



## RESEARCH ARTICLES

# Dealing with unknown words in L2 reading: vocabulary discovery and lexical inferencing strategies

## Descubriendo vocabulario y estrategias de inferencia léxica: Uso de palabras desconocidas en la lectura en segunda lengua

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**Citation/ Para citar este Artículo:** Rousoulioti, T. & Mouti, A. (2016). Dealing with Unknown Words in L2 Reading: Vocabulary Discovery and Lexical Inferencing Strategies. *Colomb.Appl.Linguist.J.*, 18(1), pp 56-70

**Received:** 27-May-2015 / **Accepted:** 24-Jan-2016

**DOI:** <http://dx.doi.org/10.14483/calj.v18n1.9171>

### Abstract

Vocabulary learning strategies constitute a subclass of language learning strategies which can be applied to the four language skills. The aim of the present study is to explore the vocabulary strategies adopted by adult learners of Greek as a second/foreign language when dealing with unknown words in L2 reading. To this end, the learners answered a questionnaire and so did their teachers. The results indicated that context and the general knowledge the learner of a second or foreign language brings with him/her about the topic—which is mainly supported by the other words in the sentence—play the most important role in understanding vocabulary. This conclusion probably confirms the power of the syntagmatic axis in the sentence, reinforcing mainly the holistic approach to be adopted in the classroom for the teaching of vocabulary. The process of triangulation has partially supported the research results.

*Keywords:* inferencing, L2 reading, second/foreign language, strategies, vocabulary

### Resumen

Las estrategias de aprendizaje de vocabulario constituyen una subclase de las estrategias de aprendizaje que se pueden aplicar a las cuatro habilidades lingüísticas. El objetivo del presente estudio es explorar las estrategias de vocabulario adoptadas por los estudiantes adultos de griego como segunda lengua/ lengua extranjera cuando se trata de palabras desconocidas en la lectura del L2. Con este fin, los estudiantes y los maestros respondieron a un cuestionario. Los resultados indicaron que el contexto y los conocimientos generales del estudiante de una segunda lengua/ lengua extranjera sobre un tema —el cual es apoyado principalmente por el resto de las palabras en la frase—desempeñan el papel mas importante en la comprensión del vocabulario. Esta conclusión, probablemente, confirma el poder del eje sintagmático en la oración, sobre todo reforzando el enfoque holístico que debe adoptarse en el aula para la enseñanza del vocabulario. El proceso de triangulación ha apoyado parcialmente los resultados de esta investigación.

*Palabras clave:* inferencia, lectura en segunda lengua, segunda lengua, lengua extranjera, estrategias, vocabulario.

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## Introduction

Vocabulary comprehension and use have always been on the forefront of any consideration of teaching/learning and language assessment, of both first language (L1) and second/foreign language (L2) (Nation, 2001; Read, 2002; Schmitt, 2000). Vocabulary learning strategies constitute a subclass of language learning strategies which can be applied to the four language skills. Hence the aim of the present study is to explore the vocabulary strategies adopted by adult learners of Greek as a second/foreign language when dealing with unknown words in L2 reading. To this end, a questionnaire was distributed to the students of Greek as L2 at the Army Corps Officers School<sup>3</sup> in Thessaloniki, Greece. The results of this research on the students' self-reported strategies behavior were subsequently cross-checked with the experience of their teachers at the same school.

Within the context of this research, the strategies used by the students, both language learning and language use strategies, will here on be referred to as language learner strategies. Our research hypotheses focus on the learning strategies adopted by learners when encountering unknown words in a reading context. That being said, we need to clarify that the learning process is not of our primary concern, even if the strategies employed when dealing with unknown vocabulary may result in vocabulary learning and more specifically in incidental vocabulary learning. Our research interests focus on the process of discovering the meaning of a new word once encountered for the first time and not on the consolidation and the incidental or intentional learning of the specific vocabulary.

Schofield (1982) states that a lot of research has been carried out on the strategies that learners use once an unknown word or phrase has been identified mentioning, in particular, the so called "word attack strategies" (e.g. Nuttall, 1982). He concludes that there are three main types of strategies that learners may choose from in the particular case:

- a. Skipping, i.e. not finding out what the word means at all.

- b. Guessing or, as it is known more technically these days, "inferencing".
- c. Appealing to another person who may know the word, or looking up the word in reference materials (e.g. dictionaries).

### *Language Learning and Use of Strategies*

Since the early 90s, attempts have been made to link the strategies adopted by L2 learners not only with communicating in the target language, but also with language acquisition during the learning process. Definitions have also pointed in this direction, like that of Chamot and O'Malley (1990), according to which, strategies are regarded as "the special thoughts or behaviors that individuals use to help them comprehend, learn or retain new information" (p. 1).

Oxford (1990), on the other hand, considers strategies to be "specific actions taken by the learner to make learning easier, faster, more enjoyable, more self-directed, more effective, and more transferable to new situations" (p. 8). Later, she adds that language learning strategies are:

Specific actions, behaviors, steps, or techniques that students (often intentionally) use to improve their progress in developing L2 skills. These strategies can facilitate the internalization, storage, retrieval or use of the new language. Strategies are tools for the self-directed involvement necessary for developing communicative ability. (p.8)

Strategies have also been defined as acts "which contribute to the development of the language system which the learner constructs and affect learning directly" (Rubin, 1987, p. 22 as cited in Lessard-Clouston, 1997), while, according to Cohen (1996), the term strategy "has, in fact, been used to refer both to general approaches and to specific actions or techniques used to learn a second language" (p. 9).

The aforementioned definitions make it clear that the focus seems to be shifting from the outcome associated with strategies, namely, linguistic and sociolinguistic ability, to the process and characteristics of learning itself, so that the term *strategies* refers not only to language use and

<sup>3</sup> ACOS from now on.

communication, but also to the learning process. Apart from the language learning strategies, Cohen (1996) draws our attention to language use strategies. According to Cohen (1996), the term second language learner strategies “[encompasses] both second language learning and second language use strategies. Taken together, they constitute the steps or actions selected by learners either to improve the learning of a second language, the use of it, or both” (p. 1). Cohen (1996) also adds that “whereas language learning strategies have an explicit goal of assisting learners in improving their knowledge in a target language, language use strategies focus primarily on employing the language that learners have in their current interlanguage” (p. 3).

When it comes to taxonomies, Cohen (1996) mentions that one of the problems around learning strategies research “results from the fact that different criteria are used to classify language learning strategies, causing inconsistencies and mismatches across existing and other categorizations” (p. 6). The main taxonomies and classifications adopted in the language learner strategy research are the ones proposed by O’Malley and Chamot (1990; cognitive, metacognitive and social); Oxford (1990; memory, cognitive, compensation, social, affective, metacognitive); and Wenden (cognitive and self-management strategies). Referring to language use strategies, Cohen (1996) mentions retrieval, rehearsal, cover and communication strategies but he also indicates that all the learning strategies (and thus categories) may assist learners in improving target language use. Supporting this remark, Hsiao and Oxford (2002, as cited in Anderson, 2005) point out that “in daily reality the strategies for L2 learning and L2 use overlap considerably” (pp. 761-762).

### *Vocabulary Learner (Discovery) Strategies*

Vocabulary (learner) strategies are considered to be a subclass of the language learning and language use strategies (language learner strategies). Schmitt (1997) provided a detailed reference to the vocabulary learning strategies attempting also to make a taxonomy, which was based on Oxford’s taxonomy. However, capitalizing on the lack of a distinct “category in Oxford’s taxonomy which adequately describes the kind of strategies used

by an individual when faced with discovering a new word’s meaning without resource to another person’s expertise” (Schmitt, 1997, p. 205), Schmitt created a new category for these strategies, called determination strategies (DET). According to Schmitt, when encountering an unknown word for the first time, learners have two options. They “must use their knowledge of the language, contextual clues, or reference materials to figure out the new meaning (determination strategies), or ask someone else who knows (social strategies)” (Schmitt, 1997, p. 206). In his taxonomy of vocabulary strategies, Schmitt (1997) makes another distinction between discovery and consolidation strategies.

The first group includes “strategies for the discovery of a new word’s meaning” and this is where determination and social strategies are implemented. The second group includes “strategies for consolidating a word once it has been encountered” which are employed once learners have been introduced to a new word, having to make some effort to learn it and remember it using consolidation strategies (social, memory, cognitive, or metacognitive).

This study investigated discovery strategies (determination and social strategies) which are presented in the table 1 as proposed by Schmitt (1997).

**Table 1.** Determination and Social Strategies (Schmitt, 1997)

<b>Strategies for the Discovery of a New Word’s Meaning (Discovery Strategies)</b>
DET <sup>4</sup> Analyze part of speech
DET Analyze affixes and roots
DET Check for L1 cognate
DET Analyze any available pictures or gestures
DET Guess from textual context
DET Bilingual dictionary
DET Monolingual dictionary
DET Word lists
DET Flash cards
SOC <sup>5</sup> Ask teacher for an L1 translation
SOC Ask teacher for paraphrase or synonym of new word
SOC Ask teacher for a sentence including the new word
SOC Ask classmates for meaning

4 Determination Strategy  
5 Social Strategy

Of course, vocabulary strategies (not consolidation ones) used to discover the meaning of a new word are also included in the broader learning strategies taxonomies, which approach language learning in a more global perspective. Our research, which traces some of these strategies, is part of the framework of the more general taxonomies of language learner strategies, as these are employed in the field of L2 reading. Cohen, Oxford, and Chi (2002) include the following two strategies in the reading part of their Language Use strategies inventory<sup>6</sup>:

1. Guess the approximate meaning by using clues from the context of the reading material.
2. Use a dictionary to get a detailed sense of what individual words mean.

Chamot and O'Malley (1990) mention the following strategies applied to a reading task with new words underlined:

1. Inferencing (use immediate and extended context to guess new words)
2. Deduction (use grammar rules to identify word forms)
3. Elaboration (use prior knowledge) and
4. Transfer (recognize, use cognates)

Applying direct strategies to the four language skills, Oxford (1990) presents, among others, two compensation strategies applied to the receptive skills (reading and listening): (a) Guessing intelligently using linguistic clues and (b) other clues. Oxford (1990) says:

Guessing is essential for listening and reading. It helps learners let go of the belief that they have to recognize and understand every single word before they can comprehend the overall meaning. Learners can actually understand a lot of language through systematic guessing, without necessarily comprehending all the details. (p. 90)

When applying indirect strategies to the four language skills, Oxford (1990), presents, among

others, the social strategies (e.g., asking for clarification or verification, cooperating with peers) which could be employed by involving the teacher or the classmates.

Nuttall (1996) proposes some word-attack skills, that is, "strategies for dealing with lexical items that really block comprehension" (p. 2) which seem quite similar to the discovery strategies proposed by Schmitt (1997). More specifically she discusses (1) interpretation of structural clues (syntactical and morphological), (2) inference from context and (3) use of a dictionary.

It is obvious that when encountering a new word in a reading context "inferencing or guessing" is considered the most frequent and helpful strategy. According to Nation (1990, as cited by Mohseni-Far, 2008), inference from context is considered "undoubtedly the most important vocabulary learning strategy" (p. 125). Oxford and Scarcella (1994) seem to agree by pointing out that guessing from context is considered the most useful strategy.

### *Inferencing as a Vocabulary Discovery Strategy*

It seems then that all researchers mentioned above employ common terms such as "inference from context," "inferencing," "guessing," "guessing intelligently," and "guess from textual context" to refer to the most helpful strategy, with "lexical inferencing" being the most popular and widely one used. Fan (2003) found that the guessing strategy was the most often used strategy, and Gu and Johnson (1996) reported an "extensive use of guessing strategies by their subjects when reading, employing both local cues ( $M=4.47$ ,  $SD=.84$ ) and wider cues ( $M=4.60$ ,  $SD=.85$ )" (p. 654).

Qian (2004) conducted a study specifically on the frequency and use of lexical inferencing strategies. According to Qian (2004), "lexical inferencing involves making informed guesses of the meaning of an unknown word with the help of all available linguistic cues as well as other sources of knowledge the learner can resort to" (p. 156). When referring to clues, Qian (2004) states that:

<sup>6</sup> <http://www.carla.umn.edu/maxsa/documents/langstratuseinventory.pdf>

In lexical guessing, clues can be available at different levels, ranging from lower-level ones such as orthographical, morphological and phrasal to mid-level ones such as sentential and inter-sentential, and then to more global-level clues from a whole paragraph or a whole text. In addition to linguistic cues, clues relating to world knowledge are often useful. (p. 157)

Haastrup (2010) sees lexical inferencing as a subcategory of text inferencing and, in an earlier study (Haastrup, 1991), distinguishes between two types of processing: holistic (based on contextual clues) and analytic (based on linguistic word level clues). Top-level cues draw on world knowledge and global text/paragraph knowledge, while bottom-level ones are related to local (sentence-word) knowledge.

Fraser (1999) found that, when learners encountered a new word, a greater percentage of learners resorted to lexical inferencing than to dictionary use. Investigating inferencing strategy as well, Nassaji (2003) details that 46.2% of the subjects surveyed used world knowledge, 26.9% used morphological knowledge, 11.5% used grammatical knowledge, 8.7% used discourse knowledge and 6.7% used L1 knowledge, revealing a predominantly top-down approach. In Qian's (2004) study, subjects reported a top-down approach (text, paragraph, sentence, word level) when completing the questionnaire but when observed during reading the results showed a more bottom-up approach. Jelić (2007) also found that participants used a top-down approach employing global strategies more than local ones, considering "the semantic information at the paragraph or text level to be the most useful for guessing the meaning of unfamiliar words" (p. 251).

### *Further Research on Vocabulary Strategies*

For over thirty years, a considerable amount of research has been conducted in vocabulary learning in L2. According to Laufer and Hulstijn (2001) and Meara (1998), there has been sufficient theory-oriented research regarding vocabulary acquisition in L2. However, more empirical research is required regarding vocabulary learning during the various stages of L2 acquisition. Parameters such

as sociocultural context, learner age, gender and language level are of paramount importance when conducting research and drawing conclusions. In briefly presenting the most recent studies regarding vocabulary learning, Gu (2003) claims that extensive research has been conducted concerning the general standards behind the use of strategies. However, the choice, use, and effectiveness of vocabulary learning strategies depend, to a large degree, on the kind of activity being performed, the learner (cognitive and cultural learning styles) and the context, be it in the native, second, or foreign language. Additionally, Mizumoto (2010) documented selected studies regarding the use of more than one vocabulary learning strategy in contrast to studies exploring the use of one particular strategy and concluded that the former is particularly useful from a research point of view as a way of exploring L2 vocabulary learning strategies as L2 learners choose to use a variety of strategies based on entirely personal criteria, depending on their reason for learning a language.

Vocabulary learning, according to Meara (1996) and Nation (1982), is, of course, anything but a static process. Attitudes on vocabulary learning, according to research such as that conducted by Watkins and Biggs (1996), differ from one civilization to another, while the same strategy may be implemented in a different way. It is therefore imperative to cross-reference the strategies learners adopt during the learning process with the results that transpire in the end (Schmitt, 2000).

Research is field-specific and if, for instance, as Ellis (1994) points out, there is an emphasis on the importance of vocabulary, then research follows suit. If, however, research focuses on the automatic use of vocabulary, then it is imperative to focus on strategies which concentrate on frequency, recent creation, and normality of vocabulary. More specifically, the research of Segalowitz, Watson, and Segalowitz (1995) moves in that direction, as they deal with lexical automation.

Other researchers have been in search of the strategy which is considered the best for cultivating vocabulary. However, in the last two decades (Ahmed, 1989; Gu & Johnson, 1996; Parry, 1997;

Sanaoui, 1995), there has been a consensus that more than any other individual strategy, the factors contributing most to the successful acquisition of vocabulary and language in general are the variety of strategies employed by learners as well as their personal learning style. A complete, interrelated, functional, and dynamic vocabulary in L2 develops gradually and grows only if the learner employs strategies which allow him or her to use this vocabulary functionally and in context rather than simply retaining it.

Finally, another group of researchers attempted to look at the field of strategies more broadly alongside the field of psychology (Rose, 2012)<sup>7</sup>. The research detailed in this special issue provides a cross section of strategic learning and self-access practices around the globe according to a common goal that incorporates self-access learning and skills support centres which aim to promote learner autonomy.

Nowadays, research in the field of language learning is learner-oriented and focuses on detecting the way in which individual learners tackle language learning (Mizumoto, 2010). In that light, an attempt has been made in the present study not only to identify the vocabulary discovery strategies employed by learners of Greek as L2 but to determine which practices facilitate discovering the meaning of an unknown word as well.

The present study was motivated by the general proposition that the enhancement of language learners' systematic use of vocabulary strategies has an impact on L2 language learning. According to Baumann, Kame'enui, and Ash (2003) students must be able to learn words independently and develop an appreciation for words. Hence, when teachers are able to trace their students' vocabulary learning strategies, they can help them develop vocabulary awareness.

## Methodology

In the present paper there are two main variables under investigation: type and frequency

<sup>7</sup> <http://sisaljournal.org/archives/dec12/>

of vocabulary discovery strategies and lexical inferencing strategies. More specifically, two research questions were formulated:

1. Which vocabulary discovery strategies do learners of Greek (at the ACOS) use in L2 reading?
2. Which lexical inferencing practices facilitate<sup>8</sup> learners of Greek in L2 reading?

To investigate the above questions, we designed an empirical study to be able to compare the findings of our research with the findings of previous research and find out which vocabulary reading strategies are adopted by a certain population, like this of military schools of higher education. The participants were asked to answer a questionnaire on a Likert-scale. The findings of the research questions were cross-checked with the findings yielded by similar type research that was carried out among the instructors of these students in order to support the students' self-reported responses in the questionnaire. We assumed that the instructors could have a general perception of the reading and vocabulary strategies employed by the students as they usually work in relatively small groups (about 10-15 students) and they constantly work on L2 reading. Additionally, data triangulation was used to facilitate validation of data through cross verification from two sources, students and their teachers.

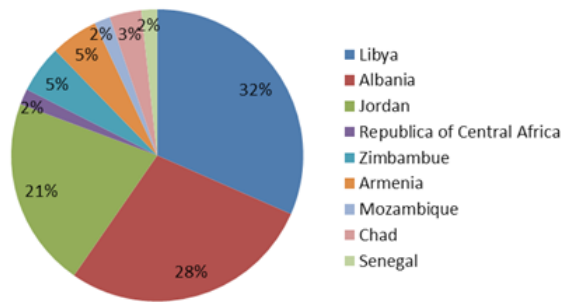
## Participants

The learners participating in this research are non-native speakers who are taught Greek as L2 at ACOS, a military school of higher education in Thessaloniki, Greece. The survey was conducted at the ACOS site and involves 57 foreign students (44 male and 13 female students<sup>9</sup>), all freshmen and sophomores, who were attending Greek language courses. Of them, thirty (30 men) come from Arabic countries, eight from African countries (5 men and 3 women), sixteen (6 men and 10 women) are from Albania and three (3 men) from Armenia (Fig. 1). The

<sup>8</sup> This question attempts to explore any information which exists within the word or around it and which can play a decisive role in the understanding of its meaning in L2.

<sup>9</sup> These percentages seem quite representative of the total population, as the majority of the students in many military schools are male.

military school chosen is one of two<sup>10</sup> military schools admitting foreign students and thus represents a large number of the total population of the foreign students who are taught Greek in military schools in Greece.



**Figure 1.** The countries of origin of the participants in the research

### Instruments

In order to collect the data from the learners in the present study, a questionnaire was designed, aiming at identifying the vocabulary discovery and lexical inferencing strategies adopted by learners of Greek in L2 reading. The questionnaire used is a modification (based on the needs of this particular study) of the closed-ended, Likert-scale questionnaire used by Qian (2004)<sup>11</sup> in a similar study. With the term *modification* is meant that all the questions in Qian's questionnaire were translated to Greek with the required modifications in order to be comprehensible, a small number of items were replaced and an empty row, representing the choice "other" was added in order for all participants to have the chance to express their own personal strategic behavior. This questionnaire used four scale points corresponding to four categories of frequency (often=1, sometimes=2, rarely=3, never=4). This range captures the average response for any given item, which in this case reflects the learning strategies adopted. A pilot study had been conducted with 10 sophomores of ACOS who did not participate in the main survey. The pilot study

<sup>10</sup> The other one being the Evelpidon Military Academy based in Athens.

<sup>11</sup> The first part of Qian's Questionnaire was based on Harley & Hart's (2000) study.

took place in order for the research tool to be checked and modified properly, if necessary.

The first part of the questionnaire addressed the characteristics which makeup the learners' personal profiles as these may influence the choice of some strategies over others<sup>12</sup>. It comprised five questions regarding the year of studies, the university department attended, gender, age, and country of origin of the participants.

The second part of the questionnaire focused on two general questions which are relevant to the research hypotheses of the present study. The first general question relates to the strategies employed by the participants in their effort to understand an unknown word in Greek in L2 reading (Discovery Strategies), whereas the second relates to the lexical inferencing practices that facilitate the aforementioned procedure.

This first general question included in the vocabulary strategies part of the questionnaire offered six alternative ways of dealing with an unknown word in a text. Guessing the meaning of an unknown word from context is the first strategy, a strategy which was expected to reveal the highest frequency. Two more strategies address student recourse to reference materials, with the former of these focussing primarily on dictionaries, while the latter documenting the use of textbooks. We should note that this last strategy involving textbooks is one not usually included in similar studies, and one proving to be an interesting variable at that.

The fourth and fifth strategies were essentially social strategies and involved asking someone else for the meaning of an unknown word. In this case, the learners could ask their teacher and/or classmates without the study specifying the avenue (L1 translation, paraphrase, synonyms, etc.) via which the students would get this help. Our main interest was the social need for help not the form of the response. The last strategy was retrieved from Qian's questionnaire and it was "keep a note of the word," that is a very introspective and asynchronous strategy employed, very close to the behaviour

<sup>12</sup> Even though this has not been possible in the present study due to the limited number of the sample group.

“ignore the word.” We did not include such an attitude to the questionnaire as we wanted to elicit the positive behaviours and the strategies employed and not the attitude of ignorance, which could be the main issue of a future study due to the various parameters to be examined.

The second general question also consists of six strategies which facilitate the understanding of unknown words and examine, in detail, the lexical inferencing/guessing from context strategy, included in the former part of the questionnaire. The strategies were formulated according to the various levels of knowledge employed/cue levels/sources of information levels. Top-level cues are based on world knowledge and global text/paragraph knowledge, while bottom-level cues are based on local (sentence-word) knowledge.

Each of the two questions allow participants to state at least two ways of dealing with unknown words or two strategies for tackling unknown words respectively, while students are also prompted to offer a method of action of their own—in case there is one— under the section “other.” The statements/items in the closed-type questionnaire were rated on a frequency scale, with the scale points being the following levels of frequency: 1 corresponding to ‘often,’ 2 to ‘sometimes,’ 3 to ‘rarely,’ and 4 to ‘never.’

Cronbach’s alpha was used to measure internal reliability. Regarding content validity, construct validity, and criterion validity, the method of compiling the questionnaire, as well as the statistical models used comply with the international literature. The questions appearing on the questionnaire were formulated on the basis of the research hypotheses and in agreement with other researchers (Filiás, 1996; Litwin, 1995; Tsopanoglou, 2000). Finally, it is worth mentioning that to ensure the reliability and validity of the survey, and in keeping with the triangulation process, a similar study was conducted among the language teachers of the students (Magos, 2005). The ACOS language teachers were surveyed a month following the initial survey conducted among the students.

Erten and Williams (2008) attempted to draw conclusions as to which of the two statistical processes,

i.e. using percentages or correlation coefficients, is the most suitable to measure the effectiveness of vocabulary learning strategies. The findings of their study indicated that using percentages can render a more realistic picture of the effectiveness of any given strategy than using correlation coefficients. The advantage of the particular study lies in that using percentages allows researchers to study each vocabulary learning strategy individually instead of examining them as a whole, as is the case with correlation coefficients. The analysis of our data will be partially affected by this approach.

### *Data Analysis*

The data obtained through the first part of the questionnaire were analyzed in terms of descriptive statistics, but the small number of the participants involved and the numerous groups/categories formed did not allow for any further analysis. As mentioned before, there were nine different countries of origin represented. Libya, Albania, and Jordan were accorded the highest frequencies. They were all first and second year military university students in the following faculties: faculty of medicine and faculty of law, economics and political sciences.

It was only the gender variable which was amenable to further analysis in correlation with the adopted vocabulary strategies and this correlation was examined by use of Pearson’s chi-squared ( $\chi^2$ ) independence test and Cramer’s V relevance coefficient. The sampling unit of the 57 foreign ACOS students was grouped into 44 male and 13 female students. No relevance was established between the adopted vocabulary strategies and the gender of the participants, indicating that there was a small number of participants (57 persons) and more specifically a small number of female students (13 persons)<sup>13</sup> involved. The  $\chi^2$  test showed that no statistically significant correlation existed between the adopted strategies and the gender of the participants in the survey<sup>14</sup>, supporting Marttinen’s (2008) results regarding gender and strategy use. Marttinen’s (2008)

<sup>13</sup> given the nature of the faculty where the research was carried out

<sup>14</sup> But still these findings should be treated with caution as no conclusions worth mentioning could be reached without further grouping of the data.



research included 50 upper secondary school students who were taught English as a second language. Of these 50 participants, 31 were male and 19 female, all between the ages of 16 and 24. Marttinen did not record any significant differences in terms of the use of vocabulary learning strategies between women and men. Our results, along with Marttinen's (2008), do not agree with other studies like Üster (2008), Catalán (2003), and Gu (2002), whose findings state that women activate strategies to a larger degree during vocabulary learning compared to men.

The second and most important part of the questionnaire is further subdivided into two parts: the first concerns discovery strategies while the second concerns inferencing practices.

### *Learners' Self-reported Discovery Strategies*

Table 2 below shows how the participants in the survey answered the first question of the questionnaire regarding the adoption of specific vocabulary strategies for L2 reading. The internal reliability of this part of the questionnaire is evaluated as "satisfactory" with Cronbach's alpha index being  $\alpha = .713$ .

Understanding the meaning of a word through its context is the most frequent and most popular strategy employed by the participants. Almost half of the participants (45.6%) answered that they *often*

rely on the context to understand the meaning of a word, while 17.5% of them did so *sometimes*.

Participants also frequently employed the two social strategies included in the questionnaire. They stated that they usually ask their fellow students for help in case they do not comprehend a word. Specifically, 12.3% of them noted that they *often* turn to a fellow student in order to seek assistance with the understanding of an unknown word, whereas the number of those who *sometimes* act this way reaches 42.1%. Only 8.8% do not use this strategy at all and only 12.3% never ask the teacher. A percentage of 87.7% of the respondents reported that they would ask the teacher in different frequency categories.

One of the most favored practices employed was using a dictionary to look up the meaning of a word: as many as 10.5% stated that they *often* use a dictionary to look up a word, while 38.6% do so *sometimes*. The other strategy concerning reference materials, that is looking up a word in textbooks, did not rate very high in usage in general, but it did rank higher in usage than the dictionary.

Furthermore, 17.5% of the participants stated that they *often* write down a word in order to look it up later, a method followed *sometimes* by 21.1% who answered the same question. It is worth mentioning at this point that only one of the participants in the survey (1.8%) stated that s/he sometimes adopts

**Table 2.** Frequency of adopted vocabulary discovery strategies by L2 learners(n=57)]

<b>How often do you use the following strategies When dealing with an unknown word in reading a Greek text?</b>				
	<b>Often</b>	<b>Sometimes</b>	<b>Rarely</b>	<b>Never</b>
Understand the meaning through context	26 (45.6%)	10 (17.5%)	14 (24.6%)	7 (12.3%)
Use a dictionary	6 (10.5%)	22 (38.6%)	17 (29.8%)	12 (21.1%)
Look up the word in textbooks	5 (8.8%)	27 (47.4%)	16 (28.1%)	9 (15.7%)
Ask the teacher	11 (19.3%)	22 (38.6%)	17 (29.8%)	7 (12.3%)
Ask a fellow student	7 (12.3%)	24 (42.1%)	21 (36.8%)	5 (8.8%)
Write down the word in order to look it up later	10 (17.5%)	12 (21.1%)	19 (33.3%)	16 (28.1%)
Other: Include the word in discourse with native speakers judge by their reactions		1 (1.8%)		

a vocabulary strategy which deviates from those strategies recorded in the questionnaire of the present study.

It is obvious from Table 2 that when the 57 participants in the field survey encounter an unknown word in a text, they primarily attempt to elicit its meaning through the context. If that proves unsuccessful, they subsequently turn to their instructor, ask their fellow students, look up the word in textbooks, or finally use a dictionary. The less frequently adopted, therefore less popular, strategies include writing down a word in order to check its meaning later as well as using a dictionary. It is worth noting that textbook use ranked higher than dictionary use. This is a very important finding since the textbook use strategy was not included in Qian's and Schmitt's questionnaires.

The above finding could be explained by the fact that the research was conducted in authentic classroom conditions, just before the class began for the day. During the course, all of the students of ACOS bring their textbooks, but not all of them bring or use any kind of dictionary (printed or on-line). Also, the supplementary reading material is usually based on topics similar to those in the textbook.

So, it is the learning context that pushes them, when they encounter in a text an unknown word, initially to check the wordlist of their course book in order to find the meaning or a text of the same topic area already elaborated in class.

Our results do not seem to be similar to Qian's (2004), a finding which is consistent with the fact that his research was conducted with a group of students

of a different linguistic background and target L2. However, both Qian's (2004) and our studies share one basic common result: one strategy displays the highest frequency of them all and that is the "understand/**guess** its meaning from the context" strategy. Dictionary use, which was very popular in Qian's research, is infrequently employed in our research. Using social strategies (ask the teacher or ask a fellow student/friend) (table 3.) was a frequent behavior in our research while most infrequent in Qian's study.

Using Yes/No answers as opposed to the Likert scale, Schmitt (1997) conducted a study with 600 Japanese EFL students reaching partially similar results to ours. Most respondents (85%) reported that they use a bilingual dictionary, a strategy which was ranked among the bottom two in our research. Another 74% and 73% reported that they guessed meaning from context, and asked classmates, respectively, two of the most frequently used strategies in our study.

### *Learners' Self-reported Inferencing Strategies*

Table 4 below briefly presents the answers to the second question of the second part of the questionnaire regarding the lexical inferencing practices that facilitate guessing in L2 reading. The internal reliability of the question is evaluated as "good" with Cronbach's alpha index being  $\alpha = .839$ . Tapping into broader knowledge is the practice which facilitates understanding the meaning of a word the most. In fact, 36.8% of the participants stated that they *often* use their wider knowledge on the subject in question in order to understand the meaning of unknown words, while 31.6% do so *sometimes*.

**Table 3:** Descriptive analysis of the frequency use of the vocabulary discovery strategies

Item	Rank	Discovery strategy	Mean	SD
1.1	1	Understand the meaning through context	2.96	1.101
1.4	2	Ask the teacher	2.65	.935
1.5	3	Ask a fellow student	2.58	.823
1.3	4	Look up the word in textbooks	2.49	.869
1.2	5	Use a dictionary	2.39	.940
1.6	6	Write down the word in order to look it up later	2.28	1.065
1.7	7	Other	.00	

Almost half (42.1%) of the participants stated that they *often* understand the meaning of an unknown word with the help of other words in the same sentence, whereas 17.5% *sometimes* do. Attempting to *often* understand the meaning of an unknown word by understanding a part of the word accounts for 31.6% of participants while attempting to do so *sometimes* for 31.6%.

Furthermore, considering grammatical features to comprehend unknown words proved to be a significant practice, since 33.3% of the sample stated that they *often* take the grammatical features into consideration while 29.8% do so *sometimes*.

Finally, as far as understanding the meaning of words based on what is mentioned in the rest of the paragraph is concerned, 38.6% of the participants stated that they *often* understand words through the rest of the paragraph or text, and 17.5% employ this course of action *sometimes*. Looking for phonologically similar words in other languages is mentioned as a last choice, with 19.3% and 36.8% for *often* and *sometimes* respectively. None of the participants mentioned any other practices with a significant bearing on reading comprehension. Hence the two lexical inferencing practices mentioned last were characterized as the ones least frequently used.

**Table 4.** Frequency of lexical inferencing practices when dealing with unknown words (n=57)

How often do you use the following strategies/practices, when trying to guess the meaning of an unknown word in a Greek text?				
	Often	Sometimes	Rarely	Never
Consider grammatical features (at word level)	19 (33.3%)	17 (29.8%)	13 (22.8%)	8 (14%)
Understand the meaning through other words in the sentence	24 (42.1%)	10 (17.5%)	6 (10.5%)	17 (29.8%)
Use general knowledge on the subject	21 (36.8%)	18 (31.6%)	12 (21.1%)	6 (10.5%)
Examine whether some part of the word is familiar	18 (31.6%)	18 (31.6%)	13 (22.8%)	8 (14%)
Understand the word through the rest of the paragraph or text	22 (38.6%)	10 (17.5%)	18 (31.6%)	7 (12.3%)
Seek similar words in L1 or other foreign languages	11 (19.3%)	21 (36.8%)	18 (31.6%)	7 (12.3%)
Other	-	-	-	-

Note. N = 57.

**Table 5.** Descriptive analysis of the frequency use of the lexical inferencing strategies

Item	Rank	Inferencing strategy	Description	Mean	SD
1.3	1	Use my knowledge on the subject	General knowledge (world level)	2.95	1.007
1.5	2	Understand the word through the rest of the paragraph or text	General meaning (text/paragraph level)	2.82	1.088
1.1	3	Examine grammatical features (at word level)	Part of Speech (word level)	2.82	1.054
1.4	4	Examine whether part of the word is familiar	Morphological Features (word level)	2.81	1.043
1.2	5	Understand the meaning through other words in the sentence	Syntagmatic features (Sentence level)	2.72	1.292
1.6	6	Look for similar words in other foreign languages	Phonological Features (word level)	2.63	.938

Being among the lexical inferencing practices considered important for L2 reading, reading comprehension is mostly facilitated by general knowledge on a subject (Table 5). If that proves unsuccessful, students resort to finding the general gist of the paragraph or text in question or focusing on the grammatical features at word level. Finally, morphological features and possible similarities with similar words in L1 or other foreign languages are two more practices which facilitate the understanding of the meaning of an unknown word.

It seems that the subjects of our research follow a top-down approach, although the mean differences are too close for us to draw any safe conclusions. Both Qian's study and ours report a similarity in terms of the two global inferencing strategies (world knowledge and global meaning), which are the most frequently used. Morphological cues are in fourth place in both studies while the syntagmatic cues are considered more important by Qian's subjects compared to the grammatical cues at word level, which were considered more important in our study. In Nassaji's (2003) study, 46.2% of the subjects used world knowledge which also featured as the dominant strategy in our study. Only 6.7% of participants used L1 knowledge (in Nassaji, 2003) echoing our last strategy "Look for similar words in L1 and other foreign languages"<sup>15</sup>, which ranked last in frequency.

### *Findings of the research among the language teachers*

A small-scale study with closed-ended questions (based on the questionnaire used among the students) has been conducted among their language teachers to ensure the reliability of the research—to the extent that this is possible—and support the self-reported strategy behavior by the language learners. In what follows are the findings of the research among the language teachers resulting from the close-ended questions asked during a structured interview. It is worth mentioning at this point that

<sup>15</sup> Schmitt (1997) makes a special reference to Cognates, that is "words in different languages which have descended from a common parent word, such as *Mutter* in German and *mother* in English. Languages also borrow words from other languages, and these loanwords often retain similarities in form and meaning".

all three participating instructors had an average of two years' teaching experience at the ACOS of Thessaloniki, with two of them holding a postgraduate degree relevant to L2 teaching. They taught "Greek language as L2" to the first and second year foreign students of the ACOS of Thessaloniki and all three of them characterized the performance of the students in the class in question as "good."

The language teachers report that the students *often* understand the word meaning through context or turn to their teacher for help. According to their teachers, students sometimes address their fellow students for help and rarely do they look up a word in a dictionary or textbook and/or write it down to look it up later.

In guessing the meaning of a word by looking at the context, students often use morphological cues at both word or sentence level. They also often attempt to find similarities with words in L1 or other foreign languages, which may help them to guess the meaning. Sometimes they use grammatical cues at word level or use their world knowledge and general meaning at text or paragraph level to guess the word meaning.

The initial results were partially supported by the research conducted among the teachers. More specifically, responding to the research question regarding the vocabulary strategies adopted by the students in their quest to understand unknown vocabulary, the teachers echo the strategy use ranking as this is reported by the students themselves. As far as inferencing practices are concerned, teachers report that their students exhibit a bottom-up behavior, resorting to local (sentence-word) cues, while the students themselves report that they exhibit a top-down approach, resorting to world and global knowledge (text-paragraph). At this point, we need to specify that the mean ranking of the students' self-reported inferencing strategies adopted at text-paragraph and word (morphological) level seem to be very close and it could partially explain the above difference.

In general, students' and teachers' perceptions regarding strategy use and importance are not always perfectly matched, as indicated in Griffiths (2007) and Manning, Henneberry, and Kobayashi.

(2012). In any case, the aim of this small-scale study (among teachers) was not to examine this mismatch in detail but to support the students' self-reported responses in the questionnaire.

## Conclusions

In more detail, the most important finding of this study among the students was that most of them stated that they try to understand the meaning of unknown words in a text by resorting to the context. This finding accentuates the interaction between text and reader and is in agreement with the findings of previous studies such as Gu and Johnson (1996), confirming the primacy of context when attempting to understand the meaning of a word. Moreover, in Schmitt's (1997) research, this same strategy is considered one of the most frequently used discovery strategies.

The second most important finding was that the L2 learner's general knowledge of the subject along with knowledge of other words in the sentence greatly facilitates his/her understanding of an unknown word. This finding probably confirms the strength of the syntagmatic axis of the words in a sentence, but, more importantly, highlights the importance of teaching vocabulary by adopting a holistic approach in the classroom since general knowledge contributes to understanding the vocabulary needed for its detailed presentation.

By juxtaposing the findings of the surveys carried out among language learners and language teachers in the same school, we can conclude that both studies confirm the importance of context and the morphological analysis of a word or part of it. Additionally, both language teachers and learners are in agreement regarding the strategy of asking the instructor or fellow students for help in understanding vocabulary. Finally, both teachers and learners downplayed the importance of writing down a word so as to look it up later by indicating that it is not a widely used or highly recommended strategy. In general, the initial results were partially supported by the research conducted among the teachers. The vocabulary discovery strategies frequencies seem to coincide. Nevertheless, students report a top-

down approach in terms of their lexical inferencing strategies behavior while teachers perceive a bottom-up approach adopted by students regarding this same behavior.

Using strategies means drawing on pre-existing experience and activating critical thinking as regards language learning in general. In fact, students generally employ strategies and more specifically reading comprehension strategies as often as they please, regardless of having been taught these strategies (Pavičić Takač, 2008; Psaltou-Joycey, 2010). However, the adoption of strategies during L2 learning constitutes a feature of differentiation among students (Stern, 1986), which develops dynamically and is subject to constant change. Therefore, it is necessary to teach the use of vocabulary strategies (and more specifically discovery strategies) and practice them until they can be almost automatically employed by learners. Faerch and Casper (1983) "stand in favor of strategy instruction especially in terms of learners becoming aware of the strategies already used and the ones they could possibly use" (p. 56).

Most studies are subject to certain limitations and our present study could not be an exception. First, this research was targeted at a particular group of learners of Greek as L2, and for this reason the sample used was relatively small. Moreover, since the research was conducted at a military school, it came as no surprise that the number of female participants was small, thus compromising the equal representation of both sexes.

This research featured a small-scale study among the language teachers in order to support the students' self-reported responses in the questionnaire. Qian (2004) chose to validate the learners' self-reported strategies, as these were indicated in the questionnaire by conducting an experiment focusing on lexical inferencing with a follow-up of individual interviews. It would be extremely interesting to design/replicate a study of this kind in order to examine any possible variations between the actual strategies employed and the self-reported strategies in a Greek L2 reading context. Further research on this subject is under way.

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