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**THE MENTAL LEXICON IN STUDENTS OF NON-SPOKEN LANGUAGES: A CASE STUDY
WITH ANCIENT GREEK AND LATIN**

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INTRODUCTION. Within the framework of mapping the mental second language (L2) lexicon, there exists a multifaceted debate concerning its psycholinguistic organization both in and of itself and in relation to the first language (L1). This paper will focus on the L2's psycholinguistic organization, but more specifically within the framework of ancient languages (Ancient Greek and Latin [Ancient L2]). The situations, under which these languages are utilized and taught, are particularly unique due to the fact that they are minimally spoken and written, rather, read.

Despite these striking differences between conventional L2s and ancient L2s, very little psycholinguistic research has been performed concerning the psycholinguistic structure of these languages, and no work has been done concerning the mental lexicon's organization within ancient-L2 students.

With phonological, word-categorical, and semantic features of the mental lexicon, both in an L1 and L2 environment, having been explored over the years (Miller, 1999), this study undertakes the task of investigating, for the first time, the tendencies of possible dominant phonological, word-categorical, or semantic organization and processing within ancient-L2s. Studies in the structure of the L2 lexicon, like those from Zareva (2007), have pointed to categorical tendencies in L2 lexicon organization, at least at the intermediate stages of acquisition. Given this evidence, we can explore the various possibilities surrounding the unique circumstances of ancient-L2s. First of all, in consideration of the paradigmatic (morpho-syntactic) tendencies for organization in the teaching of Greek and Latin, one may be inclined to view ancient-L2 acquisition as inclined toward such an organization. Furthermore, with the phonological register being approached in a drastically different way with non-spoken languages, one might be inclined to speak of graphemic register rather than phonological register concerning the mental lexicon tendencies. With semantics at the forefront of many L1 and L2 lexical organization hypothesis (Miller, 1999), one must entertain the idea of semantic association with ancient language mental lexicon organization. With such results coming from empirical evidence through word association tests conducted in the Zareva study and other studies like Aitchison (1987) confirming through other types of empirical tests measuring syntactic and phonological association with both the L1 and L2 mental lexicon, curiosity arises concerning the empirical testability of these elements encompassed in one framework. For this reason, we must first understand the three areas of possible semantic, phonological, and syntactic-categorical constructs imposed upon current psycholinguistic models of L2 and, thus, devise a test or series of tests in order to examine possible frameworks for the L2 organization in ancient languages.

SEMANTIC ORGANIZATION OF ANCIENT L2 LEXICON. The organization of the mental lexicon in conjunction with semantic information associated with stored words has been supported by numerous conclusions drawn from empirical evidence. This organization theory was supported by studies like Aitchison (1987) and Zareva (2007), which tested

word associations within connected speech in the subject's L1 (Aitchison) and word associations purely within the L2. Where one subject was given the word "bank" as a prompt, for example, they would supply the word "robber." With this evidence, Aitchison concluded that the analysis of lexical selection closely associated words, which are semantically related. Within this context, Cielslicka – Ratajczak deduces from the Aitchison studies that the L2 lexicon operates within the same semantic-associative parameters. Cielslicka – Ratajczak cites Meara (1983), in the conclusion that semantic association were the driving force behind subjects choosing semantically motivated responses to choosing words to fill in the blank for C-tests¹. In another work by Aneta Pavlenko (2009), the theory of conceptual restructuring in the L2 mental lexicon's acquisition became a viable option of the semantic association of the mental L2 in general. While conceptual restructuring within the Pavlenko's study refers to the speaker's association between their L1 and L2, compared to my own study, which deals with internal semantic association, I feel that this study can be taken into account concerning general conceptual semantic restructuring. Thus, a viable option within the scope of ancient L2s is that learners of ancient languages categorize their mental lexicon semantically by relating some word with other words through their semantic content. Often in these classes, students are taught to "group" words according to semantic meaning through nuance in usage in particular authors, or through graphemic comparison in that they look for words, which are etymologically (therefore semantically) related. On such example would be the common association of the Greek παιδεύω (paideuo – to educate) with the word παῖς (pais – child). Where this is often a subject of pedagogy, together as a matter of evidence with the Cielslicka – Ratajczak conclusions, we could conclude that semantic organization is a plausible model of processing within the ancient L2 lexicon.

PHONOLOGICAL/GRAPHEMIC ORGANIZATION OF THE ANCIENT L2 LEXICON. Another viable option for understanding the ancient L2 lexicon, is the possibility that phonological categorization governs its processing and organization. This possibility may seem somewhat off-topic as the measuring of the phonological register within the context of ancient L2 learning and production is severely limited by the fact that people to do speak the language. However, empirical evidence from Bernt (1987) suggests that a close association exists on a conceptual level between the phoneme and grapheme, in that they can be viewed as registering many of the same processes within lexical access. In considering this evidence, we can look to where Aitchison (1987), in another study, examined the "bathtub effect" where word association with both L1 and L2 languages are tested. In the test, the initial and final syllables are provided with the middle syllable dropped. This provides a base for the subjects to fill in the blank. Aitchison concluded that phonology plays a significant role in the mental lexicon's organization and processing in that an average of 84% of words were erroneously produced with a retention of initial consonants and 76% of erroneously produced words retained final consonants. Drawing up this evidence, Aitchison concluded that the bathtub effect points to a strong association of phonological information and the access of lexical items when

¹ The C-test is used to assess word association, where subjects are given a word or a part of a sentence and asked to fill in the blank with a particular word. This test showed that semantic driven choices were preferred by subjects, as to syntactic, or phonological ones.

processing language. These two studies provide significant evidence for a phonological model of organization and processing within the mental lexicon. Thus, a phonographic organization of the ancient L2 lexicon is plausible.

SYNTACTIC/CATEGORICAL ORGANIZATION OF THE ANCIENT L2 LEXICON. A third and final possible model of organization and processing for the ancient L2 lexicon is the syntactic/categorical model. In major ancient language education programs, the syntactic categories and “endings” are a major areas of concentration for both beginners and advanced students of the language. It is possible that this emphasis, or natural psycholinguistic inclination thereunto, would cause the mental L2 lexicon of an ancient language speaker to be organized within a syntactic/categorical model. Garman (1990) showed that word selection errors with slips of the tongue tend to preserve word class (i.e. nouns replace nouns, verbs replace verbs, etc.), thus evincing a strong relationship between lexical retrieval and syntactic category of that lexical entry. Furthermore, TOT (tip of the tongue) studies carried out by Brown and Brown-McNiel (1966) observed using word association tests that the TOT guesses tended to be of the same category, suggesting that there is a strong syntactic/categorical association within both the L1 and L2 mental lexicon. Aphasic studies (Ellis, 1985) have yielded similar results, where aphasic subjects, who were asked to describe a busy kitchen scene, tended to replace nouns with nouns and verbs with verbs in their erroneous guesses. Within the realm of bilingual studies, Given this empirical evidence and trend within ancient language pedagogy, the mental ancient L2 lexicon has a conceivable change of being organized and processed on a syntactic/categorical level.

METHODOLOGY: In order to adequately compensate for the challenging task of measuring the mental ancient L2 lexicon in modern language speakers, a test is required, which: adapts to the subjects’ normal medium through, which the language is conveyed – reading/writing; Registered graphemic/phonological, categorical, and semantic characteristics of the L2 holder’s response; and incorporated the elements of past tests, which measured these characteristics of the mental lexicon’s structure.

Jenkins, in Aitchison (1987) and Zareva (2007), set forth a “word association experiments”, from which I have structured the format of my stimulus problems. This involves presenting specified words from all parts of speech and requesting the subject to respond to the word with an associated word. Where Jenkin’s test was controlled, I have adapted my test by providing 3 words to associate with the prompt word. Words the subjects could choose from are provided rather than produced, to compensate for the fact that words are normally not spontaneously produced in the pedagogy of ancient L2s. These 3 words bear respectively phonological, semantic, and categorical features of the prompt word. The words are ensured to not overlap into two categories. For instance if the word δῶρα (gift, neuter, plural, nominative) is given, I provide a phonologically similar word, but unrelated in semantics or relative syntactic category (relative syntactic category meaning that if another noun was provided for semantic or phonological comparison, it was not neuter plural or nominative). See example prompt words and selection words below. Garman (1990) devised a test where the subject was required to word select words from

phonetically similar but semantically deviant prompts. Keeping this methodology in mind with that of Jenkin's, I have endeavored to create one selection word in each set phonetically similar, but semantically deviant from those of the prompt word, as aforementioned. I endeavor to also, according to the Aitchison model, vary the phonological selection word categorically.

In order to more accurately isolate the subject's response to instinctual rather than thought out responses to word association, I will modify a qualtrics.com survey with Java script in order to allow both the prompt word and selections to be shown on the same page for 5 seconds. 5 seconds will provide ample opportunity for the subject to recognize the word and associate the perceived response. 5 seconds, however, will not be sufficient time for the subjects to analyze possible patterns - this in order to induce a natural response rather than planned. There will be a set of 50 stimuli sets as described above. The student will simply skip to an average of 20 questions due to various reasons, as predetermined by preliminary tests. In order to identify meaningful results, I will sort and evaluate each answer according to the end response of how many years of how they have taken Greek or Latin according to the aforementioned criteria of less than two years, two to five years, and over five years. The test will be administered through a *Qualtrics* survey and sent out to classics students of Brigham Young University, Franklin and Marshall University, and Indiana University.

In the evaluation of the results, I will report on the actual number of responses according to each experience group and their corresponding responses according to one of the three categories. In order to account for the fact that the subjects will respond to different questions, I will total the entirety of the responses according to whether they chose the phonologically, categorically, or semantically associated word, together with which experience level they are at. I will also take the percentage of responses for each of these questions and look for trends in change of at least 3-5% in order to evaluate significant differences between the experience levels and, thus, evaluate possible "change" in the mental lexicon access tendencies across experience levels. In order also to evaluate the possible changes in tendency, I will also calculate the variance average between the responses by first finding the variance of each phonological, categorical, and semantic response and by experience category. This variance will allow for the evaluation of any tendencies for a more succinct organization of the mental lexicon between the experience groups (i.e. More experienced students are more likely to choose the same association, indicating a more organized lexicon, and, thus, an indication of more definitive results concerning the universality of the results among the test group).

SUBJECTS: There are 15 subjects for Ancient Greek and 21 for Latin. Each subject will be given the same test and sorted according to the end question of whether they had taken under two years of the language, 2 to 5 years, and over 5 years. Age is not considered a factor.

Each subject will be prepared by being informed that instructions will appear on the beginning screen of the program. The instructions will read: Identify the word at the top of the page, and click on the word at the bottom of the page, which you most closely associate to the word at the top of the page. You will have five seconds for each set. After they are done reading and understanding these instructions, they will click "begin" to begin their test at their own leisure.

ANALYSIS: The following are the results taken from November 24th until December 7th 2011.

Latin

	>2 Years	2—5 Years	<5 Years
Phonological	69	70	34
semantic	75	169	187
categorical	27	38	29

Figure 1 Latin Word Association Test – Number of Responses

These percentages are taken by calculating the total from each column and dividing each of individual results by the columns total:

	>2 Years	2—5 Years	<5 Years
Phonological	0.403508772	0.252707581	0.136
Semantic	0.438596491	0.610108303	0.748
Categorical	0.157894737	0.137184116	0.116

Figure 2 Latin Word Association Test - Test Percentages

These are the same percentages expressed in graph form:

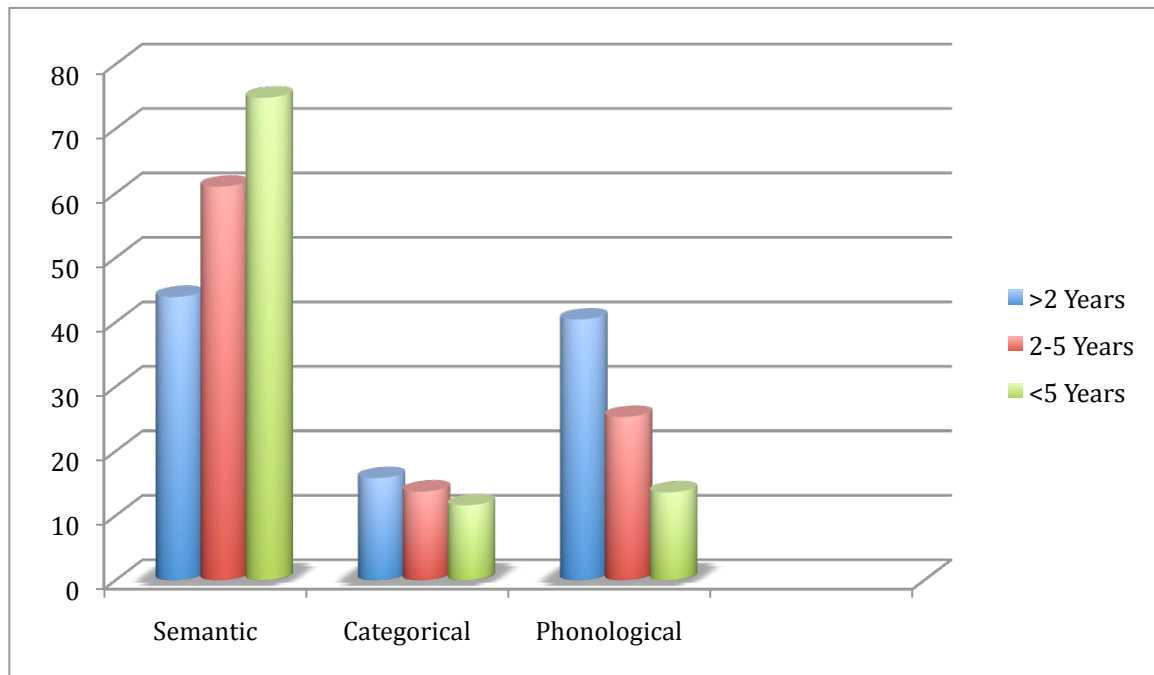


Figure 3 Latin Word Association Test – Responses Percent

These results are the variance calculations taken by calculating the variance for each answer and calculating the average among 50 answers.

	>2 Years	2-5 Years	< 5 years
Average			
Variance	0.513877551	0.394489796	0.260204082

Figure 4 - Variance Average – Latin Responses

Greek

	>2 Years	2—5 Years	<5 Years
Phonological	53	21	17
Semantic	64	28	60
Categorical	30	15	20

Figure 5 - Word Association Test - Number of Responses

These percentages are taken by calculating the total from each column and dividing each of individual results by the columns total:

	>2 Years	2—5 Years	<5 Years
Phonological	0.360544218	0.328125	0.175257732
Semantic	0.43537415	0.4375	0.618556701
Categorical	0.204081633	0.234375	0.206185567

Figure 6- Greek Word Association Test - Test Percentages

These are the same percentages expressed in graph form:

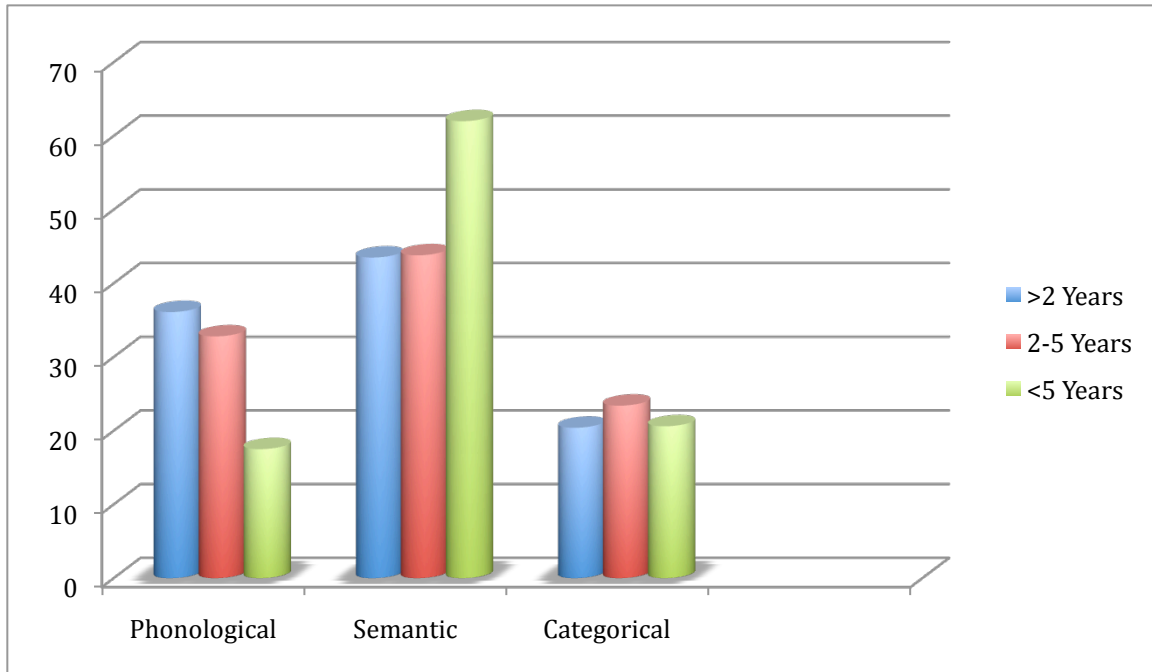


Figure 7 - Greek Word Association Test - Response Percent

These results are the variance calculations taken by calculating the variance for each answer and calculating the average among 50 answers.

	>2 Years	2--5 Years	<5 Years
Average			
Variance	0.5568	0.31	0.3294

Figure 8 - Variance Average - Greek Responses

ANALYSIS SUMMARY: The analysis overall shows a significant trend towards semantically associated responses. As a general view, of these results there is also a very clear tendency in both Greek and Latin from categorical responses being the least influence, followed by the phonological responses, and then the semantic responses as the most prevalent. As we can see from the percentages among the Latin phonological results, Latin students with fewer than two years experience had a 30% greater tendency toward phonological results than with the students with more than five years of experience. An analogous relationship exists between students of ancient Greek of similar experience gaps, except the difference is that of about 20% rather than 30%. An inverse relationship exists with the semantic responses in comparison with the phonological results. Between the Latin students with under two years experience and the Latin students with over five years experience, the tendency toward word association based on semantic analysis jumped 30%, in favor of the Latin student with more than five years of experience. The same trend was observed in with the Greek students but with an average of an 18% increase in tendency towards the semantic relation word selection. In both Greek and Latin the categorical selections were observed to hover within 3 % of each other, indicating a steady and consistent average of 13% tendency toward categorical word association selection for Latin and a 21% average for Greek among all three experience categories. The sum of these significant findings can be seen visually on the bar graph by the relatively lower and uniform distribution of the categorical word group on the graph.

In other significant observations of these numbers, we can see a relatively uniform distribution of semantic and phonological word choice with the student of less than two years experience, as indicated by the relatively even blue bars on both the Greek and the Latin graph. Analogously, the relationship of the phonological and categorical word association choices with student of over five years of experience remains in relatively uniform distribution. As stated earlier, the obvious dominant semantic association also exists uniformly throughout the entirety of the study. This semantic associative dominance is most prevalent within the choices of the students with over five years of experience.

The prevalence of the middle group, those students with two to five years of experience, introduce some of the most connective data of the data spread. The students with two to five years of experience uniformly averaged a type of “middle ground” between the associations made by the less experienced students in comparison with the more experienced students. The exception to this claim is the categorical associations made by 2-5 year experienced students, who only vary by 2.6 percent, which is under the establish threshold of significance and has already been accounted for in the overarching trend of uniform categorically related word association.

The variance spread also produced significant results as it is was relatively uniform as seen from the results on the variance averages for both Greek and Latin. These variance averages indicate the tendency for total of the respondents to respond to the same question. These results, as seen from above, show a difference in response variance between students with less than two years experience and

students with over five years of experience of .23 for Greek and .35 for Latin. This significant spread shows that advanced Latin students of over 5 years of experience are twice as likely to choose the same word, indicating an increase of 96% in uniformity of word selection from those students with less than two years of experience. In Latin the variance spread for 2 – 5 years experienced students was very near the median of the entirety of the Latin results, following suit with the other percentage calculations from the responses. Of worthy note, the Greek variance average for student with 2 – 5 years of experience was not at all near the mean, in fact below the 5 year, indicating (by analogy with the results from the Latin tests) that many of the students taking the test may have been closer to five years than two years of study within their experience. Despite this difference, the consistency between the students of fewer than two years and of more than five years supports the general tendency of results.

Thus, the empirical results indicate that learners of ancient-L2s have a tendency toward a combination of semantic and phonological/graphemic organization at the beginning of their language learning careers and as they develop experience, changes to a dominant semantic organization.

CONCLUSIONS: As we can see from these results a strong tendency towards ultimate semantic organization within the mental lexicon. This assertion fits with much of the literature of Aitchison and Cielslicka – Ratajczak, as mentioned earlier, in that semantic word organization within the mental lexicon acts as an overarching prevalence to other evident facets of the mental lexicon's organization (categorical-syntactic and phonological). In turn, the phonological evaluation of lends insight into the fact that there is an apparent strong phonological/graphemic association at the beginning of the ancient-L2 acquisition. This association, as aforementioned, could be supported by the strong pedagogical focus on graphemic-semantic associations in vocabulary teaching within the programs utilizing texts like *Wheelock's Latin Grammar* and *Hansen and Quinn's* intensive course in Attic Greek. The empirical evidence, thus, supports the idea of a paradigmatic shift in the mental lexicon to a system much more dominated by the semantic organization from students, who have studied for over five years, in comparison to the student with under two years of experience. The evidence of a progression through this shift in mental lexicon organization is supported by the empirical results of students with two to five years of experience and the even distribution of their means results between the means results of the students of under two years experience and over five years experience. As an addition to these results, we can also utilize the empirical evidence of the uniformity of the categorical word choices to indicate that the syntactic-categorical facet of the mental lexicon play much less significant, yet, steady role in the mental lexicon. The most significant role of the categorical relationship comes in light of the categorical word association responses with the over-five-year experienced students. The categorical responses match within 2% for Latin and a 3% of the phonological responses. Such a correlation may indicate the fact that after a certain amount of experience, the mental lexicon takes a tendency towards semantic organization, but retains a uniform tendency of phonological and categorical organizations. With such an interpretation of these results, we can draw the conclusion that there exists and inverse relationship between the phonological/ categorical tendencies of the mental lexicon are

inversely related with the ultimate semantic prevalence increase within the mental lexicon access in more advanced students and scholars of ancient-L2s.

One of the starkest limitations of this study are the lack of equal numbers between Latin and Greek surveyees. Naturally, Latin programs at universities tend to be larger, as at the three universities where these surveys were distributed. Equal numbers in surveyees between languages would most likely bring more definite results between the inconsistencies in the variables, which we have seen.

Nevertheless, the practical and theoretical application of such an understanding would completely change the way educators teach ancient languages. If we understand that proficiency within a language is directly related to the prevalence of semantic organization of the mental lexicon, then educators could do more techniques to work with the semantics of the lexical item teaching. If phonological access is also an important tendency within the mental lexicon, then our educators could do more to perpetuate the phonological access as well as production, to more effectively utilize the natural process of phonological access during the language learning process, especially as this element is of particularly neglect within traditional classical language programs, where very little is spoken, and the concentration lies with reading and writing (i.e. phonological access) rather than production.

FUTURE WORK: As we examine the possible future work with testing the mental lexicon of students of ancient-L2s, we must consider performing the same experiment with programs, which are fundamentally different in approach, especially in the medium of the language learning and vocabulary teaching. Doing this same study in modern Greece, for example, could bring vastly different and interesting results, being as programs in modern Greek teach ancient Greek with a heavy emphasis on speech, thereby introducing a much stronger basis for phonological access, and possible quicker bridge to semantic association and eventual fluency. Latin speaking programs and seminars like those at Dickinson College and the University of Kentucky provide immersion program for both advanced and beginning students. It would be of great contribution to this research to be able to test both beginning and advanced students coming out of the program, and compare the results with this study. Testing advanced students before and after this program would also be advantageous to the true ideas of fluency in a non-spoken language, and how this idea changes when it is spoken. While studying the ancient-L2s is a completely new and untouched field in psycholinguistics, there remain many studies yet to be done. An adaptation of the concepts of these studies has yet to be tested. I call on other researchers to use other methods such as C-tests and reading comprehension tests in order to further evaluate other areas of psycholinguistic ancient-L2 studies such as syntax development, phonological access, and reading scansion using eye-trackers. Thus, this work is among the first of many more to come.

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SURVEY QUESTIONS:

Greek Survey

- | | | | |
|--|--|--|--|
| Q2
<input type="checkbox"/> φάγων | • <input type="radio"/> παιάν | • <input type="radio"/> καλεσάμενος | <input type="checkbox"/> λύουσιν |
| • <input type="radio"/> ἄρχων | • <input type="radio"/> βαδίζειν | Q8
<input type="checkbox"/> ξένοθεν | • <input type="radio"/> κάλουσιν |
| • <input type="radio"/> τροφή | • <input type="radio"/> παῖς | • <input type="radio"/> ὄθεν | • <input type="radio"/> ἐλεύθερος |
| • <input type="radio"/> φαεῖνε | Q5
<input type="checkbox"/> καμηλός | • <input type="radio"/> ξερός | • <input type="radio"/> λύζων |
| Q1
<input type="checkbox"/> δῶρα | • <input type="radio"/> γυμναστής | • <input type="radio"/> Ὀδυσσεια | Q12
<input type="checkbox"/> Ἴταλός |
| • <input type="radio"/> δοάν | • <input type="radio"/> χαμηλή | Q9
<input type="checkbox"/> καλῶς | • <input type="radio"/> Ρῶμη |
| • <input type="radio"/> θεοῖς | • <input type="radio"/> ἄγω | • <input type="radio"/> ἀγαθός | • <input type="radio"/> ἴταλα |
| • <input type="radio"/> βιβλία | Q6
<input type="checkbox"/> μάχη | • <input type="radio"/> καλῶ | • <input type="radio"/> Ἑλλην |
| Q3
<input type="checkbox"/> Σωκράτης | • <input type="radio"/> ὀλητεύω | • <input type="radio"/> πολλάκις | Q13
<input type="checkbox"/> θεσσαλός |
| • <input type="radio"/> ἀπολογία | • <input type="radio"/> μῆχος | Q10
<input type="checkbox"/> βαρύς | • <input type="radio"/> θέσσασθαι |
| • <input type="radio"/> σωρά | • <input type="radio"/> δοχή | • <input type="radio"/> βάραξ | • <input type="radio"/> θερμή |
| • <input type="radio"/> Πλάτων | Q7
<input type="checkbox"/> κέκλεμμαι | • <input type="radio"/> ἐλεφάντης | • <input type="radio"/> Ἀθηναίος |
| Q4
<input type="checkbox"/> παιδεύειν | • <input type="radio"/> λέλειμμαι | • <input type="radio"/> φαρδύς | Q14
<input type="checkbox"/> βαγαῖος |
| | • <input type="radio"/> ληστής | Q11 | • <input type="radio"/> Ζεῦς |

- βαγός
- άγαθός

Q15

φωνή

- μάχη
- φωνγύω
- κραυγάζω

Q16

τρέχεις

- έχεις
- τρέχνος
- έδραμον

Q17

γρηγορικῶς

- τρέχειν
- κακῶς
- γρήϊος

Q18

δουλαγωγία

- δηλαυγῶς
- παιδεία
- μαστίζω

Q20

δύνασθαι

- δύρεσθε
- εἶναι
- οἶος τε

Q22

ύπηρέμα

- πρόβλημα

- μαλακός
- ύπηρεσία

Q23

θεός

- θέω
- φύλαξ
- Άθήνα

Q24

εύαγγέλιον

- Παῦλος
- εύαγωγία
- πέδιον

Q26

καί

- τε
- καίη
- ή

Q27

ρέϋμα

- ένεργέω
- ρέα
- πράγμα

Q29

είδωλείον

- είδα
- ιερόν
- ζωγραφεῖον

Q30

δόγματι

- πίστις

- πράγματι
- δόματε

Q32

άλλοι

- όποιοι
- αλλά
- διάφορος

Q33

Ίσραηλίτης

- Έβραϊκή
- ύσαλιβάτης
- Έλλην

Q34

πότε

- ποτέον
- τι
- αύριον

Q35

ύστερον

- έπομένως
- τοπικόν
- ύστήρια

Q36

όσσε

- μάτιον
- όσιος
- άνθρώπω

Q37

γενός

- οικία

- μέρος
- γένυξ

Q38

πρός

- πρών
- ιημι
- επί

Q39

άναφορά

- δῶρα
- άφορα
- καταβαίνω

Q40

Άθήνα

- άθωος
- ναυτικῶς
- μεριά

Q41

γράφεται

- κατηγορία
- γαφάδα
- διδάσκεται

Q42

τραγωδέω

- τράγκας
- Σοφοκλής
- διδάξω

Q43

ικεσία

- λυπέω

- ὑγρασία
- ἱρεκούσσα

Q44

ρήτωρ

- αὐτοκράτωρ
- ρητά
- ὁμιλέω

Q45

φάλαγξ

- αἶξ
- ὀπλιτεύονται
- φαλά

Q46

πλήθος

- πλήρες
- μέρος
- μάζα

Q47

Latin Survey

Q1

capio

- caput
- oppidum
- loquor

Q2

iambeus

- Thyestes
- iamdudum

οὖν

- ἔπειτα
- οὖναι
- γάρ

Q48

ρήνεσσι

- χέρσι
- ῥῆον
- ἀρνειός

Q49

μάραγδος

- μαργαρίσκον
- λίθαξ
- θηρεφόνος

Q50

θηρεύετε

- ζῶα

- θησαυριστέον
- περιέξουσιν

Q51

αὐτικά

- μακρός
- αὐτάρ
- νῦν

Q52

ὑπολογίζω

- νοῦς
- ὑλουργός
- δέομαι

Q53

βρῶματα

- μέρη
- βρόμος
- ἐσθίω

Q54

ἄβατος

- ἐρημία
- ἄβαπτος
- φαρδύς

Q55

Θῆβαι

- Αθῆναι
- Ἐβοια
- θαβακόν

Q59

How long have you studied Greek?

- Under 2 years
- 2-5 years
- More than 5 years

- bonus

Q3

gerontea

- gero
- botanismus
- uxor

Q4

feralis

- malus

- mors
- ferratilis

Q5

virtus

- Jovem
- vitalis
- dirus

Q6

fidunt

- facti sunt
- fitilla
- mihi

Q7

lacerna

- lacer
- caecilia
- togatus

Q8

- tot**
- quotiens
 - todi
 - quod

Q9

intellego

- inelegans
- sapientis
- ruo

Q10

iam

- iambus
- tandem
- praesentia

Q11

Cicero

- oro
- cicer
- Augustus

Q12

pelagi

- mare
- palaga
- navigatio

Q13

licentia

- liciatus
- liber
- vir

Q14

virtus

- viror
- trabea
- polleo

Q15

redanimatio

- vivere
- redardesco
- trabica

Q16

hiavi

- oscitans
- hiera
- laudare

Q17

ira

- furis
- iri
- consilia

Q18

proxima

- remotio
- prox
- omnis

Q19

senis

- sentis
- ferox
- vetus

Q20

noctis

- nocere
- lunaris
- iuveni

Q21

pontifex

- sacerdotalis
- ponticus
- res

Q22

vivere

- uti
- viri
- anima

Q23

publicae

- vulga
- acii
- iustus

Q24

Italia

- itaque
- romani
- amicitia

Q25

perditi

- corruptela
- peritia
- uxores

Q26

illustrantur

- lux
- sunt
- illusorii

Q27

amens

- amen
- rabide
- venturus

Q28

esse

- vita
- essui
- videre

Q29

metu

- timens
- homine
- meto

Q30

immortalus

- immoraturum
- divinitas
- terrenus

Q31

pestem

- puerem
- lues
- pessum

Q32

coniuratio

- foedere
- ignominia
- circuito

Q33

fuertunt

- furenter
- sequuntur
- existens

Q34

neglegendas

- incuria
- gestendum
- negibundo

Q35

opprimar

- sequatur
- oppressor
- artatum

Q36

moenium

- puerorum
- paries
- moenera

Q37

fetari

- odor
- laudari
- fateari

Q38

demigrato

- demagis
- laudata
- peregrinor

Q39

saepe

- creber
- saepes
- vernilior

Q40

es

- geres
- esox
- tu

Q41

spem

- exspecto
- sipem
- terram

Q42

vexationis

- vectarius
- turbo
- lucis

Q43

venisti

- mentitus est
- vestis
- iter

Q44

manus

- icio
- mancus
- caput

Q45

servate

- legate
- custodia
- severe

Q46

vix

- vixet
- difficultas
- feliciter

Q47

cunctus

- bona
- plene
- cuculare

Q48

mehercule

- heu
- clamo
- melculum

Q49

sagacissimum

- summe
- augur
- sagina

Q53

How many years have you studied Latin

- Under 2 years
- 2-5 years
- More than 5 years

Q54

Choose one

- Male
- Female