Mackridge 1985: 52).

3.3.3 Hypothesis 10: Marked Nouns Will be Regularized to the Unmarked Form, as Indicated by Incorrect Agreement between Marked Noun Endings and Unmarked Pronouns or Adjectives.

There are five sentences in this section. All of the sentences contain errors in agreement between nouns and pronouns or nouns and adjectives in terms of gender across coordinate clauses. Acceptance of these sentences would indicate attrition.

1. * Idhe dhio **leoforous** apekso ala dhen iksero **pyo** na pari.

[masc., accus., sing.]

Correct form - Idhe dhio **leoforous** apekso ala dhen iksero **pya** na parei.
[fem., accus., pl.] [fem., accus., sing.]

"She saw two **avenues** outside but she didn't know **which** to take."

I leoforos belongs to the feminine noun class delineated in Table 2, chapter 1.

Although feminine in form, it follows the pattern of the unmarked masculine noun in both the nominative case and accusative case endings, *-os/-i* and *-o/-ous* respectively.

Leoforous appears to follow the unmarked default masculine noun paradigm⁴⁴.

It is preceded by the numeral *dhio* ('two'), which remains unchanged regardless of gender or case, and is used in lieu of the article. Thus, the first clause appears to be well-formed as does the second clause due to the presence of *pyo* 'which', which follows the same unmarked pattern. These facts may account for the acceptance of this sentence.

2. *Vrikan pende **eisodhous** ala **kanenas** dhen odhighouse ston proton orofu.
[masc., nom., sing.]

Correct form - Vrikan pende **eisodhous** ala **kamia** dhen odhighouse ston proton orofu.

[fem., accus., pl.] [fem., nom., sing.]

"They found five **entrances** but none lead to the first floor."

Similarly, *i eisodhos* is listed as an example in Table 2, Chapter 1. . Although feminine in form, it follows the pattern of the unmarked masculine noun in both the nominative case and accusative case endings, *-os/-i* and *-of/-ous* , respectively. Because of its *-ous* ending, this lexical item appears to follow the unmarked default masculine noun paradigm, since the numeral *pende* ('five'), which remains unchanged regardless of gender or case, is used in lieu of the article, which would normally indicate gender. In addition, the presence of *kanenas* 'none', which follows the same unmarked pattern, in the adjoined clause makes the sentence appear syntactically well-formed. These facts may account for the acceptance of this sentence.

3. *Ihe **khrei** persi to kalokeri ala **ligvi** eminan ya fetos.
[masc., nom., pl.]

⁴⁴ See Table 1, chapter 1

*The **khrei** persi to kalokeri ala **ligha** eminan ya fetos.
 [neut., accus., pl.] [neut., nom., pl.]

“He had **debts** last summer but **few** remained for this year.”

To khreos follows the pattern of *to dhasos* and *to edhafos* in sec.3.3.1. above. As such, its accusative plural form is *ta khrei*. Although it does not follow the unmarked masculine noun paradigm, *-os/-i* and *-o/-ous*, it does appear to agree with *ligyi*, which does follow that pattern, in the adjoining clause. This may account for its acceptance.

4. * Irthan dhio **alepoudhes** pou itan **pinasmeni** ke piran to kreas.
 [masc., nom., pl.]

Correct form - Irthan dhio **alepoudhes** pou itan **pinasmenes** ke piran to kreas.”
 [fem., nom., pl.] [fem., nom., pl.]

“Two **foxes** who were **hungry** came along and took the meat.

Here the masculine adjective *pinasmeni*, ‘hungry’ is used to modify *alepoudhes*, which is feminine. This lexical item, *alepoudhes*, is marked in two ways: first, although it apparently carries the common *-es* feminine plural ending, it, essentially, follows a less frequently-occurring masculine pattern, as demonstrated by *o kafes- i kafedhes*: second, although a fox can be either male or female, the lexical item in Greek can only be female. This means that there is no specific way, grammatically speaking, to refer to a male fox. This is highly unusual, especially in a language like Greek, where the unmarked form is masculine, both in singular and plural, i.e. the plural of two things, one of which is masculine and the other feminine, is always masculine. Another fact about Greek that makes this lexical item marked is the following: when a masculine and

feminine animate noun share a lexical item. the noun is always masculine in form and the feminine counterpart keeps the masculine ending but is simply preceded by a feminine article rather than a masculine article, e.g. *o ithiopoulos – i ithiopoulos*, 'male actor' and 'female actor,' respectively.

5. * 'Vrike tesaris **lekedhes** pou itan **mavres** ke **aspres**."
[fem., accus., pl.]

Correct form - Vrike tesaris **lekedhes** pou itan **mavri** ke **aspri**.
[masc., accus., pl.] [masc., accus., pl.]

"He found four **stains** which were **black** and **white**."

Lekedhes is masculine plural, similar to *kafedhes* but dissimilar to *alepoudhes*⁴⁵. Therefore, any adjective that modifies it should be masculine and plural in form. In the nominative case, such an adjective would have a – *i* ending as shown in the sentence in the correct form above. Instead, *mavres*, 'black', and *aspres*, 'white' are feminine plural and, thus, fail to agree. As aforementioned, the –*es* ending is the unmarked feminine plural ending. Thus, analogizing on the unmarked feminine form coupled with apparent agreement, i.e. similarity of –*es* ending, might the acceptance of these adjectives here.

3.3.4 Hypothesis 11: Marked Case Endings on Nouns in Postverbal Position Will Be Regularized to the Unmarked Case in this Position, Accusative.

⁴⁵ See tables 2 and 5 in chapter 1.

There are two sentences in this section. These sentences contain errors in the case of the noun. Thus, these deviate from the morpholexical errors above, but rather belong to the category of morphosyntactic errors. Acceptance of these sentences would indicate attrition.

1. * Iparhoun para pano apo ikosi **anthropous** pou irthan argha sto parti.
[masc., accus., pl.]

Iparhoun para pano apo ikosi **anthropi** pou irthan argha sto parti.
[masc., nom., pl.]

“There are more than twenty **people** who came to the party late.”

2. * Ihan gyini **dhikighorous**, ala ithelan na alaksoun epangelma.
[masc., accus., pl.]

Ihan gyini **dhikighori**, ala ithelan na alaksoun epangelma.
[masc., nom., pl.]

“They had become **lawyers**, but they wanted to change professions.”

In the above sentences, both *anthropi* and *dikighori* are in the nominative case: they are what traditional grammarians call ‘predicate nominatives’, since they follow the verbs, *ime*, ‘to be’ and *gyino*, ‘to become.’ Their acceptance in their accusative case form appears to be a result of an analogizing process with non-stative verbs.

Chapter 4

4. Methodology

4.1 Background of the Experiment

The two major areas hypothesized to be vulnerable to attrition are the lexical and the morphological components of the language. Both are tested here in a three-part experiment described in detail below.

4.2 Subjects

There were two groups of subjects: Greek-American bilinguals who reside in New York and Greek monolinguals who reside in Greece.

4.2.1 Experimental Group

Data was collected in New York from the experimental group by the researcher. Each subject was tested on an individual basis. After a certain number of subjects were eliminated due to problems arising during testing, the total number of experimental group subjects remains at 57 participants, all of whom are adult native speakers of Greek who attended, at least, elementary school in Greece. They arrived in the U.S. at various ages between 8 and 32 and have been in New York from 10 to 40 years. Although they have varying

degrees of proficiency in English, some can be considered, according to their self-assessment, their educational level in Greek and their life-long exposure to Greek, Greek-dominant, while others can be considered, according to the same criteria, English-dominant. In a study of Dutch immigrants living in France, de Bot, Gommans & Rossing (1991: 87) focused on two factors that had been identified in language attrition literature to affect language loss and maintenance, namely, amount of contact with L1 and time elapsed since emigration. Interestingly, they also took age of emigration into consideration for one of their selection criteria was emigration after seventeen, at which age acquisition of the first language would be complete, de Bot, Gommans & Rossing (1991: 88). Similarly, the four criteria that were important in my choice of participants: age of arrival, number of years in the country, extent of contact with English over time and number of years of education in English. Regarding age of arrival, it is assumed that participants who arrived between 12 and 15 will have completed the acquisition of their L1 but may not be diligent at keeping up their L1 literacy skills, especially if they arrived at the younger end of the spectrum. The maintenance of literacy skills would most likely be a deterrent to attrition since reading and writing the L1 would provide additional opportunities for continued contact with the language. Both Berman & Olshtain (1983) and Olshtain (1986, 1989) examined younger and older Hebrew-speaking children who have acquired L2 English in an English environment and concur that the greater stability of the older children's linguistic system can be attributed to their level of literacy in the language undergoing attrition. By the same token, the acquisition of reading and

writing skills in English (L2) would promote greater stability of the L2, which would most likely be accompanied by a concurrent instability in the younger children's⁴⁶ L1 linguistic system.

Concerning the number of years in the country, it is assumed that the longer the participants have been in the U.S. the more exposure they will have to English. The extent of this contact with English will, of course, also be measured. Furthermore, the length of time that they have been in the U.S. is in direct proportion with the length of time that they have not been immersed in an L1 environment.

4.2.2 Control Group

Twenty-one Greek adults constitute the control group. All participants were between the ages of 19 and 60. Twenty-six volunteers were tested, but five were eliminated due to problems with testing procedures. The test was administered on an individual basis to each of the participants by a research assistant in Greece. All of the participants are native speakers of Greek who live in Greece and have had very little or no exposure to English. They live primarily in the environs of Athens, the capital, or the environs of Thessaloniki, the second largest city in Greece, located in the north. The urban dialects of these two cities are thought to exemplify the standard⁴⁷. Although, there are features of the Thessalonikian

⁴⁶ In this case, these children would be pre-pubescent or at least in early adolescence.

⁴⁷ This is discussed in further detail in Chapter 2.

dialect that diverge from the standard, they are not present in any of the sentences of this study.

4.3 Test Type and Materials

4.3.1 Type: Grammaticality Judgment

Grammaticality judgment (GJ) tasks were used in all three parts of the experiment. Subjects judged sentences grammatical or ungrammatical in Greek. Stimulus sentences were designed by the researcher, a second-language speaker of Greek, and reviewed by two native speakers of Greek. Response time to stimulus sentences was limited so as to ensure that informants would be making grammaticality judgments that tapped their linguistic knowledge rather than their metalinguistic knowledge. To this purpose each sentence heard had to be judged within five seconds. To avoid having to repeat test sentences that were not clearly heard due to lack of focus, sentences in part I and part II were printed on the answer sheet for easy reference. Since less evidence of attrition was expected in part III, sentences in this part were only heard and not seen to make the task more challenging. Similarly, each sentence heard had to be judged within five seconds.

4.3.2 Materials

The test is made up of 3 parts. 30 sentences constitute the first part: 6EG, 6EG, 6*EG, 6E*G, 6*E*G. All 30 sentences are preceded (on tape only) by a

context sentence that ensures that the meaning of the test sentence is clear. The first group of EG sentences consists of 3 sentences with a common, frequent, and concrete meaning of the verb *perno*, 'take,' and 3 sentences with a common, frequent and concrete meaning of the verb *spazo*, 'break.' The second group of EG sentences also has 3 sentences with the verb *perno* and 3 sentences with the verb *spazo*. These sentences differ from those in the first group in that they consist of senses or meanings of these verbs that are less concrete, usually less frequent and more metaphorical. The third group of sentences consists of 3 *EG sentences with more metaphorical meanings of *perno* and, similarly, 3 *EG sentences with more metaphorical meanings of *spazo*. The fourth group is similar to the third group but differs from it only in that the sentences are grammatical in English but ungrammatical in Greek, E*G. The fifth and final group consists of sentences that are similar to those in the second, third, and fourth groups in that they contain metaphorical uses of the verbs but they differ in that they are neither grammatical in English nor in Greek, *E*G. Nevertheless, they are naturally-occurring and, therefore, grammatical in languages other than English and Greek. In an attempt to reduce the possible effects of length on judgment making, the large majority of sentences lie in the range of 4 to 6 words and the number of syllables varies primarily from 6 to 12.

4.4 Procedures

4.4.1 Part 1

Preceding the actual test, the informants were given instructions and 12 examples on tape and on paper to familiarize them with the format and content of the test. Since each sentence was preceded on tape by a context sentence. They heard 24 sentences but saw (on a sheet of paper before them) only 12⁴⁸. Next to each example sentence was a line with an 'X' or a check, ' / ' marked on it appropriately ('X' signified *dhen leghete sta ellinika* 'it is not said in Greek,' while a check, ' / ' signified *leghete sta ellinika* 'it is said in Greek').

For the first part of the test, the informants listened to 60 sentences (a context sentence for each of the thirty test sentences on the tape) in Greek. The sentences were presented in pseudorandomized order on tape, read by a native speaker with 5-second pauses between test sentences. The test sentences were printed, in numbered order, on a sheet of paper, which informants could use for reference. In sequence, the informants responded, on the sheet of paper⁴⁹ before them, to each sentence they heard. The form of the response was a check (/) for 'it is said in Greek' and an (X) for 'it can not be said in Greek'.

4.4.2 Part 2

The second part consists of a group of 48 (12EG, 12*EG, 12E*G, 12E*G) sentences with opaque expressions or sayings⁵⁰. The procedure was the same as in the first task; however, there were no example sentences which preceded this

⁴⁸ See appendix 3

⁴⁹ See appendix 4

⁵⁰ See appendix 5

part. Rather, the examples which preceded the first part sufficed as examples for this part, too, since the format was the same.

4.4.3 Part 3

A practice task preceded the third part of the test. It consisted of 6 sentences which contained 3 grammatical sentences and 3 ungrammatical sentences. The ungrammatical sentences contained errors in number in the noun phrase. There were no context sentences since the focus of this task is the morpholexical and morphosyntactical grammaticality of the test sentence. These sentences were heard and seen, as in the previous practice task. Similarly, next to each example sentence was a line with an 'X' or a check marked on it appropriately (as in the other parts, 'X' signifies 'it is not said in Greek,' while a check signifies 'it is said in Greek').⁵¹

The third part of the test consists of a group of 36 (18G, 18*G) sentences⁵². Sixteen of the ungrammatical sentences contain gender errors in the noun phrase, i.e. nominal inflection, article or numeral, or in pronouns or adjectives outside the noun phrase, which must agree with the constituents of the noun phrase in terms of number, gender and case. The remaining two ungrammatical sentences contain an error in case in the noun phrase. There were no context sentences and the informants did not see the sentences that they heard. After hearing each one,

⁵¹ See appendix 6

⁵² See appendix 7

they marked a (√) or an (X) on a line on a sheet of paper⁵³ in front of them next to a number which corresponds to the number of the sentence on the tape.

4.5. Order of Presentation

All three parts of the test were administered in order on the same day. The questionnaire was filled in after the test was completed.

4.6 Scoring

Scoring was straightforward. Subjects were assigned a correct score when they correctly identified a test item as either grammatical or ungrammatical. They were assigned an incorrect score when they incorrectly identified an item as grammatical or ungrammatical.

4.7 Questionnaire

4.7.1 Background

The sociolinguistic factors presumed to have an effect on attrition in this study are age of arrival in the U.S., length of stay in the U.S., extent of contact with Greek, use of Greek, and extent and nature of dominance in Greek. This assumption guided the development of the questionnaire. All experimental group (or Greek-American) participants arrived between the ages of 9 - 32, encompassing a range from completion of acquisition in Greek to possession of

⁵³ See appendix 8

high-level literacy skills in Greek. In this regard, both level of education in Greek and level of education in English play a part. In terms of age, the assumption is that the younger the age of arrival, the higher the rate of attrition. In terms of level of education, the assumption is that the higher the level of education in the first language, the lower the rate of attrition, since a high level of literacy skills is expected to contribute to language maintenance. All participants have been in the U.S.A. for nine years or more. The assumption is that the longer the number of years in the U.S.A., the higher the rate of attrition. Extent of contact with Greek is assumed to affect attrition. That is, the less contact with Greek, the higher the rate of attrition. Similarly, extent of Greek language use is assumed to affect attrition. That is, the less Greek is used and the fewer the range of circumstances, the higher the rate of attrition. Lastly, since all participants are bilinguals, language dominance is assumed to affect attrition. Namely, the greater the degree of English-language dominance, the higher the rate of attrition in Greek.

4.7.2 Types: Experimental Group and Control Group

Two questionnaires were administered, one to the experimental group (eg)⁵⁴ and another to the control group (cg)⁵⁵. The cg questionnaire consisted of 29 questions, while the eg questionnaire consisted of 36 questions. Although both questionnaires were designed for the purpose of evaluating the effect of

⁵⁴ See appendix 2

⁵⁵ See appendix 1

sociolinguistic variables on the attrition process, there are different emphases in each.

4.8 Sociolinguistic Variables and the Questionnaires

4.8.1 Age of Arrival in the U.S.

The three questions (#1, #7, #8) regarding age of arrival in the eg questionnaire provide information about when acquisition of Greek in an immersion environment ended. Of course, this is not to say that acquisition of Greek necessarily or categorically ends with the participants' move to the New World. Rather, this move implies a turning point in degree of exposure to Greek or at least to the Standard Greek used in Greece. For the large majority of informants that come here as children or adolescents, their education will resume in English. Although many do continue to develop their literacy skills in Greek through after-school Greek programs and church activities, this is, as a matter of course, proportionately less than the amount of training they would get in English, since all their academic work would be now in English. In addition to academic English, these informants now get exposure to everyday spoken English through peers, instructors, the media and the neighborhood (The assumption here being that even in a Greek enclave, other languages, especially English, are being spoken by some people, some of the time). The more literate they become in English, the greater the probability that they will become increasingly proficient in English. Depending on their literacy level in Greek and

their exposure to Greek, this increasing proficiency in English could come at a cost to their Greek. That is, Greek attrition may ensue from English dominance.

4.8.2 Length of Stay in the U.S.

Question # 7 (eg) asks when the participant came to the U.S. This year subtracted from the present year yields the number of years the participant has been in the country.

4.8.3 Level of Education

Questions #3, #4, #5 are concerned with the occupational and implied educational background of the participants' parents in the eg questionnaire and additionally, in the cg questionnaire #6 is concerned with the occupational and implied educational background of the participants. The assumption here is that this might be especially helpful in providing information on the level of literacy skills of the informants, particularly in terms of their upbringing.

Questions # 7 (cg) and #5 (eg) are concerned with years of education in each educational institution. In the eg questionnaire, the place of the institution, namely the U.S. or Greece, must be specified. Here level of literacy skills in each language is documented in order to establish a correlation between literacy skills and maintenance of literacy skills in the first language, Greek, and degree of attrition. Since level of literacy skills and maintenance of literacy skills are developed and fostered in an educational setting, age at which an informant left school (# 8, cg; #6, eg) becomes a relevant indicator of level of literacy.

This question also provided information regarding formal educational background in English. It has been observed with the Greeks in the U.S. (Nicolaidis 1989: 126) as it has been with other ethnic populations (Ujeki 1960; Borhek 1970) that as formal education level increases in the majority language of the newly-adopted country, ethnic identity decreases. The effect of this on ethnic language use may be to restrict it, especially in terms of maintenance of literacy skills. This would also work in the reverse. That is, if upon closer examination of formal education background (# 5 eg), a number of years of formal education took place in English, this would provide evidence of the strength of, and perhaps dominance of, English literacy skills over Greek literacy skills. This question is examined more closely in #13 (eg) and #14 (eg), which ask about age when English language studies began and manner (type of setting) of study. Question #15 asks for a self-evaluation of age at which proficiency in English was achieved.

4.8.4 Extent of Contact

Questions #9 (cg), # 10 (cg), and #11 (cg) ask whether the participant has lived abroad, where the participant has lived abroad and how long s/he has lived abroad. The purpose of these questions is to learn whether any members of the control group have lived in an English-speaking country, where they would have had constant exposure to or immersion in English. Of course, any informant who answered affirmatively would be eliminated.

Similarly, questions in the eg questionnaire ask informants, who live in an English-speaking country, about contact with and exposure to Greek. Questions #9 (eg) and #10 (eg) ask where and with whom the participant lived when s/he came to the U.S.A., while questions # 32 - # 35 ask about frequency and extent of oral/aural (telephone) and written (letters) contact with friends and relatives in Greece. In addition, questions #29 - #31 ask about frequency and extent of visits back to Greece. The purpose of these questions is to document the extent of Greek maintenance upon arrival and soon after in terms of language spoken at home and in the neighborhood and, then further, continued contact with Greece and Greek relatives in Greece.

Questions #12 - 17 (cg) ask about knowledge of English, age at which English study began, how English was learned, how many years English was studied, how often and where English is used. Such questions are necessary since, characteristically, Greeks learn English as a foreign language in school and will often continue their English studies in a private language institute after school. Furthermore, Greeks have access to English through the media, tourists and traveling. Once again, any participant who has had more than a little contact with English would have to be eliminated.

Extent of contact with English is also investigated in the eg questionnaire. Question #12 has two parts. Namely, it asks about the percentage of friends that were non-Greek while they were children and while they were adolescents, the assumption being that if their friends were non-Greek, they would be English

speaking. Similarly, question #19 asks about language used with one's parents, grandparents, siblings and Greek-speaking friends.

4.8.5 Language Use

An attempt to measure receptive or passive English language use is reflected in questions #17 - #25 in the cg questionnaire. These questions ask about place (e.g. work, home etc.) where English is used, and whether newspapers in English are read, TV in English is watched, and music in English is listened to either on the radio or from another source. Similarly, an attempt to measure receptive or passive English and/or Greek language use is reflected in the eg questionnaire in questions # 23 - #27.

Spontaneous language use in basic, daily operations is also investigated in the experimental group in the form of self-evaluation in question # 17, which asks which language is used spontaneously in counting, adding and subtracting, expressing anger, and dreaming.

A question about the language of the home can be found in both questionnaires, #26 in cg and # 28 in eg.

4.8.6 Language Dominance

Language dominance is investigated in the experimental group in the form of self-evaluation. Question # 16 (with a, b, c parts) asks about language

(Greek, English, equal) dominance in the four skills of reading, writing, listening and speaking.

4.8.7 Language Preference

Language preference is investigated in the experimental group in terms of one question (#36), which asks which language the participant would retain if s/he were forced to give up one of his or her languages.

Chapter 5

5. Results

5.1 Background

It was predicted that for the experimental group of this study, L1Greek-L2 English bilinguals, attrition would be found in the lexical and morphological components of their L1, Greek. Results indicate that this indeed was the case. While the control group, L1 Greek monolinguals, scored 98% or better on most of the sentences, the experimental group scored significantly lower on most of the sentences. Since sentence judgments in this study required correct evaluation of grammatical and ungrammatical sentences in Greek, results indicate that the knowledge of the Greek of the Greek-English bilinguals is significantly different from that of the Greek of the Greek monolinguals. This changed state marks one stage in the attrition process.

Based on the hypotheses in chapter 3, judgments on separate groups of test items were measured. The results of subjects' judgments on each group of items are given in the tables below. T-tests were the statistical means that yielded the results in all cases except in table 12b, which shows the comparison between judgments on metaphorical and literal verb senses. In this case, one-way analysis of variance was used.

5.2.1 Hypothesis 1: We hypothesize that perception of metaphorical verb senses of the L1 in Greek-English bilinguals is vulnerable to attrition. Thus, ungrammatical senses of Greek verbs will be accepted by the attriter, especially if the equivalent senses in the L2 are grammatical (E*G).

Table 9: Percentage Correct on Perception of Metaphorical Verb Senses under the Influence of L2 Grammatical Group Test Items (E*G)

	Greeks n=21	Greek-Americans n=57
Mean	5.8	3.15
SD	.4024	1.656
Mean %	96%	52%
P		.000

*p<.05

**p<.005

***p<.000

The six sentences that formed this group of sentences were grammatical in English but ungrammatical in Greek (E*G). Three of these sentences contained the verb, *perno*, and the other three contained the verb, *spazo*. All of the verbs were used metaphorically, as opposed to, literally. As indicated in

the table above, the Greek subjects correctly judged these items as ungrammatical at a rate of 98%. In contrast, the Greek-American subjects correctly judged these items as ungrammatical at a much lower rate, 52%. The difference is significant (.000). Thus, the hypothesis is confirmed; it indicates that perception of metaphorical verb senses is vulnerable to attrition when it is influenced by the grammaticalness of the L2.

5.2.2 Hypothesis 2: Judgments of what is ungrammatical or unacceptable in terms of metaphorical verb senses in the L1 (Greek) will weaken in the attriter. This may occur independent of the influence of ungrammatical or unacceptable L2 (English) equivalent senses, (*E*G).

Table 10: Percentage Correct on Perception of Metaphorical Verb Senses under the Influence of L2 Ungrammatical Test Items (*E*G)

	Greeks n=21	Greek-Americans n=57
Mean	5.9	5.2
SD	.3008	1.0399
Mean %	98%	87%
P	.000	

*p<.05

**p<.005

***p<.000

The six sentences that formed this group of sentences were ungrammatical in both English and Greek (*E*G). Three of these sentences contained the verb, *perno*, and the other three contained the verb, *spazo*. All of the verbs were used metaphorically, as opposed to, literally. As shown in the table above, the Greek subjects correctly judged these items as ungrammatical at a rate of 98%. In contrast, the Greek-American subjects correctly judged these items as ungrammatical at a lower rate, 87%. The difference is significant (.000). It indicates that perception of metaphorical verb senses is vulnerable to attrition.

5.2.3 Hypothesis 3: Judgments of what is grammatical or acceptable in terms of metaphorical verb senses in the L1 (Greek) will weaken in the attriter. This may occur even when equivalent L2 (English) senses are ungrammatical or unacceptable. Thus, grammatical uses of Greek verbs may be rejected when equivalent senses in the L2 are ungrammatical.

Table 11: Percentage Correct on L1 Metaphorical Verb Perception under the Influence of L2 Ungrammatical Test Items (*EG).

	Greeks n=21	Greek-Americans n=57
Mean	5.87	5.52

SD	.3586	.7098
Mean %	98%	92%
	.009	

*p<.05

**p<.005

***p<.000

The six sentences that formed this group of sentences were ungrammatical in English but grammatical in Greek (*EG). Three of these sentences contained the verb, *perno*, and the other three contained the verb, *spazo*. All of the verbs were used metaphorically, as opposed to, literally. As indicated in the table above, the Greek subjects correctly judged these items as grammatical at a rate of 98%. In contrast, the Greek-American subjects correctly judged these items as grammatical at a lower rate, 92%. The difference is significant (.009). This was predicted. It indicates that perception of grammatical metaphorical verb senses is vulnerable to attrition when it is influenced by ungrammatical L2 verb senses.

5.2.4 Hypothesis 4: Metaphorical verb senses may be more vulnerable to attrition than literal verb senses. If so, then metaphorical senses of verbs will have a lower acceptance rate by the attriter than literal senses of the same verbs (EG).

Table 12a below give results for perception of metaphorical verb senses (EG) and literal verb senses (EG) for both the experimental and control groups. Table 12b gives the differences between the experimental and control groups in each task and shows no significant interaction between the two groups.

Tables 12a,b: (EG) Metaphorical Verb Sense (TBGRP2) > Literal Verb Sense (TBGRP1)

		Mean	SD	Mean%
Gr	TBGRP1	5.57	.8106	92.8%
Gr-Am	TBGRP1	5.59	.6777	93.1%
Gr	TBGRP2	5.3	.9661	88.3%
Gr-Am	TBGRP2	5.5	.8041	92%

	Sum of squares	df	Mean square	f	Sig.
Gr	1.427	3	.476	.950	.418
Gr-Am	1.050	3	.350	.485	.693

The six sentences that formed TBGRP1 were grammatical in both English and Greek (EG). Three of these sentences contained the verb, *perno*, and the other three contained the verb, *spazo*. All of the verbs were used literally. As indicated in the table above, the Greek subjects correctly judged these items as grammatical at a rate of 92.8%. Similarly, the Greek-American subjects correctly judged these items as grammatical at a rate of 93.1%. The difference is not significant. That is, both the Greek subjects and the Greek-American subjects judged the *perno/spazo* literal sentences correctly with very nearly the same degree of accuracy.

The six sentences that formed TBGRP2 were grammatical in both English and Greek (EG). Three of these sentences contained the verb, *perno*, and the other three contained the verb, *spazo*. All of the verbs were used metaphorically in the sentences. As indicated in the table above, the Greek subjects correctly judged these items as grammatical at a rate of 88%. In contrast, the Greek-American subjects correctly judged these items as grammatical at a higher rate, 92%. The difference is not significant. That is, both the Greek subjects and the Greek-American subjects judged the *perno/spazo* metaphorical sentences correctly with a similar degree of accuracy.

In comparing the results of both groups of subjects on the literal vs. metaphorical *perno/spazo* sentences, we find no significant difference. These results do not confirm our hypothesis. Thus, according to these findings, perception of metaphorical verb senses is not more vulnerable to attrition than perception of literal verb senses.

5.3.1 Hypothesis 5: We hypothesize that L1 attriters will accept (L2) English opaque expressions or sayings which are ungrammatical in their L1, Greek (E*G). As previously stated, for the purposes of this experiment, these expressions have been translated into Greek.

Table 13: Percentage Correct on Perception of Opaque Expressions under the Influence of L2 (grammatical) (E*G).

	Greeks n=21	Greek-Americans n=57
Mean	3.7	1.36
SD	1.189	1.38
Mean %	74%	27%

.000

*p<.05

**p<.005

***p<.000

The five sentences containing opaque expressions that formed this group of sentences were grammatical in English but ungrammatical in Greek (E*G). As indicated in the table above, the Greek subjects correctly judged these items as ungrammatical at a rate of 74%. In contrast, the Greek-American subjects correctly judged these items as ungrammatical at a much lower rate, 27%. The difference is significant (.000). This was predicted. It indicates that perception of

opaque expressions is vulnerable to attrition when it is influenced by the grammaticalness of L2 expressions.

5.3.2 Hypothesis 6: We hypothesize that the L1 attriter will accept opaque expressions that are ungrammatical in their L1, Greek, even if equivalent expressions are ungrammatical in their L2, English (*E*G).

Table 14: Percentage Correct on Opaque Expressions under the Influence of L2 (ungrammatical) (*E*G).

	Greeks n=21	Greek-Americans n=57
Mean	11.76	10.77
SD	.7003	1.9181
Mean %	98%	89%
P		.024

*p<.05

**p<.005

***p<.000

The twelve sentences that formed this group of sentences were ungrammatical in both English and Greek (*E*G). All of these sentences contain opaque expressions. As indicated in the table above, the Greek subjects correctly

judged these items as ungrammatical at a rate of 98%. In contrast, the Greek-American subjects correctly judged these items as ungrammatical at a lower rate, 89%. The difference is significant (.024). It indicates that opaque expressions are vulnerable to attrition, even when their equivalents are ungrammatical in the L2. However, as in the case of perception of *perno/spazo* demonstrated in Table 1 and Table 2, the difference between the results in Table 5 and Table 6 show much greater attrition when the equivalent opaque expression are grammatical in English (E*G) than when they are not (*E*G). This will be discussed in chapter 6.

5.3.3 Hypothesis 7: We hypothesize that the L1 attriter will reject L1 grammatical opaque expressions, even if equivalent expressions in the L2 are ungrammatical (*EG).

Table 15: Percentage Correct on L1 Opaque Expressions under the Influence of L2 (ungrammatical) (*EG).

	Greeks n=21	Greek-Americans n=57
Mean	6.95	6.50
SD	.2182	.8889
Mean %	99%	92%
P		.001

*p<.05
 **p<.005
 ***p<.000

The seven sentences that formed this group of sentences were ungrammatical in English but grammatical in Greek (*EG). All of these sentences contain opaque expressions. As indicated in the table above, the Greek subjects correctly judged these items as ungrammatical at a rate of 99%. In contrast, the Greek-American subjects correctly judged these items as ungrammatical at a lower rate, 92%. The difference is significant (.001). It indicates that grammatical L1 opaque expressions are vulnerable to attrition when influenced by ungrammatical L2 opaque expressions.

5.4.1 Hypothesis 8: We hypothesize that marked gender in the L1 attriter will be neutralized (*G) in the noun.

Table 16: Marked Noun Ending Regularization in Gender

	Greeks n=21	Greek-Americans n=57
Mean	4.95	4.0
SD	.2182	1.1259
Mean %	99%	80%
P		.000

*p<.05
 **p<.005
 ***p<.000

The five sentences that formed this group were ungrammatical in Greek (*G) in that the noun and its corresponding article or numeral were in the wrong gender. As indicated in the table above, the Greek subjects correctly judged these items as grammatical at a rate of 99%. In contrast, the Greek-American subjects correctly judged these items as ungrammatical at a much lower rate, 80%. The difference is significant (.000), as predicted. It indicates that gender assignment of the noun is vulnerable to attrition.

5.4.2 Hypothesis 9: We hypothesize that marked gender in the L1 attriter will be neutralized (*G) in the article.

Table 17: Marked Noun Regularization on the Article

	Greeks n=21	Greek-Americans n=57
Mean	4.85	3.5
SD	.3586	1.2410
Mean %	97%	70%
P		.000

* $p < .05$
 ** $p < .005$
 *** $p < .000$

The five sentences that formed this group were ungrammatical in Greek (*G) in that the article in the noun phrase was in the wrong gender. As indicated in the table above, the Greek subjects correctly judged these items as ungrammatical at a rate of 97%. In contrast, the Greek-American subjects correctly judged these items as ungrammatical at a much lower rate, 70%. The difference is significant (.000), as predicted. It indicates that gender assignment of the article is vulnerable to attrition.

5.4.3 Hypothesis 10: We hypothesize that agreement between noun-adj. and noun-pro in the L1 attriter will break down due to neutralization (*G) of the adjective or pronoun in the agreement paradigm.

Table 18: Marked Noun Regularization in Agreement with Pronouns and Adjectives

	Greeks n=21	Greek-Americans n=57
Mean	4.95	3.6

SD	.2182	1.3196
Mean %	99%	72%
P	.000	

* $p < .05$

** $p < .005$

*** $p < .000$

The five sentences that formed this group were ungrammatical in Greek (*G) in that the adjectives and pronouns in long-distance agreement with the noun were in the wrong gender. As indicated in the table above, the Greek subjects correctly judged these items as ungrammatical at a rate of 99%. In contrast, the Greek-American subjects correctly judged these items as ungrammatical at a much lower rate, 72%. The difference is significant (.000), as predicted. It indicates that agreement of constituents of the noun phrase across clauses is vulnerable to attrition.

5.5.1 Hypothesis 11: We hypothesize that case in the L1 attriter will be neutralized in nouns in postverbal position.

Table 19: Marked Noun Ending Regularization in Case

Greeks
n=21

Greek-Americans
n=57

Mean	1.9	1.59
SD	.3008	.6228
Mean %	95%	79%
	.005	

* $p < .05$

** $p < .005$

*** $p < .000$

The two sentences that formed this group were ungrammatical in Greek (*G) in terms of case, accusative case for nominative case. As indicated in the table above, the Greek subjects correctly judged these items as ungrammatical at a rate of 95%. In contrast, the Greek-American subjects correctly judged these items as ungrammatical at a much lower rate, 79%. The difference is significant (.005), as predicted. It indicates that case assignment on the noun phrase is vulnerable to attrition.

5.6 Sociolinguistic Variables: The following sociolinguistic variables, hypothesized to affect attrition, were analyzed in relation to test results.

Table 20: Correlations of Sociolinguistic Variables and Test Results (Proportion of Correct Responses)

	Age of arrival	age	years in the U.S.	Edu. in Greece
T/B (E*G)	.312*	-.225	-.264*	.456**
T/B (*E*G)	.332*	-.260	-.301*	.350**
T/B (*EG)	-.001	-.280*	-.276*	.202
Opaque (E*G)	.146	-.184	-.201	.209
Opaque (*E*G)	.159	-.282*	-.300*	.379**
Opaque (*EG)	.077	-.350**	-.356**	.063
Gender (noun)	.402**	-.164	-.216	.327*
Gender (articles)	.341**	-.032	-.077	.195
Gender (agreement)	.370**	-.171	-.219	.495**
Case	.405**	-.072	-.125	.309*

As indicated above, in general, the older the participants were when they arrived, the less accurate they were in correctly judging ungrammatical Greek sentences and the less accurate they were in correctly judging grammatical Greek sentences, though to a lesser degree. Number of years in the country and education in Greece also influenced accuracy in correctly judging ungrammatical Greek sentences and grammatical Greek sentences. Age also emerged as a factor, but to a lesser extent.

Chapter 6

6. Discussion

6.1 Introduction

In the first part of this chapter, we will discuss how the results inform first language attrition theory in the context of bilingualism. In particular, we will focus on ways in which the findings shed light on L2 influence on perceptions of L1 metaphorical verb senses and opaque expressions and L1 morpholexical and morphosyntactic leveling.

In the second part of this chapter, we will discuss how the sociolinguistic variables relate to L2 influence on perceptions of L1 metaphorical verb senses and opaque expressions and L1 morpholexical and morphosyntactic leveling.

6.2 Attrition in the Lexicon: Metaphorical Verb Senses & Opaque Expressions

For purposes of the following discussion and due to the similarity in their content, Part 1 and 2 of the test will be referred to as the first part of the experiment, while Part 3 will be referred to as the second part of the experiment.

As we have seen in chapter 4, the first part of the experiment involves the lexicon, including lexical chunks, such as opaque expressions, while the second part of the experiment involves the morpholexical and morphosyntactic areas of

the language. As expected, instability in the L1 system manifested itself in these areas, specifically in terms of uncertainty concerning what is ungrammatical and uncertainty about what is grammatical in Greek.

As discussed in chapter 2, the study of lexical attrition is not new. However, the area of the lexicon under scrutiny in this study is a narrow one and the degree of attrition it undergoes is measured in terms of perception as opposed to production, which is a more common mode through which attrition has been examined and documented⁵⁶. Using perceptions of grammaticality and ungrammaticality to tap underlying linguistic knowledge has well-documented advantages. Although a corpus or elicited lexical item in a production task may reflect both knowledge of and lack of knowledge of what is grammatical, production tasks are much less successful at providing insights into knowledge of what is ungrammatical⁵⁷. In addition, since my objective is neither to assess the retrievability of infrequently-occurring lexical items⁵⁸ nor to elicit a particular set of lexical items in a highly controlled context, production tasks⁵⁹ would not be appropriate. A third advantage has to do with the nature of the response. That is, a written symbolic response (an 'X' or a check mark) to a sentence heard and read minimizes the possibility of a performance error, which might occur in a written or oral response. A fourth advantage of grammaticality judgments is that they allow for the inclusion of items translated from another language, in this case, English.

⁵⁶ See chapter 2 for a full discussion

⁵⁷ As discussed in chapter 5, the present study has found that these particular L1 attriters are less certain of what is ungrammatical in Greek (when the lexical items are grammatical in English) than they are of what is grammatical in Greek.

⁵⁸ See chapter 2 for a detailed description of Olshtain & Barzilay's study of lexical retrieval difficulties among Americans living in Israel.

⁵⁹ See 2.1.2 for a survey of studies on lexical attrition, including those using production tasks.

the participants' L2. Acceptance of such items confirms L2 influence, which was one of the objectives of the present study. Thus, perception is a more direct route to knowledge representations.

This view of perception can be compared to the term intuition in Coppieters 1987 investigation of the competence of near-native speakers. In his discussion of competence, he makes a clear distinction between language use and the underlying grammar as reflected by speakers' intuitions. He claims that these two levels of language enjoy a relative independence (Coppieters 1987: 544). Thus, similar to the present study, he uses grammaticality judgment tasks to tap his subjects' perceptions of grammatical and ungrammatical sentences. Intuitions on a number of French structures were tested: the distinction between 3rd person pronouns *il/elle* and *ce*, preposed and postposed uses of adjectives, the contrast between the two past tenses in French (imparfait and passé composé), contrastive uses of the prepositions *à* and *de*, some uses of articles, object + predicate constructions, the use of the causative construction and clitic pronouns, the A-over-A Constraint and the noun *de* construction. Results may also be seen as complementary to those discussed here for he showed that American-French bilinguals had different perceptions of grammaticality in the L2 than monolinguals, while this study shows that Greek-American bilinguals had different perceptions of grammaticality in the L1 than monolinguals. That is, just as near-native competence differs from native competence as reflected in perceptions of L2 grammaticality, attriting-native competence or diverging-native competence differs from native competence as reflected in perceptions of L1 grammaticality.

6.2.1 *Perno/Spazo* & Take/Break

The verbs 'take' and 'break' and, similarly, *perno* and *spazo* permit a wide range of senses⁶⁰, as has been discussed in chapter 2 in this paper. This fact allows for a close examination of these uses. In this study, we have attempted a delineation of the changes of many of the uses of *perno* and *spazo* in the L1 system of the Greek-English bilinguals. In addition, we have attempted a description of the influence of the uses of 'take' and 'break' on *perno* and *spazo* uses in these same bilinguals. As indicated in chapter 6, our findings have confirmed these assumed changes.

When compared with their monolingual counterparts, these Greek-English bilinguals rejected⁶¹ certain metaphorical uses of *perno* and *spazo* at the rate of 8%. This rejection points to an underlying instability in the L1 system. It shows that these attriters are no longer as certain as monolingual non-attriters are of what is grammatical in their L1. Incorrect judgments about what is grammatical often characterize L2 learners' interlanguage, a developing system, but when such judgments characterize the L1 perception of speakers who have acquired the language naturally, this suggests that their intact, fully developed system is undergoing changes. That is, the mental grammar of these native speakers is diverging from the steady state of that of native speakers, who are using the language on a regular basis. This perspective suggests that while the developing

⁶⁰As discussed in Katz (1971) and mentioned in chapter 3.

⁶¹In the context of the grammaticality test of this study, rejection of the grammaticality of an item was indicated by judging it ungrammatical.

interlanguage in an individual is indicative of an emerging bilingual state, an attriting or diverging L1 is indicative of a different type of bilingual state. This follows from Cook's (1992) premise that the mind of the bilingual is not like the minds of two monolinguals, but rather that different bilingual minds characterize many kinds of bilingual states or multicompetences. In Cook's definition, multicompetence is a cover-all term for knowledge of more than one language in the same mind, (Cook 1992). However, although Cook allows for 'a less-than-perfect' knowledge of a language in the mind of a bilingual, he only refers to the second and third languages of the bilingual in this regard. This is primarily because his discussion lies in the domain of second language research. Nevertheless, his concept is applicable here. If the L1 knowledge of bilinguals no longer resembles that of native speakers', then a change has occurred, expectedly a shift. The multicompetence of these bilinguals can no longer be characterized as the idealized L1 state and a particular 'interlanguage' L2 state. Rather the multicompetence of the L1 attriting bilingual is marked by an 'interlanguage' L1 state. In sociolinguistic terms, this process is best described as shift. It is widely observed in many of the bilinguals and multilinguals of the former British and French colonies, whose English and French respectively, have become their dominant languages, while their native languages attrite. Although perhaps not sufficiently investigated or documented, bilinguals and multilinguals around the world who are becoming increasingly dominant in a second or third language are attriting in their mother tongue (Mufwene 1998: 112).

Further evidence of how the L1 system is changing can be found in the form of L2 influence on L1. When compared with their monolingual counterparts, these Greek-English bilinguals, accepted certain metaphorical uses of 'take' and 'break' that are ungrammatical in their *perno* and *spazo* translations at a rate of 48%. In fact, the acceptance rate of these grammatical L2 uses was 48% by these L1 attriters. This shows a strong L2 influence on acceptance, especially when compared to results on those uses of *perno* and *spazo* that were neither grammatical in Greek nor in English. For these sentences the acceptance rate was only 13% by the Greek-English bilinguals. Although both of these rates clearly demonstrate an uncertainty by these attriters about what is ungrammatical in their L1, the nearly 50% acceptance rate of the sentences with grammatical L2 uses indicates that L2 uses are perceived as grammatical in the L1 approximately half of the time or in half of the cases. One obvious explanation for this is that these bilinguals are not keeping their languages separate. This can be attributed either to shared storage or difficulty in access or retrieval⁶². A shared lexicon might account for ambiguity about whether a particular lexical item or sense of a lexical item belongs to one system rather than the other in the mind of the attriter. One explanation for this might be found in the extent of L2 use and contact or, put in simpler terms, L2 performance. From this perspective, L2 performance can be seen to have a significant effect on L1 competence. This is in direct contrast with the original notion of competence conceived of by Chomsky, with the diachronic assistance of Saussure. "Chomsky and Saussure were at one in asserting or reasserting the fact that performance presupposes and is causally dependent on

⁶² This will be discussed in further detail in the section below.

competence but not conversely.” Lyons 1996: 16. It is, however, in agreement with more recent perspectives on the interdependence of these modalities. “The acquisition of competence is partly or even wholly dependent upon, and in this sense is a function of, performance and text.” (Lyons 1996: 16). Thus within this framework, L2 performance and text can be said to effect the changes documented here in the L1 underlying system or L1 competence. Both the findings with metaphorical verb senses discussed above and with opaque expressions discussed below attest to this.

Just as use can affect competence, lack of use can also affect competence. This is the other fact that must often be factored into the bilingual equation. Lack of use, in this case lack of L1 use, can result in a weakening competence. As the results of rejection of L1 grammatical sentences discussed above and below indicate, the new L1 competence of these attriters seems to be devoid of certain L1 grammatical sentences, while it includes L1 ungrammatical sentences that are grammatical in the L2. Thus, not only is competence not independent of performance but performance produces changes in competence in additive and subtractive ways.

6.2.2 Opaque Expressions

Similar to the results for *perno* and *spazio* and *take* and *break* are those for grammatical Greek opaque expressions and English opaque expressions translated into Greek. When compared with their monolingual counterparts, these Greek-

English bilinguals, rejected as ungrammatical, see above, those test sentences with opaque expressions that were grammatical in Greek. As with the individual lexical items discussed above, these results indicate uncertainty concerning what is grammatical in the L1 of these Greek-English bilinguals regarding lexical chunks such as these.

The next set of results show the influence of English (L2) opaque expressions on Greek (L1) expressions. The Greek-English bilinguals accepted the English (L2) opaque expressions, when compared to the Greek monolinguals. Most interesting about these results is the fact that the Greek-English bilinguals judged 73% of these sentences as grammatical in Greek. As in the case of the single lexical items, this seems to suggest that L2 performance is influencing L1 competence. One complicating factor, however, is the fact that the Greek monolinguals judged 26% of these sentences as grammatical in Greek. Since in every other category, as the tables in chapter 5 show, the Greek monolinguals accepted ungrammatical sentences in the range of 1% and 4%, the high acceptance rate in this category is unusual. Even though in some cases, Coppieters (1987: 553) found a level of variability as high as 16% from the norm, 26% is considerably higher.

Attempts to make sense of the idioms may explain this high rate. In the pilot test, which preceded this study, the researcher asked participants who judged ungrammatical opaque expressions in Greek as grammatical what they meant in Greek. The response was always incorrect. In fact, they did not know the

expressions but had simply guessed⁶³ at the meaning, always incorrectly. As a result, all the new expressions chosen for the present test were situated at the opaque end of the spectrum, since we hypothesized that transparent expressions would lend themselves more easily to guessing. Nevertheless, the results indicate that guessing was a common strategy employed in this test as well and may be responsible for the high acceptance rate. A clear limitation of this study is that no means for assessing why participants' answered in the way that they did was implemented. Coppieters, in contrast, discussed his participants' judgments with them. An analysis of their comments indicated that the quantifiable data underestimate the enormity of the difference between native and non-native speakers' intuitions, (Coppieters 1987: 557). A follow-up procedure similar to that of Coppieters (1987) would have given useful insights into the process.

6.3 The Bilingual Mind and the Bilingual Lexicon

In classifying the members of the experimental group in this study as bilinguals, we use the broadest meaning of the term. Although they are of varying competencies in their L2, English, they all have receptive and productive proficiency in their L2, which was determined by the following criteria: 1. they were able to take part in an informal two-minute interview in English with the test administrator/interviewer; 2. they have been living in the U.S. for a minimum of

⁶³ This tendency to guess can be attributed to the cognitive flexibility that characterizes bilinguals, according to Cook (1992). This is discussed in further detail in the section just below.

9 years and do not live in Greek enclaves: their exposure to and use of English has been established by their responses to the questionnaire.

For a short, simple and very general definition of bilingualism we turn to Weinreich 1953: 5: "The practice of alternatively using two languages will be called here bilingualism." Another term for and definition of bilingualism was put forth by Cook more recently: "Multicompetence starts when there is systematic knowledge of an L2 that is not assimilated to an L1." (Cook 1992 : 558).

It is maintained in the present study and by many researchers (Hoffman 1991; Cook 1992; Baetens Beardsmore 1986) that bilingual competence or knowledge is essentially different from monolingual competence in each of the two languages involved. Support for this view can be found in Seliger's study of a young girl whose L1 showed the effects of her L2. All of her relative pronouns were simplified to 'that' as a result of the redundancy reduction principle, which states that the L1 grammar is reduced whenever the L2 has a simpler rule. (Seliger 1989: 181-182).

The unique state of the bilingual mind differs from that of the monolingual in four additional ways, according to Cook (1992). The first is metalinguistic awareness. Experiments by Ianco-Worrall (1972) with Afrikaans/English bilinguals and others by Ben Zeev (1977) with Hebrew-Spanish bilinguals provide evidence for increased awareness in semantic knowledge of words in the former group and use of cues in classification tasks in the latter group.

Cook cites two studies which indicate that bilinguals have greater cognitive flexibility than monolinguals. While Landry documented the higher scores of

children who had been in a FLES program for five years in divergent thinking, cognitive flexibility and originality, Lambert, Tucker and d'Anglejan (1978) "showed that immersion children in Canadian schools scored better on the 'unusual tests' of creativity," (Cook 1992: 564). In terms of the present study, this creativity manifested itself in the 'guessing' that the Greek-English bilinguals engaged in when confronted with opaque expressions that were neither grammatical in English nor in Greek.

Directly relevant to the present study is Cook's claim that L2 processing cannot be cut off from L1 processing but rather that bilinguals have "a usable access system for tapping both languages," (Cook 1992: 571). Both Altenberg's study⁶⁴ of 'take/break' *nehmen/brechen* perceptions and the present study of 'take/break' *perno/spazo* perception support this claim. Specifically, both the German-English bilinguals of Altenberg's study and the Greek-English bilinguals of the present study accepted L2 senses of these verbs in their L1.

Further evidence for this claim can be found in idiom use. A study by Blair and Harris (1981) showed that Spanish/English bilinguals understood sentences that were translations of Spanish idioms more quickly than did monolinguals because of their knowledge of Spanish. In her study of lexical access in Spanish-English bilinguals, Garro (1992) found that both English-based calqued senses of verbs and English-based idiomatic expressions were primed through their Spanish associations. That is, these bilinguals, in contrast to the monolingual controls, had developed new senses of these words based on the English senses. One interpretation of this phenomenon has been put forth by Obler and Gjerlow (1999:

131) "In other words, exposure to a new lexicon had caused changes in the mental representation and patterns of interconnection in the lexicon of the first language."

This may also explain the results of the present study, which documents acceptance, by Greek-English bilinguals, of sentences with opaque expressions that were translations from English.

In his review of the findings on hemispheric lateralization, Cook (1992:573) claims that "physical storage of both languages of the bilingual is complexly intertwined." Paradis' model (1997) serves as one example of this: the bilingual's two languages are represented as two language-specific subsystems of a larger system, the language system, in the language areas of the left hemisphere. Other models explaining exactly how the bilingual's languages are interconnected can be found in Kroll & de Groot (1997) and Grosjean (1997). Shared by these models is the belief that although each of the languages of the bilingual is a subsystem, it is a subset of a larger, extended linguistic system. Other models, such as that of Potter, So, von Eckhart & Feldman (1984: 36) claim that "the two lexicons are connected via an underlying 'amodal conceptual system' in their version of this perspective. Similarly, "Schwanenflugel and Rey (1986) argue that semantic priming is mediated by a conceptual system shared by both of the bilingual's languages," Cook 1992: 568).

More interesting and relevant to the discussion at hand is a claim made by Garro (1992: V), who found as result of her study, that "the lexical organization of bilinguals has changed in the L1." Such a change induced by the L2 would

²⁴ A detailed discussion of this study can be found in chapter 3

explain why the participants in the present study have judged English senses of *perno* and *spazo* as well as English opaque expressions as grammatical in Greek.

Another explanation for the apparent interconnectedness of the two lexicons of the bilingual has been offered by Otheguy (1989), who makes a distinction between concepts expressed through linguistic meanings and linguistic meanings themselves. Garro (1992: 50) interprets her study in this light: "these calques are examples of L1 linguistic forms to which meanings which embody concepts of L2 have been added." Perhaps, this best explains how L2 opaque expressions and L2 metaphorical verb senses are judged grammatical in Greek by Greek-English bilinguals who have been living in the U.S. culture for a minimum of 10 years.

6.4 Morphological Attrition

As stated in chapter 2, the focus of this aspect of the study is on morpholexical and morphosyntactic attrition. In the morpholexical area, gender was isolated and tested, while in the morphosyntactic area, case was tested. In both cases, markedness played a role. Specifically, acceptance of unmarked, though ungrammatical, forms characterized the results of this part of the experiment. Unmarked, regular forms were accepted in place of the grammatical, marked forms assigned to the lexical items. This regularizing process is not unusual in bilingual situations. Vago (1991) and Maher (1991) describe this process "as the elimination of opaque constructions in favor of greater

morphosyntactic transparency” (Maher 1991: 81), while Mohan and Zador (1986) suggest that optional or redundant elements are eliminated in these situations. Andersen (1993: 310) claims that the attriter on his “way down from a fully-developed morphological system will use fewer of the grammatical morphemes and will use them in more restricted ways.” Moreover, he expects the least marked meanings to be more accessible and the most marked meanings to be less accessible (1993: 311). Extended to the present study, we found that the least marked forms were more accessible to attriters, regardless of whether they were attached to the right lexical items.

While grammatical gender is distinguished in pronouns and a few noun suffixes in English, Greek has a morphologically complex gender system which extends to the article, noun, adjective and pronoun⁶⁵. Hence, it is not surprising that gender is vulnerable to attrition in Greek, which has 3 genders: masculine, feminine and neuter, in particular when it is in contact with a language, such as English. Nor is there a dearth of literature on languages in contact where the paucity of one morphological gender system influences, in particular simplifies, another⁶⁶. Directly relevant to the present study is David Seaman’s 1972 study of the Greek language and Greek community of Chicago in which gender emerged as the most affected of all grammatical categories. Seaman attributed this finding to the ambiguity of some of the markers in Greek and the contact of Greek grammatical gender with English sex gender (1972: 176).

⁶⁵ See Chapter 1 for article, noun, adjective and pronoun paradigms and discussion.

⁶⁶ For examples, see Dorian 1981; Dressler 1991; Kaufman & Aronoff 1991; Altenberg 1991 among others.

In following the paradigm of the first noun class, the first group of sentences analyzed in this section of the test carries the articles and endings of the unmarked forms rather than the marked forms of their respective classes.⁶⁷ All are neuter but have been rendered masculine in the sample sentences to fit the unmarked pattern. The experimental group judged these sentences grammatical at a rate of 20% as compared to a rate of only 1% by the control group. The second group of sentences contains nouns with grammatical endings preceded by articles of the wrong gender. 30% of the experimental group judged these sentences grammatical as compared to 3% of the control group. Although there is considerably more variability in sentence type, the test sentences in this group all diverge from the marked endings of the correct gender. They are patterned on noun classes with greater membership. The third group of sentences contains pronouns and adjectives which seem to agree with the endings of the nouns because they appear to follow the unmarked pattern. 28% of the experimental group judged these sentences grammatical as compared to only 1% of the control group. The last group of sentences contains 2 verbs marked because of their assignment of nominative case to the complement. The large majority of verbs assign accusative case to their complements, as the verbs in the test sentences ungrammatically do.

The unmarked form is favored in all of the test sentences mentioned above for both psycholinguistic and sociolinguistic reasons. That is, the unmarked form is easier to process and is the frequent product of the regularization and simplification of irregular forms in a language over time. It is also often the

⁶⁷ See Chapter 1, Table 1

preferred form in contact situations, where a clear shift is taking place from a language with greater morphological complexity to one of lesser complexity, e.g. East Sutherland Gaelic to English (Dorian 1981). Bybee also notes that generally alternations are leveled on the basis of the unmarked form, though counter-examples may occur (Bybee 1985:77)

One additional conclusion to be drawn from an examination of these results is that in direct contrast to the effect of the grammaticalness of English on the acceptance of the lexical items in the first two parts of the test, lack of grammaticalness of English shows no effect on correct judgment of the ungrammatical Greek sentences. Hence, according to these results, morphological attrition appears to be an internally-induced language change. As discussed at length in chapter 2, simplification, reduction, and regularization are frequently occurring processes in a wide range of language change situations. Thus, it is not a surprising finding here. Nonetheless, it is worth noting here that the existence of a morphologically-impooverished language such as English in the same mind as a morphologically-rich language such as Greek may result in simplifications in morphological complexity in Greek.

6.5 Sociolinguistic Variables

6.5.1 Introduction

As discussed in detail in Chapter 5, the questions in the questionnaire attempted to assess each participant in terms of age, age of arrival, language contact, language use and language dominance. As a result, questions were

grouped under the above categories. Scores were correlated, in turn, with test scores. All significant results are listed in the table below. As indicated, the variables of interest are limited to four in number and will be interpreted and discussed below.

6.5.2 Age of Arrival

As expected, age of arrival emerged as one of the most significant factors in L1 attrition in six of the relevant categories. Participants in this study arrived between the ages of 8 and 32 with the largest numbers arriving between the ages of 12 and 19 and more than half arriving between the ages of 12 and 17. Specifically, the older the participants were when they arrived, the less accurate they were in correctly judging ungrammatical Greek sentences and the less accurate they were in correctly judging grammatical Greek sentences, though to a lesser degree. Results on each group of sentences as they relate to age of arrival is discussed below.

Scores on E*G T/B sentences revealed that the older the bilingual participants were when they arrived, the higher the proportion (.312*) of correct responses they got. In other words, the older they were when they arrived, the better their sense was of what is ungrammatical in metaphorical verb usage (*perno/spazo*).

Similar results were obtained for the *E*G T/B sentences. The older the bilingual participants were when they arrived, the higher the proportion (.332*) of

correct responses they got. This means that the older they were when they arrived, the better their sense was of what is ungrammatical in *perno/spazo* usage.

Unexpectedly, there was no correlation between age of arrival and correct judgments on opaque expressions. That is, these findings fail to support the general hypothesis, the older the participants were when they arrived, the greater the degree of attrition they would undergo. Nevertheless, results on opaque expressions show⁶⁸ that opaque expressions are vulnerable to attrition, though their degree of attrition cannot be correlated with age of arrival.

There is also a positive correlation between age of arrival and morpholexical maintenance as demonstrated in all three groups of sentences in this category. The first group of sentences all contain nouns with ungrammatical gender morphology (*G). Scores indicate that the older the participants were when they arrived, the higher the proportion (.402**) of correct responses they got.

The second group of sentences all contain articles with ungrammatical gender morphology (*G). Once again, the older the participants were when they arrived, the higher the proportion (.341**) of correct responses they got.

The third group of sentences contains pronouns or adjectives with ungrammatical gender morphology (*G). Their lack of grammaticalness results from the lack of agreement between them and the noun. Finally, the older the participants were when they arrived, the higher the proportion (.370**) of correct responses they got.

Lastly, age of arrival correlates positively with correct responses on morphosyntactic maintenance as demonstrated in the scores on the group of

sentences containing ungrammatical case assignment (*G). The older the participants were when they arrived, the higher the proportion (.405**) of correct responses they got.

As discussed in chapter 5, age of arrival may predict the extent of maintenance or, from another perspective, vulnerability to attrition. That is, the older the participants were when they arrived, the greater the likelihood of their having achieved a higher level of literacy and education. A higher level of literacy and education would foster maintenance. As expected, the converse is also true. The younger the participants were when they arrived, the greater the likelihood of their having achieved a lower level of literacy and education in Greek. When the level of L2 education surpasses that of L1 education, L1 attrition is likely to ensue.

6.5.3 Years in the U.S.

As predicted, number of years in the U.S. emerged as one of the most significant factors in L1 attrition in many of the relevant categories. This coincides with Waas (1996: 171) finding in her study of first language attrition in first generation German-speaking immigrants, "L1 attrition in an L2 environment is inevitable, even after a stay of only 10 to 20 years." This has also been reported by qualitative research worldwide (e.g. Grosjean 1982; Viedebantt 1983; Daswani 1985; Hiller-Foti 1985; Baetens-Beardsmore 1986.)

⁶⁸ See tables in chapter 5

The number of years in the U.S. was found to be a significant factor in four areas. Regarding the T/B (E*G) group, the results are significant (-.264*). The results regarding the next group, which was ungrammatical in both English and Greek T/B (*E*G), was also significant (-.301*) Thirdly, as expected, the results showed a negative correlation between years in the U.S. and proportion (-.276*) of correct responses on the T/B sentences that were ungrammatical in English but grammatical in Greek (*EG). Finally, regarding only one group of sentences (*E*G) did years in the U.S. show an effect on perception of opaque expressions . As expected, it is a negative correlation (-.300*).

No correlation was found between years in the U.S. and scores on the morphologically ungrammatical Greek sentences (*G).

In all four groups of sentences above we see a negative correlation between years in the U.S. and proportion of correct responses. That is, the longer the participants have been in the U.S., the lower the proportion of correct responses they got. This is precisely the case with the first three groups of sentences. Both in terms of metaphorical verb usage and opaque expression usage, the number of years the participants have been in the U.S. has negatively affected their ability to judge L1 ungrammatical sentences in these areas correctly.

Lastly, the one group of sentences that differed from the others in terms of grammaticality is the group of sentences that were grammatical in Greek but not in English. These results suggest that the longer the participants had been in the U.S., the less sure they were of what was grammatical in Greek.

6.5.4 Education in Greece

As discussed in chapter 3, education develops and maintains literacy. We propose that the more literate one is in a language, the more likely s/he is to use those literacy skills. Regular use of literacy skills in a language fosters maintenance. One explanation for this lies in the widely-accepted belief that continuous, or at least continual, use of both productive skills, speaking and writing, and both receptive skills, listening and reading, will discourage loss and difficulty of access.

Level of education in Greece was found to be a significant factor in the following six areas. Concerning the T/B (E*G) sentences, the correlation was quite significant (.456**). The results regarding the next group of sentences (T/B *E*G) was similar (.350**). In terms of the opaque expression sentences, only those sentences that were ungrammatical in both English and Greek (*E*G) correlated with level of education in Greece (.379**). In addition, in two of the morpholexical groups of sentences (gender: noun; gender: agreement), the results were significant: (.327*) and (.495**) respectively. Similarly, concerning the morphosyntactic group of sentences the results were significant, (.309*).

Thus, these results show that level of Greek education significantly affects correct judgment of ungrammatical Greek metaphorical verb usage, Greek gender morphology and Greek case morphosyntax. Then to a lesser extent, level of Greek education affects ungrammatical opaque expression usage.

6.5.5 Age

Age and language attrition in healthy individuals is not, at present, a widely-researched field; however, demented individuals, whose dementia may be attributed to age-related illnesses, lose processing abilities (Hyldenstam & Stroud 1993: 238) and suffer from varying degrees of memory loss. Indeed, memory loss and hearing loss are two abilities that decline in the elderly. Thus, considering the fact that age is a significant factor in three of the areas tested and the fact that 12% of the experimental group is over 65, age-related language attrition may be a contributing factor to the results obtained. In other words, until tested such older participants are tested, age-related attrition cannot be ruled out.

Age was not predicted to be a variable yielding significant results. Nevertheless, it did emerge as so in three of the categories discussed below. Scores on E*G T/B sentences revealed that the older the bilingual participants were when they took the test, the lower the proportion (-.280*) of correct responses they got. In other words, the older they were when they took the test, the worse their sense was of what is ungrammatical in metaphorical verb usage (*perno/spazo*).

Here we have identified areas vulnerable to attrition in a population of Greek-English bilinguals.

6.6 On L1 Maintenance in the Immigrant Bilingual

A well-known key to maintenance is constant extensive contact. Thus, as expected, Waas (1996: 169) found, in her study of German-English bilinguals in

Australia, that those subjects whose scores indicated a lower degree of attrition were ethnically affiliated. As shown in this study, the reverse is also true. All of the Greek bilinguals in this study lived in non-Greek dominated enclaves. Most came as young adults and had assimilated to a large degree, though varying degrees, in the more than 10 years that they had been in the U.S. in the majority language (English-speaking) culture.

6.7 Further Implications

A research project, regardless of how comprehensive it is, at best only answers some of the questions it first posed in addition to posing new ones. This is certainly the case with this study. Greek language attrition is still a fertile terrain for research. Although this study appears to have identified areas for research, there is still much to be examined. Reaction time tests would lend greater insight into lexical access, while further explorations into the morphosyntax of Greek might better identify the layers of vulnerability in this area.

One question that remains to explore is does the Greek of those Greek immigrants who have better maintained their Greek through extensive contact more closely resemble the L1 state of Greek monolinguals? Naturally, to be teased out of such an equation is the extent of exposure to and use of English. This is one of the many areas of examination that deserves the attention of researchers. This study suggests that Greek, a generally, well-maintained

language among Greek immigrants is vulnerable to specific changes in its lexical and morphological domains.

Appendix 1

Greek Control Group Questionnaire

The purpose of this questionnaire is to get information about your language use. There are questions about language use in school, at home and in the society outside the home.

1. When were you born?
2. Where were you born?
3. Where did you grow up?
4. What was your father's occupation?
 professional ___ civil servant ___ blue-collar worker ___
 businessman ___ other _____
5. What was your mother's occupation?
 professional ___ civil servant ___ blue-collar worker ___
 businessman ___ home ___ other _____
6. What is your occupation?
 professional ___ civil servant ___ blue-collar worker ___
 businessman ___ home ___ other _____
7. Write in the appropriate blank how many years you went to each school.
 kindergarten ___ elementary school ___ j.h.s. ___
 h.s. ___ university ___ other _____
8. At which age did you leave school?
9. Have you lived in another country? Yes ___ No ___
10. If so, where?
11. If so, how long?
 1 month 2 months 3 months 6 months 1 year other ___
12. Do you speak English?

13. If so, when did you begin to study to learn English?

0 - 7 8 - 12 12 - 17 17 - 21 21 - 30

14. How did you learn English?

at home in the neighborhood at school at a language institute

15. How many years did you study English?

0 - 7 8 - 12 12 - 17 17 - 21 21 - 30

16. How often do you use it?

never seldom sometimes often

17. When do you use it?

at home in the neighborhood at school at a language institute

18. Do you read the newspaper? Yes ____ No ____

19. Which newspapers?

20. Do you watch T.V.? Yes ____ No ____

21. Which channels?

In Greek? 100% 75% 50% 25% 0%

In English? 100% 75% 50% 25% 0%

22. Do you listen to the radio? Yes ____ No ____

23. Which stations?

In Greek? 100% 75% 50% 25% 0%

In English? 100% 75% 50% 25% 0%

24. Do you listen to music? Yes ____ No ____

25. In which language?

In Greek? 100% 75% 50% 25% 0%

In English? 100% 75% 50% 25% 0%

26. What language do you speak at home?

27. Do you use English when you travel?

28. How often do you travel abroad?

every year every 2 years every 3 years once in a while never

29. How long do you travel for?

2 weeks 1 month 2 months 3 months 6 months

Appendix 2

Greek-English Bilingual Questionnaire

The purpose of this questionnaire is to get information about your language use. There are questions about language use in school, at home and in the society outside the home.

1. When were you born?

2. Where did you grow up?

3. What was your father's occupation?

professional ___ civil servant ___ blue-collar worker ___
businessman ___ other _____

4. What was your mother's occupation?

professional ___ civil servant ___ blue-collar worker ___
businessman ___ home ___ other _____

5. Write in the appropriate blank how many years you went to each school.

In Greece: kindergarten ___ elementary school ___ j.h.s. ___
h.s. ___ university ___ other _____

In the U.S.A.: kindergarten ___ elementary school ___ j.h.s. ___
h.s. ___ university ___ other _____

6. At which age did you leave school?

7. What year did you come to this country?

8. How old were you when you came to this country?

0 - 7 8 - 12 13 - 17 18 - 21 21 - 30

9. Where did you live at first?

10. With whom did you live?

11. Circle the correct percentage. What percentage of your friends were Greek?

when you were a child : 100% 75% 50% 25% 0%
 when you were an adolescent: 100% 75% 50% 25% 0%

12. Circle the correct percentage. What percentage of your friends were non-Greeks?

when you were a child? : 100% 75% 50% 25% 0%
 when you were an adolescent?: 100% 75% 50% 25% 0%

13. When did you start to learn English?

0 - 7 8 - 12 12 - 17 17 - 21 21 - 30

14. How did you first learn English?

home neighborhood school language institute

15. What year did you feel that you could speak English well?

16. Compare your English with your Greek in the following three cases and underline the appropriate word(s) from the four words which follow.

a. My English is the same as my Greek

in reading in writing in speaking in listening

b. My English is better than my Greek

in reading in writing in speaking in listening

c. My Greek is better than my English

in reading in writing in speaking in listening

17. Which language do you use spontaneously?

18. Underline the word(s) which best completes the following sentences.

a. When I count, I use

English Greek Both (50%/50%)

b. When I do arithmetic operations, I have a greater facility

in English in Greek in both (50%/50%)

c. When I am angry or upset, I use

English Greek Both (50%/50%)

d. When I dream, I speak and hear

	Greek	Both (50%/50%)
English		

19. Which language do you use when you speak to your...

mother?

Greek	100%	75%	50%	25%	0%
English	100%	75%	50%	25%	0%
Both	100%	75%	50%	25%	0%

father?

Greek	100%	75%	50%	25%	0%
English	100%	75%	50%	25%	0%
Both	100%	75%	50%	25%	0%

brother(s)?

Greek	100%	75%	50%	25%	0%
English	100%	75%	50%	25%	0%
Both	100%	75%	50%	25%	0%

sister(s)?

Greek	100%	75%	50%	25%	0%
English	100%	75%	50%	25%	0%
Both	100%	75%	50%	25%	0%

grandparents?

Greek	100%	75%	50%	25%	0%
English	100%	75%	50%	25%	0%
Both	100%	75%	50%	25%	0%

other relatives?

Greek	100%	75%	50%	25%	0%
English	100%	75%	50%	25%	0%
Both	100%	75%	50%	25%	0%

Greek-speaking friends?

Greek	100%	75%	50%	25%	0%
English	100%	75%	50%	25%	0%
Both	100%	75%	50%	25%	0%

Other friends?

Greek	100%	75%	50%	25%	0%
English	100%	75%	50%	25%	0%
Both	100%	75%	50%	25%	0%

20. Describe other situations in which you use your English.

21. Describe other situations in which you use your Greek.

22. Do you read the newspaper? Yes _____ No _____

23. Which newspapers?

In Greek?	100%	75%	50%	25%	0%
In English?	100%	75%	50%	25%	0%
In both?	100%	75%	50%	25%	0%

24. Do you watch T.V.? Yes _____ No _____

25. Which channels?

In Greek?	100%	75%	50%	25%	0%
In English?	100%	75%	50%	25%	0%
In both?	100%	75%	50%	25%	0%

26. Do you listen to the radio? Yes _____ No _____

27. Which stations?

In Greek?	100%	75%	50%	25%	0%
In English?	100%	75%	50%	25%	0%
In both?	100%	75%	50%	25%	0%

28. What language do you speak at home?

29. Do you return to Greece?

30. If so, how often?

every year every 2 years every 3 years infrequently never

31. When you go, how long do you stay?

two weeks one month two months three months six months

32. Do you write to your family or friends in Greece?

Yes _____ No _____

33. If so, how often?

every 2 weeks every month every 2 months
every 3 months every 6 months every year never

34. Do you call your relatives in Greece? Yes _____ No _____

35. If so, how often?

every 2 weeks every month every 2 months

every 3 months every 6 months every year never

36.. If a head injury caused you to lose one of your languages and you had a choice, which one would you give up?

English

Greek

Appendix 3

Grammaticality Test (English translation)

Part I: Lexical (take/break): Examples⁶⁹

Directions

Following are 12 examples. A check (✓) is placed next to the sentence if it can be said in Greek and an ex (X) is placed next to the sentence if it can not be said in Greek.

*He wants to hang two paintings on the wall.*⁷⁰

*1. He has to put some nails in the wall.

That politician doesn't take any bribes.

*2. He plays by the books

He lost his best friend.

*3. That's why he's blue.

I didn't know exactly what time it was.

*4. My watch is slow.

He can't operate the computer yet.

*5. He's still green at his job.

I never eat the fish he cooks because it's always heavy.

*6. He always fries fish in oil.

You arrived earlier than I expected.

7. I didn't expect you for breakfast.

He is an excellent student.

8. He has a sharp mind

In the summer they never show serious works.

9. I also like light works.

Dancing in the moonlight, they fell in love.

10. The night was magical.

I didn't buy all the hard currency that I brought with me legally.

11. I bought \$100 on the black market.

He found himself among speakers of languages foreign to him.

12. He didn't use his mother tongue at all.

⁶⁹ This set of examples serves as the examples of both Part I and Part II, since the procedure for each part is the same and the sentences in both parts belong to the same general category (lexical, including supralexic).

⁷⁰ Each context sentence precedes the test sentence of the same number. Both are heard on tape, but only the test sentence is seen on paper. Context sentences are in italics to distinguish them from test sentences, which are in normal type.

Appendix 4

Grammaticality Test (English translation)

Part I: Lexical (take/break): context sentences and test sentences

Directions

Following are 30 sentences. After each one, mark, if according to your judgment, it is said (✓) or it is not said (X) in Greek.

She didn't leave a book in the house.

1. She took all the books with her

I understand why I found glass on the floor.

2. She broke the glass this morning

Since Yannis has such a difficult character, Stephanos had to tell him the news gently.

*3. He took gloves with him

When the boss refused to give him a raise, he started to complain to his co-workers

*4. She broke sugar on the back of his boss.

He couldn't get in touch with me.

5. He took the wrong phone number the night before last

He repeated the same thing four times.

6. He broke it to me last night.

We all wanted to try it again & again.

*7. We took turns so as not to argue.

He had a lot of problems with the police.

*8. He broke the law many times.

He had a fever and went to the doctor.

9. The doctor took his temperature

He's won a lot of medals, but last year's was different.

10. He broke the record with that one.

I spoke to him angrily, turned on my heels and left.

11. He took me from behind right away

He called me ten times last night.

12. He broke my nerves

He gave me \$50 less than he should have.

13. She took me for a fool, naturally

They had misunderstood each other and weren't speaking.

14. They broke the ice and became friends

Toula told Harris that she didn't like his behavior last night.

*15. He took the fly immediately

He started to improve his conduct just before he was about to be fired.

*16. He broke himself.

I know what happened to the pencil.

17. He took it from the table.

I had a beautiful plate from Holland, but I don't have it anymore.

18. He broke it last week

I trust his driving.

*19. He took me to school many times.

He called me late last night to tell me she had died.

*20. She broke the news to me.

He didn't leave any money at all in the house.

21. He took all the money from here

Now I have to get a CD of the old record that I had.

22. He broke the record last night

We hadn't spoken for a long time, but he finally turned up.

23. She took me telephone on Friday afternoon.

He suddenly appeared before me.

24. He broke my gall.

We weren't expecting anyone when she showed up.

*25. The visit took us by surprise.

She jumped from the plane, but she didn't get killed.

*26. The branch broke her fall

The train was late.

27. It took a long time.

When the wind started to blow, the sea got rough.

28. The waves broke on the rocks

Since she was afraid she'd get fired, she tried a new tactic.

*29. She took face with her boss.

He spent the whole night on it and he finally managed to do it.

*30. He broke the problem at midnight.

Appendix 5

Grammaticality Test (English translation)

Part II: Opaque Expressions (idioms): context sentences and test sentences.

Directions

Following are 48 sentences. After each one, mark whether, according to your judgment, it is said (/) or it is not said (X) in Greek.

Maria got fired yesterday.

1. With tablecloth, road.

We have to move again this year.

2. Two house movings equal one house fire.

Telephone me at eight o'clock.

3. I'll be home tonight.

He was so busy last year that he didn't even have time to take a vacation.

4. He worked like a dog all year long.

That's how he is since he won the prize.

5. He shines from joy.

Be very careful when you cross the street.

6. Your eyes - fourteen.

We don't have the blue car anymore.

7. It caught fire last year.

You can't convince them with words.

8. Money talks.

In New York people don't waste time.

9. Time is money.

I pray every day.

10. I really believe in God.

When I see them together, I feel terrible.

11. I lose my good spirits.

I'd like for us to do what I want to do this time.

12. Your way always passes.

I can't talk to you now.

13. I'll give you a call tomorrow.

I can finish it today instead of tomorrow.

14. The sooner, the better

They fooled you; you paid too much for the hat.

15. You always give papaya.

The government built anti-seismic buildings after the earthquake.

16. After seeing the robbers, they started making a rope.

With a second job, he can now cover his expenses.

17. He's getting them beyond.

You didn't tell me what Yannis is doing.

18. He's throwing an eye in a magazine.

I saved \$20,000 last year.

19. I managed to eat a pheasant and its eggs..

He usually cleans the kitchen, but this time, things are different.

20. He helped it to his granny.

I have to help him with his work this time.

21. He did me a lot of favors in the past.

Of course, I'll do it.

22. I gave you my word.

He has to stay in prison for twenty years

23. Crime doesn't pay.

You should have known.

24. If you play, you pay.

I'm going for cigarettes.

25. I'll be right back.

I lost the money I won.

26. Easy come, easy go.

He tried hard, but he failed again.

27. So, he just threw a spoon.

I have been working very hard lately.

28. I must not let any parties be drilled through my nose.

He never listens to his mother.

29. He eats wood every day.

He didn't behave well at all.

30. Now he's paying the bride.

I don't have any problems lately.

31. Everything is going well.

He always wants to be close to her.

32. He loves her like crazy.

I don't do the things I have to do.

33. I eat my time wrongly.

He makes excuses not to go to school.

34. Bad of his head.

He never fools me.

35. I have confidence in him.

I thought that he would never come.

36. Better late than never.

She got a raise and another vacation.

37. The water has come up to the soul level.

I can finish this work immediately.

38. I take the peel off the banana: it goes into my mouth.

He didn't stay at the park very long.

39. It got dark early yesterday.

It isn't the first time that they deceived him.

40. Once a fool, always a fool.

The weather is bad these days.

41. It's been raining chair legs continuously.

He couldn't remain calm.

42. He shook like a fish.

He had problems in the jungle.

43. He got sick many times.

He couldn't register because he went to do it after the deadline.

44. He missed the boat.

He'll be very angry that you didn't finish your work.

45. He'll kill you

Watch him before he robs you.

46. He's as sly as a fox.

I heard that she lost her job.

47. Don't open your mouth to the devil.

He said that he owned the largest factory in the U.S.

48. He makes water to be body.

Appendix 6

Grammaticality Test (English translation)

Part III: Morpholexical and morphosyntactic: example sentences.

Directions

Following are 6 examples. After each one, I will say whether it is said (✓) or it is not said (X) in Greek

1. He stopped to see me, but he forgot to bring the encyclopedia.
2. She passed the exam, but she couldn't continue with her studies this year.
3. She traveled to all different countries, but she has never forgotten her own country.
- *4. He canceled the **trips** because he hadn't gotten him a ticket. (*trip*)
- *5. **We became** a miser when they knocked down his store.
(*He became*)
- *6. I looked for his **photograph** last night, but I didn't find them.
(*photographs*)

Appendix 7

Grammaticality Test (English translation)

Part III: Morpholexical and morphosyntactic: test sentences.⁷¹

Directions

Following are 36 sentences. After each one, mark, if according to your judgment, it is said (✓) or it is not said (X) in Greek.

1. She often traveled to Cyprus by plane, but she was always afraid.
2. He didn't do all of the work the night before last because he was tired.
- *3. We went to the **forest** many times last year because we like trees.
4. He understood that every nation in the world can't have its own defense.
- *5. He put those that he had in **the ground** before he bought any more plants..
6. If they had learnt about the accident, they would have gone to the hospital.
- *7. When he was young, he loved **drama** and then became an actor.
- *8. He saw two avenues outside, but he didn't know **which one** to take.
9. He learned about the death of his father before he left work.
- *10. They saw **the crowds** at the parade, but they didn't go near them immediately.
- *11. He saw all the works at **the gallery** before he bought any of them.
- *12. They found five entrances but **none** led to the first floor.
- *13. He went to sleep at **(the)** midnight because he finished his work late.
14. He sold the house to them, but he didn't tell him about the damages.
15. She bought an old car before she left for Greece the year before last.
- *16. He fixed **the chests** of the mannequins before he put new clothes on them.
- *17. He had debts last summer but **some of them** remained for this year.
18. She used to write a lot of beautiful letters, but lately she only calls people.
19. He packed his bags because he had to leave for Greece.
- *20. Two foxes who were **hungry** came along and ate the meat.
21. He put all of his money in the bank which opened in his neighborhood.
- *22. There were more than twenty **people** who came late to the party.
- *23. They became **lawyers**, but they wanted to change professions.

⁷¹ These sentences are heard, but they are not seen.

- *24. She made **the** coffees before she left for church this morning.
- *25. He wrote the numbers on **the** blackboard before he started to speak to the students.
- 26. He bought two new watches before all of his old ones broke.
- *27. A lot of members joined, but only **three** came to the meeting.
- 28. She saw three nice works of art, which were also well-known in Europe last year.
- *29. He found four stains which were **black** and **white** on his pants.
- 30. When they were in Russia, they used to go skiing in the winter.
- 31. He spoke to his students before they wrote their last compositions.
- *32. She corrected three **mistakes** in the last composition, but she also had others.
- 33. They spoke a lot about the monsters which they saw in the movie the night before last.
- 34. If they had gone to Greece in May, they would have had a better time.
- 35. He washed the black socks in the morning before he went to the zoo.
- 36. He studied architecture at the university, but he didn't finish.

Appendix 8

Grammaticality Test (English translation)

Part III: Morphological and morphosyntactic: answer sheet⁷²

Directions

Following are 36 sentences. After each one, mark, if according to your judgment, it is said (/) or it is not said (X) in Greek.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____
21. _____
22. _____
23. _____
24. _____
25. _____
26. _____
27. _____
28. _____
29. _____
30. _____
31. _____
32. _____

⁷² In this part of the test, informants do not see the sentences: they simply mark a check (/) after each grammatical sentence they hear and an ex (X) after each ungrammatical sentence they hear.

- 33. _____
- 34. _____
- 35. _____
- 36. _____

Appendix 9

Greek Control Group Questionnaire⁷³

Ο σκοπός του ερωματολόγιου είναι για να πάρω πληροφορίες σχετικά με τη χρήση της γλώσσας σας. Υπάρχουν ερωτήσεις σχετικά με τη χρήση της γλώσσας στο σχολείο, στο σπίτι και στην κοινωνία έξω από το σπίτι σας.

Ερωτηματολόγιο

1. Πότε γεννηθήκατε;
2. Που γεννηθήκατε (Σε ποιο μέρος);
3. Πού μεγάλώσατε (Σε ποιο μέρος);
4. Τι δουλειά έκανε ο πατέρας σας;

ελεύθερος επαγγελματίας (π.χ. γιατρός, δικηγόρος, κλπ.) _____
 δημόσιος υπάλληλος _____ επιχειρηματίας _____ εργάτης _____
 άλλο _____

5. Τι δουλειά έκανε η μητέρα σας;

ελεύθερος επαγγελματίας (π.χ. γιατρός, δικηγόρος, κλπ.) _____
 δημόσιος υπάλληλος _____ επιχειρηματίας _____ εργάτης _____
 οικοκυρά _____ άλλο _____

6. Τι δουλειά κάνετε;

ελεύθερος επαγγελματίας (π.χ. γιατρός, δικηγόρος, κλπ.) _____
 δημόσιος υπάλληλος _____ επιχειρηματίας _____ εργάτης _____
 οικοκυρά _____ άλλο _____

7. Πόσα χρόνια πήγατε σε κάθε σχολείο;

νηπιαγωγείο _____ δημοτικό _____ γυμνάσιο _____
 λύκειο _____ πανεπιστήμιο _____ άλλο _____

⁷³ This questionnaire was administered to 21 informants in Greece. This constitutes the Greek Control Group.

8. Σε ποιά ηλικία σταματήσατε το σχολείο;

9. Εχετε μείνει σε άλλη χώρα; Ναι _____ Οχι _____

10. Που;

11. Πόσο καιρό;

ένα μήνα δύο μήνες έξι μήνες ένα χρόνο άλλο _____

12. Μιλάτε αγγλικά;

13. Πότε (Σε ποιά ηλικία) αρχίσατε να μαθαίνετε αγγλικά;

0 - 7 8 - 12 12 - 17 17 - 21 21 - 30

14. Πώς μάθατε αγγλικά;

στο σπίτι στη γειτονιά στο σχολείο στο φροντιστήριο

15. Πόσα χρόνια σπουδάσατε τα αγγλικά;

0 - 7 8 - 12 12 - 17 17 - 21 21 - 30

16. Πόσο συχνά χρησιμοποιείτε;

ποτέ σπάνια μερικές φορές συχνά

17. Πότε χρησιμοποιείτε τα αγγλικά σας;

στη δουλειά στις διακοπές με τουρίστες με φίλους άλλες φορές (ποιές;)

18. Διαβάζετε εφημερίδες; Ναι _____ Οχι _____

19. Ποιές εφημερίδες;

20. Παρακολουθείτε τηλεόραση; Ναι _____ Οχι _____

21. Ποία προγράμματα;

Στα ελληνικά; 0%	100%	75%	50%	25%
Στα αγγλικά; 0%	100%	75%	50%	25%

22. Ακούτε το ραδιόφωνο: Ναι _____ Όχι _____

23. Ποιούς σταθμούς;

Στα ελληνικά; 0%	100%	75%	50%	25%
Στα αγγλικά; 0%	100%	75%	50%	25%

24. Ακούτε μουσική: Ναι _____ Όχι _____

25. Σε ποιά γλώσσα;

Στα ελληνικά; 0%	100%	75%	50%	25%
Στα αγγλικά; 0%	100%	75%	50%	25%

26. Ποία γλώσσα μιλάτε στο σπίτι σας;

27. Χρησιμοποιείτε τα αγγλικά σας όταν ταξιδεύετε:

Ναι _____ Όχι _____

28. Πόσο συχνά ταξιδεύετε στο εξωτερικό:

κάθε χρόνο κάθε δύο χρόνια κάθε τρία χρόνια κάπου-κάπου ποτέ

29. Πόσο καιρό μένετε στο εξωτερικό:

δύο εβδομάδες ένα μήνα δύο μήνες τρεις μήνες έξη μήνες

Appendix 10

Greek-English Bilingual Questionnaire⁷⁴

Ο σκοπός του ερωματολόγιου είναι για να πάρω πληροφορίες σχετικά με τη χρήση της γλώσσας σας. Υπάρχουν ερωτήσεις σχετικά με τη χρήση της γλώσσας στο σχολείο, στο σπίτι και στην κοινωνία έξω από το σπίτι σας.

Ερωτηματολόγιο

1. Πότε γεννηθήκατε;

2. Πού μεγαλώσατε;

3. Τι δουλειά έκανε ο πατέρας σας?

ελεύθερος επαγγελματίας (π.χ. γιατρός, δικηγόρος, κλπ.) _____
 δημόσιος υπάλληλος _____ επιχειρηματίας _____ εργάτης _____
 άλλο _____

4. Τι δουλειά έκανε η μητέρα σας?

ελεύθερος επαγγελματίας (π.χ. γιατρός, δικηγόρος, κλπ.) _____
 δημόσιος υπάλληλος _____ επιχειρηματίας _____ εργάτης _____
 οικοκυρά _____ άλλο _____

5. Σημειώσατε πόσα χρόνια πήγατε σε κάθε σχολείο.

Στην Ελλάδα: νηπιαγωγείο _____ δημοτικό _____ γυμνάσιο _____
 λύκειο _____ πανεπιστήμιο _____ άλλο _____

Στην Η.Π.Α.: νηπιαγωγείο _____ δημοτικό _____ γυμνάσιο _____

 λύκειο _____ πανεπιστήμιο _____ άλλο _____

6. Σε ποιά ηλικία σταματήσατε το σχολείο:

⁷⁴ This questionnaire was administered to 57 informants in New York, U.S.A. This group constitutes the Experimental Group of Greek-English bilinguals.

7. Πότε (Ποιό έτος) ήρθατε στην Η.Π.Α;

8. Πόσο χρονών ήσασταν όταν ήρθατε στην Η.Π.Α.;

0 - 7 8 - 12 13 - 17 18 - 21 21 - 30

9. Πού μέινατε στην αρχή (όταν πρωτοήρθατε);

10. Με ποιόν μέινατε;

11. Σημειώσατε το ποσοστό του αριθμού των φίλων σας που ήταν Έλληνες ...

όταν ήσασταν παιδί:	100%	75%	50%	25%	0%
όταν ήσασταν έφηβος:	100%	75%	50%	25%	0%

12. Σημειώσατε το ποσοστό του αριθμού των φίλων σας που είχαν άλλη εθνικότητα ...

όταν ήσασταν παιδί:	100%	75%	50%	25%	0%
όταν ήσασταν έφηβος:	100%	75%	50%	25%	0%

13. Πότε (Σε ποιά ηλικία) αρχίσατε να μαθαίνετε τα αγγλικά;

0 - 7 8 - 12 12 - 17 17 - 21 21 - 30

14. Πώς πρωτομάθατε τα αγγλικά;

στο σπίτι στη γειτονιά στο σχολείο στο φροντιστήριο

15. Πότε (ποίο έτος) νιώθατε ότι μπορούσατε να μιλάτε καλά τα αγγλικά;

16. Συγκρίνατε τα αγγλικά σας με τα ελληνικά σας στις παρακάτω τρεις περιπτώσεις και υπογραμμίσατε την κατάλληλη (ες) λέξη (εις) από τις τέσσερις λέξεις που ακολουθούν κάθε περίπτωση.

τον πατέρα σας;				
Ελληνικά	100%	75%	50%	25%
0%				
Αγγλικά	100%	75%	50%	25%
0%				
Και τα δύο	100%	75%	50%	25%
0%				
τα αδέρφια σας;				
Ελληνικά	100%	75%	50%	25%
0%				
Αγγλικά	100%	75%	50%	25%
0%				
Και τα δύο	100%	75%	50%	25%
0%				
τους παππούδες σας;				
Ελληνικά	100%	75%	50%	25%
0%				
Αγγλικά	100%	75%	50%	25%
0%				
Και τα δύο	100%	75%	50%	25%
0%				
τους άλλους συγγενείς;				
Ελληνικά	100%	75%	50%	25%
0%				
Αγγλικά	100%	75%	50%	25%
0%				
Και τα δύο	100%	75%	50%	25%
0%				
τους φίλους που μιλάνε ελληνικά;				
Ελληνικά	100%	75%	50%	25%
0%				
Αγγλικά	100%	75%	50%	25%
0%				
Και τα δύο	100%	75%	50%	25%
0%				
τους άλλους φίλους;				
Ελληνικά	100%	75%	50%	25%
0%				
Αγγλικά	100%	75%	50%	25%
0%				

Και τα δύο 0%	100%	75%	50%	25%
------------------	------	-----	-----	-----

20. Αναφέρατε άλλες φορές που χρησιμοποιείτε τα αγγλικά σας.

21. Αναφέρατε άλλες φορές που χρησιμοποιείτε τα ελληνικά σας.

22. Διαβάζετε εφημερίδα; Ναι ____ Όχι ____

23. Ποιές εφημερίδες:

Στα ελληνικά: 0%	100%	75%	50%	25%
---------------------	------	-----	-----	-----

Στα αγγλικά: 0%	100%	75%	50%	25%
--------------------	------	-----	-----	-----

Και στα δύο: 0%	100%	75%	50%	25%
--------------------	------	-----	-----	-----

24. Παρακολουθείτε τηλεόραση; Ναι ____ Όχι ____

25. Ποία κανάλια:

Στα ελληνικά: 0%	100%	75%	50%	25%
---------------------	------	-----	-----	-----

Στα αγγλικά: 0%	100%	75%	50%	25%
--------------------	------	-----	-----	-----

Και στα δύο: 0%	100%	75%	50%	25%
--------------------	------	-----	-----	-----

26. Ακούτε το ραδιόφωνο; Ναι ____ Όχι ____

27. Ποιούς σταθμούς:

Στα ελληνικά: 0%	100%	75%	50%	25%
---------------------	------	-----	-----	-----

Στα αγγλικά: 0%	100%	75%	50%	25%
--------------------	------	-----	-----	-----

Και στα δύο: 0%	100%	75%	50%	25%
--------------------	------	-----	-----	-----

28. Ποία γλώσσα μιλάτε στο σπίτι σας;

29. Γυρίζετε στην Ελλάδα; Ναι ____ Όχι ____

30. Αν ναι, πόσο συχνά πηγαίνετε;

Υπογραμμίσατε την κατάλληλη απάντηση.

κάθε χρόνο κάθε δύο χρόνια κάθε τρία χρόνια κάπου-κάπου ποτέ

31. Όταν πηγαίνετε πόσον καιρό μένετε εκεί;

δύο εβδομάδες ένα μήνα δύο μήνες τρεις μήνες έξι μήνες

32. Γράφετε στην οικογένεια ή στους φίλους σας στην Ελλάδα: Ναι ___ Όχι ___

33. Κάθε πόσο: Υπογραμμίσατε την κατάλληλη απάντηση.

δύο εβδομάδες ένα μήνα δύο μήνες τρεις μήνες έξι μήνες

34. Τους τηλεφωνείτε: Ναι ___ Όχι ___

35. Κάθε πόσο: Υπογραμμίσατε την κατάλληλη απάντηση.

δύο εβδομάδες ένα μήνα δύο μήνες τρεις μήνες έξι μήνες

36. Αν είχατε τραύμα στο κεφάλι και έπρεπε να χάσετε τη μία γλώσσα σας, ποιά

θα ήταν - τα αγγλικά ή τα ελληνικά;

Appendix 11

Grammaticality Test

Part I: Lexical (take/break): Examples context sentences)⁷⁵

1. Θέλει να κρεμάσει δυό πίνακες στον τοίχο.
2. Σαν πολιτικός δεν δωροδοκείται.
3. Εχασε την καλύτερή του φίλη.
4. Δεν ήξερα ακριβώς τι ώρα ήταν.
5. Δεν μπορεί να χειριστεί ακόμη τον υπολογιστή.
6. Ποτέ δεν τρώω το ψάρι που μαγειρεύει επειδή είναι πάντοτε βαρύ.
7. Ηρθες νωρίς.
8. Είναι άριστος μαθητής.
9. Ποτέ δεν δείχνουν σοβαρά έργα το καλοκαίρι.
10. Χορευοντας στη φεγγαράδα, ερωτεύτηκαν.
11. Δεν αγόρασα όλα τα δολάρια που έφερα μαζί μου νόμιμα.
12. Βρέθηκα ανάμεσα σε ξενόγλωσσους.

⁷⁵ Informants hear these sentences on tape, but they do not see them. Each context sentence is followed by an example sentence of the same number.

Appendix 12

Grammaticality Test

Part I: Lexical (take/break): Example Sentences⁶

Οδηγίες:

Ακολουθούν 12 παραδείγματα. Μετά από κάθε ένα θα αναφέρω αν λέγεται (✓) στα ελληνικά ή όχι (X).

- | | |
|--|-------|
| 1. Πρέπει να βάλει μερικά νύχια στον τοίχο. | _____ |
| 2. Παίζει σύμφωνα με τα βιβλία. | _____ |
| 3. Για αυτό είναι μπλε. | _____ |
| 4. Το ρολοί μου είναι αργό. | _____ |
| 5. Είναι ακόμα πράσινος στη δουλειά. | _____ |
| 6. Πάντοτε τηγανίζει το ψάρι στο πετρέλαιο. | _____ |
| 7. Δεν σε περίμενα για πρωινό. | _____ |
| 8. Εχει κοφτερό μυαλό. | _____ |
| 9. Και τα ελαφρά έργα μου αρέσουν. | _____ |
| 10. Η νύχτα ήταν μαγική. | _____ |
| 11. Αγόρασα \$100 στη μαύρη αγορά. | _____ |
| 12. Δεν χρησιμοποίησε τη μητρική του γλώσσα. | _____ |

⁶ Informants are required to follow these sentences as they read along. Since they are examples, the answers are given to them on tape and on paper.

Appendix 13

Grammaticality TestPart I: Lexical (take/break): context sentences⁷⁷

1. Δεν άφησε κανένα βιβλίο στο σπίτι.
2. Κατάλαβα γιατί βρήκα γυαλί στο πάτωμα.
3. Αφού Ο Γιάννης είχε τόσο δύσκολο χαρακτήρα, Ο Στέφανος αναγκάστηκε να του πεί τα νέα απαλά.
4. Όταν το αφεντικό αρνήθηκε να του δώσει αύξηση, άρχισε να παραμονιέται στους συναδέλφους.
5. Δεν μπορούσε να έρθει σε επαφή μαζί μου.
6. Μου επαναλάμβανε το ίδιο πράγμα επί τέσσερις φορές.
7. Όλοι θέλαμε να το δοκιμάσουμε ξανά και ξανά.
8. Είχε πολλά προβλήματα με την αστυνομία.
9. Είχε πυρετό και πήγε στο γιατρό.
10. Εχει κερδίσει πολλά μετάλλια, αλλά το περσινό ήταν διαφορετικό.
11. Του μίλησα θυμωμένα, έκανα μεταβολή και έφυγα.
12. Μου τηλεφώνησε δέκα φορές χτες το βράδυ.
13. Μου έδωσε \$50 λιγότερα από ό,τι έπρεπε.
14. Είχαν παραξηγηθεί και δεν μιλούσαν.
15. Η Τούλα είπε στον Χάρη ότι δεν της άρεσε η συμπεριφορά χτες το βράδυ.
16. Αρχισε να συμπεριφέρεται καλά λίγο πρωτού κινδυνέψει να απολυθεί για τη συμπεριφορά του.
17. Ξέρω τί έγινε με το μολύβι.
18. Είχα ένα ωραίο πιάτο από την Ολλανδία, αλλά δεν το έχω πιά.
19. Εμπιστεύομαι στην οδήγηση του.
20. Μου τηλεφώνησε αργά το βράδυ να μου πεί ότι πέθανε αυτή.
21. Δεν άφησε λεστά καθόλου στο σπίτι.
22. Τώρα πρέπει να πάρω ένα CD του παλιού δίσκου που είχα.
23. Δεν μιλήσαμε για πολύ καιρό, αλλά τελικά εμφανίστηκε.
24. Παρουσιάστηκε ξαφνικά μπροστά μου.
25. Δεν περιμέναμε κανένα όταν φάνηκε αυτή.
26. Πήδηξε από το αεροπλάνο αλλά δεν σκοτώθηκε.
27. Το τραίνο άρχισε να φθάσει στην ώρα του.
28. Όταν ο αέρας άρχισε να φυσά, η θάλασσα εξαγριώθηκε.
29. Αφού φοβόταν ότι θα την απολύσουν, δοκίμασε καινούργια τακτική.
30. Ασχολιόταν με αυτό, όλο το βράδυ, και τελικά το κατάφερε.

⁷⁷ These sentences are heard on tape, but they are not seen by informants. Each context sentence precedes the test sentence of the same number.

Appendix 14

Grammaticality TestPart I: Lexical (take/break): test sentences⁷⁸

V

Προτάσεις

Ακολουθούν 30 προτάσεις. Σημειώσατε αν, κατά την κρίση σας, κάθε πρόταση λέγεται (✓) ή δεν λέγεται (X) στα ελληνικά.

1. Πήρε όλα τα βιβλία μαζί της. _____
2. Εσπασε το ποτήρι σήμερα το πρωί. _____
3. Πήρε γάντια με αυτόν. _____
4. Εσπασε ζάχαρη στην πλάτη του αφεντικού. _____
5. Πήρε λανθασμένο νούμερο προχθές το βράδυ. _____
6. Μου την έσπασε χθες το βράδυ. _____
7. Πήραμε σειρές για να μην μαλώσουμε. _____
8. Εσπασε το νόμο πολλές φορές. _____
9. Ο γιατρός πήρε τη θερμοκρασία του. _____
10. Εσπασε το ρεκόρ με εκείνο. _____
11. Με πήρε από πίσω αμέσως. _____
12. Μου έσπασε τα νεύρα. _____
13. Με πήρε για χαζό βέβαια. _____
14. Εσπασαν τον πάγο και έγιναν φίλοι. _____
15. Πήρε τη μύγα αμέσως. _____
16. Εσπασε τον εαυτό του. _____
17. Το πήρε από το τραπέζι. _____
18. Το έσπασε την προηγούμενη εβδομάδα. _____
19. Με πήρε στο σχολείο πολλές φορές. _____
20. Μου έσπασε τα νέα. _____
21. Πήρε όλα τα λεφτά από 'δώ. _____
22. Εσπασε το δίσκο χθες το βράδυ. _____
23. Με πήρε τηλέφωνο παρασκευή το μεσημέρι. _____
24. Μου έσπασε τη χολή αυτός. _____
25. Η επίσκεψη μάς πήρε από έκπληξη. _____
26. Το κλαδί έσπασε την πτώση της. _____
27. Πήρε πολλή ώρα. _____
28. Τα κύματα έσπασαν επάνω στους βράχους. _____
29. Πήρε πρόσωπο με το αφεντικό της. _____
30. Εσπασε το πρόβλημα τα μεσάνυχτα. _____

⁷⁸ After hearing each sentence, informants are required to mark a check (✓) for grammatical and an ex (X) for ungrammatical, according to their judgments.

Appendix 15

Grammaticality TestPart II: Opaque Expressions: context sentences⁷⁹

1. Η Μαρία απολύθηκε χθες.
2. Πρέπει να μετακομίσουν ξανά φέτος.
3. Τηλεφωνησέ μου στις 8.
4. Ήταν τόσο απασχολημένος πέρσι, που ούτε διακοπές δεν μπόρεσε να πάει.
5. Έτσι είναι αυτός από τότε που κέρδισε το βραβείο.
6. Πρόσεχε πολύ όταν διασχίζεις το δρόμο.
7. Δεν έχουμε το μπλε αυτοκίνητο πιά.
8. Δεν μπορείς να τους πείσεις με λόγια.
9. Στη Νέα Υόρκη, ο κόσμος δεν σπαταλάει το χρόνο του.
10. Προσεύχομαι κάθε μέρα.
11. Όταν τους βλέπω μαζί, νιώθω άσχημα.
12. Θα ήθελα να κάνουμε ότι θέλω εγώ αυτή τη φορά.
13. Δεν μπορώ να σου μιλήσω τώρα.
14. Μπορώ να το τελειώσω σήμερα, αντί αύριο.
15. Σε κοροΐδεψαν. Πλήρωσες πολύ για αυτό το καπέλλο.
16. Η κυβέρνηση έφτιαξε αντι-σεισμικά κτήρια μετά από το σεισμό.
17. Με τη δεύτερη δουλειά του, τώρα μπορεί να καλύπτει τα εξοδα.
18. Δεν μου είπες τι κάνει Ο Γιάννης.
19. Μάζεψα \$20,000 πέρσι.
20. Συνήθως καθαρίζει την κουζίνα, αλλά αυτήν την φορά τα πράγματα είναι διαφορετικά.
21. Πρέπει να τον βοηθήσω με την εργασία του αυτήν την φορά.
22. Φυσικά θα το κάνω.
23. Πρέπει να μείνει στη φυλακή για είκοσι χρόνια.
24. Έπρεπε να το ξέρεις.
25. Πάω για τσιγάρα.
26. Εχασα τα λεφτά που κέρδισα.
27. Προσπάθησε πολύ αλλά απέτυχε ξανά.
28. Δουλεύω παρα πολύ τελευταία.
29. Ποτέ δεν ακούει τη μάνα του.
30. Δε συμπεριφερότανε καθόλου καλά.
31. Δεν έχω κανένα πρόβλημα αυτές τις μέρες.

⁷⁹ Part II follows exactly the same procedure as Part I

32. Πάντοτε θέλει να είναι κοντά του.
33. Δεν κάνω τις δουλειές μου όπως πρέπει.
34. Βρίσκει δικαιολογίες και δεν πάει στο σχολείο.
35. Ποτέ του δεν με κοροιδεύει.
36. Νόμιζα ότι ποτέ δεν θα ερχότανε.
37. Πήρε άδεια και άλλη άδεια.
38. Μπορώ να τελειώσω αυτή τη δουλειά αμέσως.
39. Δεν έμεινε στο πάρκο πολλή ώρα.
40. Δεν είναι η πρώτη φορά. Πάντοτε τον κοροιδεύουν.
41. Ο καιρός είναι ασχημός αυτές τις μέρες.
42. Δεν μπορούσε να μείνει ήρεμη.
43. Είχε προβλήματα στην ζούγκλα.
44. Δεν δέχτηκαν την αίτησή του επειδή άργησε και δεν πρόλαβε τη προθεσμία.
45. Θα είναι πολύ θυμωμένος που δεν τελείωσε τις δουλειές.
46. Πρόσεξε τον πριν σου κλέψει.
47. Άκουσα ότι έχασε τη δουλειά της.
48. Είτε οτι έχει το μεγαλύτερο εργοστάσιο στις Ηνωμένες Πολιτείες.

Appendix 16

Grammaticality Test

IV

Part II: Supralexical (idiom): test sentences

Ακολουθούν 48 προτάσεις. Σημειώσατε αν, κατά την κρίση σας, κάθε πρόταση λέγεται () ή δεν λέγεται (X) στα ελληνικά.

1. Μαζί με τραπεζομάντηλο, δρόμο. _____
2. Δύο φορές μετακομίζει κανείς, ισοδυναμεί με μία φωτιά σπιτιού. _____
3. Θα είμαι σπίτι το βράδυ. _____
4. Δούλευε σαν σκύλος όλη τη χρονιά. _____
5. Λάμπει από χαρά. _____
6. Τα μάτια σου δεκατέσσερα. _____
7. Επασε φωτιά πέτσι. _____
8. Τα λεπτά (λεφτά) μιλάνε. _____
9. Ο χρόνος είναι χρήμα. _____
10. Πιστεύω πραγματικά στο θεό. _____
11. Χάνω τα κέφια μου. _____
12. Πάντα το δικό σου περνάει. _____
13. Θα σου δώσω ένα τηλεφωνο αύριο. _____
14. Το πιά σύντομα, το καλύτερο. _____
15. Πάντοτε δίνεις παπαίγια. _____
16. Βλέποντας τους κλέφτες, άρχισαν να στιάχνουν το σχοινί. _____
17. Τα βγάζει πέρα. _____
18. Ρίχνει μία ματιά σε ένα περιοδικό. _____
19. Κατάφερα να φάω ένα φασιανό και τα αυγά της. _____
20. Το βοήθησε στη γιαγιά του. _____
21. Μου έκανε χάρες πολλές φορές στο παρελθόν. _____
22. Σου έδωσα το λόγο μου. _____
23. Το έγκλημα δεν πληρώνει. _____
24. Αν παίζεις, πληρώνεις. _____
25. Θα είμαι πίσω αμέσως. _____
26. Εύκολα έρχονται, εύκολα φεύγουν. _____
27. Κ' έτσι έριξε ένα κουτάλι. _____
28. Δεν πρέπει να αφήσω κανένα πάρτυ να τρυπήσει την μύτη μου. _____
29. Τρώει ξύλο κάθε μέρα. _____
30. Τώρα πληρώνει τη νύφη. _____
31. Όλα πάνε καλά. _____

Appendix 17

Grammaticality Test

Part III: Morpholexical and morphosyntactic: example sentences

Ακολουθούν έξη παραδείγματα. Μετά από κάθε ένα θα αναφέρω αν λέγεται (✓) ή δεν λέγεται (X) στα ελληνικά.

1. Πέρασε να με δει αλλά ξέχασε να φέρει την εγκύκλιοπαιδεία. _____
2. Πέτυχε στις εξετάσεις αλλά δεν θα συνεχίσει σπουδές φέτος. _____
3. Ταξίδεψε σ' όλες τις χώρες αλλά δεν ξέχασε την πατρίδα του. _____
4. Ματαίωσε το ταξίδια επειδή δεν του έβγαλε εισιτήρια. _____
5. Γίναμε τσιγκούνης από τότε που του διέρρηξαν το μαγαζί. _____
6. Εψαξε για τις φωτογραφία του χθες το βράδυ αλλά δεν τις βρήκα. _____

Appendix 18

Grammaticality TestPart III: Morpholexical and morphosyntactic: test sentences.¹

1. Ταξίδευε συχνά στην Κύπρο με το αεροπλάνο, αλλά πάντα φοβόταν.
2. Δεν έκανε όλη τη δουλειά προχθές το βράδυ, επειδή ήταν κουρασμένος.
3. Πήγαμε στο δάσο πολλές φορές πέρσι, επειδή μας αρέσουν τα δέντρα.
4. Κατάλαβε ότι κάθε κράτος δεν μπορεί να έχει δική του άμυνα.
5. Εβάλε αυτά που είχε στον έδαφο πριν αγοράσει άλλα φυτά.
6. Αν είχανε μάθει για το ατύχημα, θα είχανε πάει στο νοσοκομείο.
7. Όταν ήταν νέος, αγαπούσε τη δράμα και για αυτό έγινε ηθοποιός.
8. Είδε δύο λεωφόρους απ' έξω αλλά δεν ήξερε ποιό να πάρει.
9. Εμαθε για το θάνατο του πατέρα του πριν φύγει από τη δουλειά.
10. Είδαν τους πλήθους στην παρέλαση αλλά δεν πήγαν κοντά τους αμέσως.
11. Είδε όλα τα έργα του στο γκαλερί πριν αγοράσει κάποιο.
12. Βρήκαν πέντε εισόδους αλλά κανένας δεν οδηγούσε στο πρώτον όροφο.
13. Κοιμήθηκε την μεσάνυχτα επειδή τελείωσε τη δουλειά του αργά.
14. Πούλησε το σπίτι του σε αυτούς αλλά δεν τους είπε για τις ζημιές.
15. Αγόρασε ένα παλιό αυτοκίνητο πριν φύγει για την Ελλάδα πρόπερσι.
16. Εφτιαξε τους στήθους των μανεκέν πριν τους βάλει τα νέα σουτιέν.
17. Είχε χρέη πέρσι το καλοκαίρι αλλά λίγοι έμειναν για φέτος.
18. Συνήθιζε να γράφει πολλά γράμματα, αλλά τελευταία μόνο τηλεφωνεί.
19. Ετοίμασε τις βαλίτσες, επειδή έπρεπε να φύγει για την Ελλάδα.
20. Ηρθαν δύο αλεπούδες που ήταν πεινασμένοι και πήραν το κρέας.
21. Εβάλε όλα τα λεφτά του, στην τράπεζα που άνοιξε στη γειτονιά του.
22. Υπάρχουν παραπάνω από είκοσι ανθρώπους που ήρθαν αργά στο πάρτυ.
23. Είχαν γίνει δικηγόρους, αλλά ήθελαν να αλλάξουν επάγγελμα.
24. Έκανε τις καφέδες, πριν φύγει για την εκκλησία σήμερα το πρωί.
25. Έγραψε τα νούμερα στην πίνακα, πριν αρχίσει να μιλάει στους μαθητές.
26. Αγόρασε δύο καινούργια ρολόγια πριν χαλάσουν όλα τα παλιά του.
27. Γράφτηκαν πολλοί μέλη, αλλά μόνο τρεις ήρθαν στο συνέδριο.
28. Είδε τέσσερα ωραία έργα, που ήταν γνωστά ακόμα και στην Ευρώπη.
29. Βρήκε τέσσερις λεκέδες που ήταν μαύρες και άσπρες στο παντελόνι του.
30. Όταν έμεναν στη Ρωσία, συνήθιζαν να πηγαίνουν για σκι το χειμώνα.
31. Μίλησε με τους μαθητές του πριν γράψουν τις τελευταίες εκθέσεις τους.
32. Διόρθωσε τρεις λάθους στην τελευταία έκθεση αλλά είχε και άλλους.
33. Μιλούσαν πολύ για τα τέρατα που είδαν στο έργο προχθές το βράδυ.
34. Αν είχανε πάει στην Ελλάδα τον Μάιο, θα είχανε περάσει καλύτερα.
35. Επλυνε τις μαύρες κάλτσες το πρωί πριν να πάει στον ζωολογικό κήπο.
36. Σπούδασε αρχιτεκτονική στο πανεπιστήμιο, αλλά δεν τελείωσε.

¹ These sentences are heard, but they are not seen.

Appendix 19

Grammaticality Test

Part III: Morpholexical and morphosyntactic: answer sheet²

III/

Ακολουθούν 36 προτάσεις. Αφού ακούσετε κάθε πρόταση, σημειώστε μετά τον αριθμό, αν, κατά την κρίση σας, λέγεται (/) ή δεν λέγεται (X) στα ελληνικά.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____
21. _____
22. _____
23. _____
24. _____
25. _____
26. _____
27. _____
28. _____
29. _____

² In this part of the test, informants do not see the sentences: they simply mark a check (/) after each grammatical sentence they hear and an ex (X) after each ungrammatical sentence they hear.

30. _____
31. _____
32. _____
33. _____
34. _____
35. _____
36. _____

Appendix 20**Request for Control Group Volunteers Flyer (English Translation)****Volunteers Wanted**

Volunteers wanted to participate in a linguistics study.

Volunteers wanted who speak only Greek.

Volunteers will be paid 1500 drachmas for one hour.

Study requires listening to sentences on tape and judging their correctness in Greek. All participants must also complete a questionnaire about their language use.

Kathleen Hart, Professor at Anatolia College

Please call: 426 -100

Appendix 21**Request for Control Group Volunteers Flver****Χρειάζονται Εθέλοντες**

Χρειάζονται εθέλοντες για μία γλωσσολογική έρευνα.

Χρειάζονται εθέλοντες που μιλάνε μόνο ελληνικά.

Εθέλοντες πληρώνονται 1500 δρχ. για μία ώρα.

Εθέλοντες πρέπει να άκουνε πρότασεις στα Ελληνικά για να αποφασίσουν αν είναι σωστές ή όχι. Εθέλοντες πρέπει να συμπληρώνουν ένα ερωτηματολόγιο. Το ερωτηματολόγιο έχει ερωτήσεις σχετικά με τη χρήση της γλώσσας τους.

Kathleen Hart, Φοιτήτρια στην Anatolia College

Τηλέφωνο - 426-100

Appendix 22**Request for Target Group Volunteers Flier (English Translation)****Volunteers Wanted**

Volunteers wanted to participate in a linguistics study.

Volunteers wanted who speak only Greek and
volunteers who speak Greek and English.

Volunteers who speak only Greek will be paid \$5 for half an hour.

Volunteers who speak Greek and English will be paid \$10 for an hour

Study requires listening to sentences on tape and
judging their correctness in Greek. All participants must also complete a questionnaire about
their language use.

Linda A. Pelc, Student at City University of New York
Please call: 718 472-4460

Appendix 23**Request for Target Group Volunteers Flyer****Χρειάζονται Εθέλοντες**

Χρειάζονται εθέλοντες για μία γλωσσολογική έρευνα.

Χρειάζονται εθέλοντες που μιλάνε μόνο ελληνικά και εθέλοντες που μιλάτε ελληνικά και αγγλικά.

Εθέλοντες που μιλάνε μόνο ελληνικά πληρώνονται \$5 για μισή ώρα.

Εθέλοντες που μιλάνε ελληνικά και αγγλικά πληρώνονται \$10 για μία ώρα.

Εθέλοντες πρέπει να άκουνε πρότασεις στα Ελληνικά για να αποφασίσουν αν είναι σωστές ή όχι. Εθέλοντες πρέπει να συμπληρώνουν ένα ερωτηματολόγιο. Το ερωτηματολόγιο έχει ερωτήσεις σχετικά με τη χρήση της γλώσσας τους.

Linda A. Pelc. Φοιτήτρια στο City University of New York
Τηλέφωνο - 718 472-4460

Appendix 24

Request for English Monolingual Volunteers Flyer

Volunteers Wanted

Volunteers wanted to participate in a linguistics study. Participants will be required listening to sentences on tape and judging their correctness in English. Greek-English bilinguals will listen to sentences in Greek and judge their correctness. All participants must also complete a questionnaire about their language use.

If you are one of the following:

- An English monolingual
- A Greek-English bilingual

English monolingual volunteers will be paid \$5 per session. Each session is approximately 30 minutes. Greek-English bilingual volunteers will be paid \$10 per session. Each session is approximately 60 minutes.

Linda A. Pelc, Student at City University of New York
Call: 718 472-4460

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