The fuzzy areas of *accuracy* and *confidence* while guessing the idiosyncratic vocabulary of Nikos Kazantzakis' *'ΟΔΥΣΕΙΑ'* [1]

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1 Introduction

One of the most interesting issues in education diachronically is the familiarization of pupils with literature, both national and international. We believe that if our pupils get bored or tired when dealing with literature, one of the main sources of their boredom might be their linguistic incompetence. Consequently, it would be interesting to investigate whether and to what extent they can understand the actual language of an author and his poetic grammar. As Peirce (1931) claims, nothing is a sign unless it is interpreted as a sign and if this is true for everyday language, this is more so for literature and poetic grammars created by the authors. Nikos Kazantzakis is a modern Greek author of international range, yet his idiosyncratic use of language and his talent to create his own words based on the dialect of Crete could be a real burden not only for young pupils but for mature readers too.

2 Research background.

There are quite a few researches about the role of language[2], and lexis more specifically, in poetry. One of the most prominent is the research referring to Ektoras Kaknavatos' poetry (Argyropoulou 2003) which tries to characterise the poetry of Kaknavatos by studying each word linguistically.

As for Kazantzakis, there are not many specific researches concerning his poetic language, at least not to our knowledge. There is, of course, Pantelis Prevelakis' work, *The Poet and The Poem of Odyssey* (1958), which is general and still too academic while other linguistic works about and on Kazantzakis language specifically include the following: *Kazantzakis' Language* of Nikolaos Andriotis (1959), *KAZANTZAKIS and the Linguistic Revolution in Greek Literature* of Peter Bien (1972), *Kazantzakis and Language* of Vassileios Mandilaras (1987), *The Language of Odyssey of N.Kazantzakis* of Eleftheria Giakoumakis (1982) and *Zur Sprache der Odyssee von Kazantzakis* of Alexander Sideras (1983).

2.1 Strategic competence of the reader and accuracy of guesses

Strategies in reading (or processing strategies) are one of the most interesting issues which have received a lot of attention over the past three or four

[1] We want to respect the orthography of the author who wrote the title of his epic poem *ΟΔΥΣΕΙΑ* (Καζαντζάκης 1938) with only one «Σ» in the first edition. That is why we follow the same orthography of the poem in the whole paper.

[2] Μπαμπινιώτης (1991) and Χαραλαμπάκης (2001).

decades. What strategies do pupils employ when faced with unknown vocabulary? Do they guess from surrounding context, do they analyze the words, do they ask an authority? In other words, what are the factors that affect their guessing? Does educational system encourage in one or another way of text approach? Furthermore, the assessment of *accuracy* of guesses is a quite challenging job because there might be more than one correct answer. If this is so in everyday communication, it is even more so in literature, in which reader's subjectivity is a dominating factor. We usually consider as accurate the answer which has given the same meaning as the received message and, in case of reading, we consider the reader that has achieved the above as a successful reader. However, in literature, we could not characterize something as correct or wrong so easily. Nevertheless, reading comprehension is a multi-level task. Thus, there is not an absolutely accurate response, as we cannot usually ask the author about intended meaning. Even more so, we usually identify as correct the meaning that is socially acceptable. Besides, one should keep in mind that *accuracy* might be affected among others by the reader's linguistic, strategic and pragmatic competence; factors which make their guesses even more subjective and difficult to be judged.

2.2 Confidence in one's guesses

Nonetheless, *accuracy* of guesses is not the only factor that needs evaluation when investigating successful reading. Another parameter, which is not normally measured, concerns readers' *confidence* that they have guessed right. *Confidence* is very important because if readers do not trust their own guesses, they will easily give up their attempt and stop reading.

Consequently, successful reading does not simply involve use of processing strategies (in reading) but it might need to be reinforced by readers' *confidence* in the results of their strategy use. *Confidence* in one's strategic competence should play an important role, first in the guessing process, which is instant communication with the author (or the speaker) and then, in the long run, in actual learning from his/her own guesses and experience. *Confidence* in one's own guesses has been investigated by Kambakis-Vougiouklis P. (1990, 1992, 1993, 1995) and by Intze, P. (2009) and the results reveal higher levels of *accuracy* for female subjects than males, yet lower *confidence* for females than males; to be stressed that, all the above studies deal with learners of Greek as a Second/Foreign language. Evaluation of guesses is a rather subjective process as it is affected by a number of predictable and unpredictable factors. Seldom could there be only one correct answer for a specific question. If this is so in everyday life, it is even more so in literature. Reading and understanding literature is actually a fuzzy process as nothing could be taken for granted.

2.3 Fuzziness

In our attempt to overcome the subjectivity of readers' answers, we resorted to the *Theory of Fuzzy Sets* (Zadeh 1965). This theory has been used by linguists, it actually started from linguistics; however, it has a massive application in computers and electronics. We feel that we could make a good use of it in

order to interpret subjectivity in a mathematical way. This theory gives us the chance to divide the related answers on a continuum [0,1] instead of having just a polar '*correct –wrong',* we could have a number of answers in between the two poles. It is as if we created a grey zone between black and white. In other words, while evaluating the answers, the teacher could place the answers on the continuum, closer to the one or the other pole, accordingly. This graphically is as follows:

0_____1

absolutely wrong completely correct

Confidence is also characterized by fuzziness as readers may guess the correct word, but they are not absolutely sure because certainty normally reflects our own opinion. In fact, *confidence* is a subjective *accuracy*, because it is an emotional transcription of lexical guessing. *Confidence*, among others, might be influenced by gender and maturity of readers, as well as their contact with the language.

2.4 Scale or Bar?

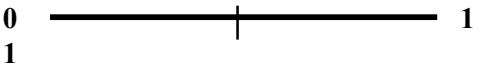
The escalation of a variable, such as *accuracy* or *confidence*, depends both on its nature and on the researcher's judgement. Decisions of this kind are difficult to be made in cases such as the compilation of questionnaires to be used in linguistic and other research. There are definitely certain scales which are preferred to others, such as the 5-grade Likert scale:

I completely agree, I rather agree,
I am somewhere between, I rather disagree, I completely disagree.

This type of scale is characterised by certain elements-rules normally identified in every step of the scale. That is to say, they pinpoint a very positive beginning and a very negative end. However, the most difficult part is partition and where exactly the limits of the actual partition lie. The problem of discrimination of those categories is quite serious for the researcher but it is even more so for the subjects of the research, who might need tedious explanations and, finally, miss the point of the research.

In order to minimize such risks Vougiouklis and Kambakis-Vougiouklis (2008), based on the fuzzy theory, introduced a new statistical tool, *'the bar',* as an alternative to the usually used Likert scales.

Proposition: *in every question of a questionnaire the scale could be replaced by the 'bar', whose two poles are defined by 0, on the left, and 1 on the right.*



The participants, instead of the usual checking of one grade explicitly specified on the scale, will have to 'cut' by a vertical line the continuum space at any point they think expresses best their answer to the specific question.

There are certain advantages in using the Bar instead of the Scale, such as avoiding time consuming explanations as for the difference between the grades and having the subjects start the filling in process straight away. Moreover, it makes the researcher's job easier at the level of processing the results as the researcher can decide how many discriminations she/he wishes and, even more, she/he can try different discriminations. Such a process gives the researcher a scientific advantage as she/he can easily investigate parameters she/he possibly had not thought of before.

3 Purpose and rationale

Given the lack of previous research in Kazantzakis' work associated with readers' *accuracy* and *confidence*, we thought it would be interesting to investigate if and to what extent Greek pupils of High School are able to understand Kazantzakis and his language. We are aware of the risks such an investigation involves, so we considered very carefully the research tools and organization of the venture. If such a research is risky for any author, it is even more for Kazantzakis and especially his *ΟΔΥΣΕΙΑ*, whose main characteristic is words that cannot be easily found in any dictionary of the diachronic Greek language. Of course, they are made up from existing morphemes, mainly from the dialect of Crete but they are not normally used, even by the speakers of the dialect. Consequently, it is very important for the reader(s) to make use of the appropriate strategies in order to overcome the difficulty.

Furthermore, we thought that such an investigation using *the bar* for both readers' self evaluation and our own evaluation would be a real challenge. So we conducted a series of experiments: pilot studies. Our ***first pilot study (pilot study I)*** research was with the First Year's students of Department of Greek Literature of Democritus University in Thrace and we found that on *accuracy*, the students gave more precise answers by guessing than by the multiple choices, which was not expected; thus this reinforces the theory that guessing in reading is an important strategy. Concerning their *confidence*, the students were more confident on the multiple choice answers than on guessing process, fairly enough. The differences of the results between subjects were not statistically significant but female subjects were less confident than male.

The second pilot study (pilot study II) is going to be presented in this piece of research:

4 The research

4.1 Hypotheses

We expect the pupils to be more accurate and more confident on multiple choice questions than on inferencing/guessing process, where they should have to do everything by themselves. We also expected female subjects to be more accurate than the male ones on lexical guessing; however, we expected male subjects to be more confident than female, according to Intze (2009) and Mathioudakis and Kambaki (2009) results (ibid). Besides, we want to

investigate if parents' education and reading literature would affect the *accuracy* and the *confidence* of our subjects.

4.2 Method

4.2.1 Subjects

Our second pilot research was applied on the 2nd class of two High Schools in different areas of Crete. The first school is in Heraklion City, i.e. a typical urban middle-class school, and the second one is in Agia Varvara, a village near Heraklion, where children work in the farms. We would like to compare the results of our investigation with a limited number of high-school pupils, as our research concerns this age group. We hope that by participating in experiments of this type, young pupils gain knowledge different from that they gain via conventional tuition.

4.2.2 Materials and tasks

We randomly chose the Fifth Rhapsody of *ΟΔΥΣΕΙΑ* by Nikos Kazantzakis which takes place on the island of Crete as we thought that this rhapsody might have an individual idiosyncratic tone because it describes the Cretan civilization.

While reading the rhapsody, we selected some words which were interesting in terms of their composition and their meaning. After an especially careful research, we finally came up with twenty (20) words to be used in the questionnaire, from different parts of the text. In an attempt to find distracters of the meanings on multiple choice questions, we gave to the 3rd Year students of our Department the words without any text in order to make them guess what these might mean.

4.2.3 Design

In the course of designing the research, we divided our variables into independent and dependent ones. The dependent variables (DV) were (a) *accuracy* of guesses and (b) *confidence* on the part of the subjects that the guess they had made was correct to some extent. The independent variables (IV) were:

(a) The experimental variables: **questions regarding vocabulary**. The first ten (10) questions were multiple choice questions and students had to circle the correct answer between three given meanings. The following ten (10) questions were free guessing. Namely, the pupils had to imagine the meaning of certain words by searching all the clues, the context, the analysis of the word, the correlation with other words etc., in other words looking for internal and external cues, before reaching a decision.

(b) The *subjects' variables*: (i) gender, (ii) languages or dialects which they speak or understand, (iii) parents' education, (iv) information about how often read literature.

4.2.4 Procedure

The students formed two (2) schools-groups. On the whole, we chose to investigate twenty (20) words; the time allowed to the students to complete the

questionnaire, was only thirty minutes (30΄), as it was considered to be enough according to pilot study I. Within specified time, subjects were expected to answer every question and also specify their *confidence* on the bars provided.

After the subjects had made their decision about the meanings of the specific items in question, they had to specify how sure they were that they had guessed right on a continuum [0,1], where 0=completely unsure and 1=absolutely sure. They were actually instructed to *'cut'* the continuum at any point they felt it represented their judgement at that moment, as shown in the graphics below:

0_____1
completely unsure absolutely sure

0__/_/_/_/_/_____/_____/_/_/_/_____/___/_/___1
completely unsure absolutely sure

4.2.5 Scoring of accuracy and confidence

a) The second phase of the study was the scoring of *accuracy* and we decided to apply the following plan:

(i) For multiple choice answers we had a 2-grade scale: Zero (0) **and** Four (4).

(ii) For guessing answers we had a 5-grade scale: Zero (0) **to** Four (4).

b) As for *confidence*, after receiving the students' responses, we decided to divide the continuum/bar for *confidence* into five (5) parts with a fuzzy-score scale between Zero (0=I am extremely unsure) to Four (4=I am absolutely sure). This does not mean that we cannot make a different division in future in case we need more detailed differences, when we will decide to have six, seven, eight or more parts; similarly we could have only three divisions, in case we will need a more general picture.

At this point we should make it clear that subjectivity from both the part of the subjects and the researchers is difficult to avoid. We also consider both *accuracy* and *confidence* as *fuzzy areas* (Zadeh, 1965) as the criteria used to define them cannot be strictly defined. That is the reason why in many instances we consider more than one answers as correct.

5 Results

5.1 Results Interpretation Using the Bar

Firstly, we scored the answers and we draw them on the bar. We saw that there are not significant differences between the answers of boys and girls of the two schools. That's why we made a bar for accuracy and confidence results separately for boys and girls, in order to compare the answers of boys

and girls in both types of questions (multiple choice and guessing questions). The results graphically are as follows:

(a) Accuracy results

(i) Boys: Two boys were almost wrong, twenty-three boys were between correct and incorrect and six boys were almost correct.

_____//_____// **(23)** //_____// **(6)** //_____

absolutely wrong absolutely correct

(ii) Girls: Three girls were almost wrong, thirty-five girls were between correct and incorrect and twenty-seven girls were almost correct.

_____///_____// **(35)** //_____// **(27)** //_____

absolutely wrong absolutely correct

(b) Confidence results

(i) Boys: Two boys were rather unsure, twenty-two boys were between sure and unsure and seven boys were reasonably sure.

(ii)

_____//_____// **(22)** //_____// **(7)** //_____

absolutely unsure absolutely sure

(iii) Girls: Eight girls were rather unsure, forty-two girls were between sure and unsure and fifteen girls were reasonably sure.

(iv)

_____//**(8)**//_____// **(42)** //_____// **(15)** //_____

absolutely unsure absolutely sure

5.2 Results Interpretation Using the SPSS Computing Package

After comparing the results on the bar, we applied descriptive statistics and analyses of variance for both Dependent Variables: (a) *accuracy* and (b) *confidence* and we found that there are no differences between the answers of boys and girls of the two schools[3]. More specifically, we had:

(a) Accuracy results

[3] The complete table of results is in appendix at the end of the paper.

(i) Boys: **74,2%** of the boys have been marked with 2 points, meaning that the boys were "between correct and incorrect". **19,4%** of the boys have been marked with 3 points, meaning that they were "almost correct".

(ii) Girls: **53,8%** of the girls have been marked with 2 points, meaning that the girls were "between correct and incorrect". **41,5%** of the girls have been marked with 3 points, meaning that they were "almost correct".

(b) Confidence results

(i) Boys: **71%** of the boys have been marked with 2 points, meaning that the boys were "between sure and unsure". **22,6%** of the boys have been marked with 3 points, meaning that they were "reasonably sure".

(ii) Girls: **12,3%** of the girls have been marked with 1 point, meaning that girls were "rather unsure". **64,6%** of the girls have been marked with 2 points, meaning that they were "between sure and unsure". **23,1%** of the girls have been marked with 3 points, meaning that they were "reasonably sure".

6 Discussion – further investigation

Having conducted a sociolinguistic comparison between two schools which are not in the same area, we found out that there were not significant differences between the subjects' results. This could be justified by the nature of the words in *ΟΔΥΣΕΙΑ*.

After a comparison between male and female subjects, it was observed that the female subjects were not much more accurate than the male ones. However, the male subjects seem to be more confident than the females (as pilot study I). In this point, we have to underline that the differences of the results were not statistically significant, but there is an inclination on *accuracy* to be statistically significant between the two genders of the subjects. However, this needs further investigation. There are so many things involved in comprehending literature, and not all of them can be –fortunately (!)– measured.

As it seems, Reading Literature and Education of parents, which are two important variables, didn't influence the *accuracy* and the *confidence* of the subjects.

In another experiment we will try to apply the *Vougiouklis and Kampakis-Vougiouklis bar* for *accuracy* as well, in order to find out any parameters which may be hidden and might affect the general results.

7 Epilogue

What remains to be proved in our further investigation is whether pupils may understand a text if we teach them literature texts with idiosyncratic

vocabulary, as Kazantzakis' *ΟΔΥΣΕΙΑ*, in order to develop their cognitive ability. And we, teachers, should do what Kazantzakis describes in the Seventh Rhapsody of *ΟΔΥΣΕΙΑ* (Καζαντζάκης 1967), when the Cretan advises a craftsman how to blow his spirit in the lifeless wood:

« Σε όλες τις πέτρες του βουνού, σε όλα τα κούτσουρα του δάσου
κουβαριασμένες πνίγονται οι ψυχές και τον τεχνίτη κράζουν.
Δεν είναι ο κράχτης δράκος για θεός, δεν είναι αχός του αγέρα·
σκυμμένη στη σκλαβιά βογκάει, μοχτάει για λευτεριά η ψυχή σου!
Εγώ μια νύχτα που ολομόναχος κοιμόμουν στο αργαστήρι,
ξάφνου μιαν πέτρα μες στα σύννυχτα γρικώ να ξεφωνίζει·
η σκλάβα μου η ψυχή μού φώναζε στην πέτρα πλανταμένη –
κι ευτύς ορθός πηδώ απ' τον ύπνο μου κι αρπώ τα σύνεργά μου.
Στο ανάριο φως του λυχναριού αρχινώ να πελεκώ την πέτρα,
να ρίχνω τα τοιχιά της φυλακής να λυτρωθεί η ψυχή μου·
και πια τη χαραυγή ξεπρόβαλε, χαρούμενο, δροσάτο,
το θείο κεφάλι της κι ανάπνεψε τον καθαρόν αγέρα.
Κι αργά τον ώμο της λευτέρωνα, το στήθος, τα νεφρά της,
κι όσο απ' την πέτρα ανέβαινε στο φως, λυτρώνουνταν και μενα
η σκλάβα η κεφαλή κι ο νώμος μου, το στήθος, τα νεφρά μου·
κι όντας ακέρια πια απ' τις φούχτες μου ξεκόρμισε η ψυχή μου,
τα μάτια σήκωσα στον ουρανό κι ένα πουλί πετούσε!»

We, teachers, as craftsmen, let the pupils' spirit free to imagine…

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Appendix

Accuracy results

Multiple Choice			
	Male	Female	TOTAL
0	0%	0%	0%
1	3,2%	6,2%	5,2%
2	58,1%	61,5%	60,4%

Guessing			
	Male	Female	TOTAL
0	3,2%	0%	1,0%
1	9,7%	9,2%	9,4%
2	71,0%	58,5%	62,5%
3	16,1%	32,3%	27,1%
4	0%	0%	0%

Confidence results

Multiple Choice			
	Male	Female	TOTAL
0	0%	0%	0%
1	0%	0%	0%
2	22,6%	41,5%	35,4%
3	64,5%	44,6%	51,0%
4	12,9%	13,8%	13,5%

Guessing			
	Male	Female	TOTAL
0	6,5%	6,2%	6,2%
1	32,3%	43,1%	39,6%
2	45,2%	33,8%	37,5%
3	16,1%	13,8%	14,6%
4	0%	3,1%	2,1%

Results of accuracy and confidence

(multiple choice and guessing questions)

Accuracy			
	Male	Female	TOTAL
0	0%	0%	0%
1	6,5%	4,6%	5,2%
2	74,2%	53,8%	60,4%
3	19,4%	41,5%	34,4%
4	0%	0%	0%

Confidence			
	Male	Female	TOTAL
0	0%	0%	0%
1	6,5%	12,3%	10,4%
2	71,0%	64,6%	66,7%
3	22,6%	23,1%	22,9%
4	0%	0%%	0%