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**Writing in the Cypriot Dialect: More
History or More Phonology?
Investigating Primary School
Students' Choices of Words,
Morphemes and Graphemes when
Writing Using the Cypriot Dialect**

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Abstract

In the 21st century there is a relatively extensive literature investigating the use of Cypriot Dialect (CD) in school settings and the attitudes towards CD; however, little research has been performed to investigate writing in CD).

In the present study an experimental attempt was made to explore primary school children's CD spelling, in a school setting where the language of instruction and writing in the classroom is Standard Modern Greek (SMG), although pupils use CD in their everyday interaction. Our main research questions are whether pupils, when writing in CD: (a) use a more historical or more phonetic orthography, and (b) select specific spellings in order to represent phonemes not existing in SMG.

The participants of the study are 52 pupils attending the 4th and 5th grade of two Cypriot public primary schools. For the purpose of the present study a single word dictation task was employed, designed to find differences in spelling performance between CD and SMG words. Both academic and educational implications are drawn from the results.

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1. Introduction

1.1 The Modern Greek orthography

The Modern Greek alphabet consists of 24 letters. SMG has 17 consonant letters and 6 consonant digraphs: *τσ* /ts/, *τζ* /dz/, *ντ* /d/, *μπ* /b/, *γκ* or *γγ* /g/. There are also 7 vowel letters representing 4 vowel sounds, all phonemic: *α* /a/, *ε* /e/, *η* /i/, *ι* /i/, *υ* /i/, *ο* /o/, *ω* /o/. There are also vowel digraphs each corresponding to one phoneme (*αι* /e/, *ει* /i/, *οι* /i/, *υι* /i/, *ου* /u/). There are also three digraphs *αυ*, *ευ* and *ηυ*, which are pronounced /av/, /ev/ and /iv/ except when followed by unvoiced consonants, in which case they are pronounced /af/, /ef/ and /if/. The grapheme-to-phoneme (letter-to-sound) correspondences in SMG are almost entirely regular. On the other hand, Modern Greek alphabet is characterized by an overrepresentation¹ in case of /i/, /e/ and /o/ phonemes, for example <ύπνος> /ipnos/ “sleep”, <υιοθεσία> /iothesia/ “adoption”, <αγελάδα> /ajelada/ “cow”, <αγορά> /agora/ “market”, <αγωγός> /agogos/ “channel, conductor, pipe”. Generally, vowel graphemes with possible alternative correspondences are present in the vast majority of words. In most cases, the correct grapheme for a vowel with alternative spellings is determined by the word’s morphology, for example, <καλείς> [kalis] (call.PRES.ACT.2SG), <καλής> [kalis] (good.F.SG.GEN.ADJ.). In addition, there is also a number of words for which there are no principles that govern the correct choice of a vowel letter, for example, there is no rule defining why /i/ should be represented with <ει> in <δάνειο> /danio/ “loan” and with <υ> in <ύπνος> /ipnos/ “sleep”.

In conclusion, becoming a competent speller of SMG requires knowledge of grapheme-to phoneme relationships, the assimilation of morphological spelling rules and the rote learning of certain words.

In Cyprus the SMG orthographic system is also usually applied when writing in CD, a member of the southeastern group of Modern Greek dialects, and the mother tongue of the vast majority of the Greek population of the island.

1.2 Development and stage theories of spelling

Research into spelling acquisition suggests that children use a variety of strategies when spelling words and do not simply rely on memorization of the letters that a word contains (Seneschal, 2000). Children may also use sub-lexical processing, that is knowledge of sound-to-letter correspondences, and knowledge of the orthography of their language, when they spell words. Additionally, it has been suggested that spelling development occurs in stages with different spelling strategies being preferred at different times during development (e.g. Gentry 1982; Goswami & Bryant, 1990; Ellis, 1994; Dom, French & Jones, 1998).

All stage theories share common features, such as indication of qualitatively different skills or knowledge at the different stages, as well as describing spelling development in terms of transition from relying on phonological properties of words to recognizing and representing orthographic and morphemic regularities and rules. A number of studies suggest a developmental change from using a predominantly phonetic strategy to adopting both phonetic and morphological strategies (e.g. Nunes-Carraher, 1985; Nunes et al., 1997).

¹Cf. Cahill & Karan (2008)

It appears that development in spelling skill is not automatic with increasing age or following increasing exposure to instruction, but development in spelling skill reflects particular types of knowledge about language. This is in accordance with findings from studies investigating spelling development in English, where it was found that increasing spelling skill, overall, is mainly due to increase in particular types of linguistic knowledge (e.g., Kemp & Bryant, 2003).

1.3 Spelling Development in Modern Greek

One of the first to investigate spelling development in Greek was Porpodas (1989) who suggested that Greek beginner spellers use phonological strategies when spelling SMG. In a later study by the same author, reading and spelling performance of 1st grade Greek children was explored. The study included children who were normal achievers and children who faced literacy difficulties. Similar results as with the former study were obtained (Porpodas, 1999). The author suggested that spelling of Modern Greek words was performed using phoneme-to-grapheme correspondence rules. This suggestion is also in accordance with spelling results regarding the English language and at least the first stages of spelling acquisition (Waters, Bruck & Seidenberg, 1985).

Aidinis (2006) investigated the spelling development of first and second grade Greek children and concluded that children use a phonological strategy in the first stages of reading and spelling development. However, this strategy is not yet fully acquired by the children of first grade, causing problems in reading and much more in spelling. Besides, a visual strategy is clearly used in spelling, because words specific information is necessary for the correct spelling in Modern Greek. Finally, a morphological strategy is also evident in spelling and its employment reduces the errors in suffixes. However, the reduced errors could also be related to a visual strategy, since endings have higher frequency than the lexical morphemes, hence, it is easier for them to be learnt by heart.

Loizidou-Ieridou, Masterson & Hanley (2010) investigated the spelling development of GC primary school children and found marked changes between 1st and 5th graders in their ability to spell words. They suggest that the first step in spelling is to adopt a phonetic spelling strategy, the next step is to notice that there are one-to-many correspondences between phonemes and graphemes and that only the phonetic strategy is not sufficient to spell correctly, and the following step is to notice that there are grammatical rules that can aid in the selection of the appropriate grapheme for words that are governed by morphological rules. Hence, children's use of the phonetic strategy enables them through experience to acquire a more sophisticated morphological strategy for spelling; of course this development is also assisted by the development of explicit grammatical awareness. There is also the realization that not all words follow grammatical and morphological rules, hence, there is an amount of words whose spelling needs to be memorized and later retrieved from the orthographic lexicon in order for the correct spelling to be produced.

It seems that generally, children learning to spell Modern Greek make errors for the same reasons as those found in children learning to spell both regularly spelled and inconsistently spelled alphabetic orthographies. Types of knowledge needed for good spelling seems to be equivalent in the Modern Greek and in other orthographies.

1.4 Sociolinguistic Aspects of Dialect Use in Cyprus

CD is for centuries the low variety in a bidialectal situation, where the official Modern Greek variety of the Republic of Cyprus is SMG. Nowadays GCs are familiar with SMG through their schooling, the media and the increasing contact with Greece¹ but this does not mean that GC bidialectism does not affect the teaching and learning process (Papapavlou & Pavlou, 2007) especially in an educational system like the GC one, where until very recently (2009) the declared preference of SMG erroneously assumed that GCs' mother tongue is SMG, the national curriculum was almost a replica of the one used in Greece and (according to a circular of 2002) CD should be used orally in GC schools almost only to the extent that it facilitated and enhanced effective communication. Since 2010 a different status is predicted for CD in educational settings, since in the new suggested curriculum for the Modern Greek language it was clearly stated that

“the existing knowledge of the dialect should become a mean for the acquisition of knowledge of Standard Modern Greek” (p. 9).

Consequently, according to the curriculum applied to all the GC state schools since the school year 2011-2012, pupils should, amongst others, become familiar with the structure of both SMG and CD, as well as with the differences between them, and to treat CD as a normal linguistic system with its own phonology, morphology, syntax and vocabulary. Some of the suggested activities are related with text production and in cases like these, some spelling rules are considered to be necessary. The problem with CD is that there is no standardized spelling available especially concerning CD phonemes that do not belong to the SMG repertoire, for example, various spelling conventions are used for the representation of the postalveolars, (armosti et al., forth.).

Besides, we should point out that CD is usually not considered as prestigious as SMG, or proper only for oral discourse and unsuitable as a tool for literacy development. It is characteristic that the vast majority of the GCs have never needed to write in CD in a setting less oral than computer-mediated communication and the governments of the island have never had a regulatory policy concerning CD orthography². So, the pupils who participated in our research, had never written in CD before. Generally, in the absence of an orthographic tradition, with no school-based teaching of writing in CD, it is inevitable that “writers” of CD will differ in their orthographic practices. Our research aims, amongst others, to study the orthographic practices of Primary Education pupils. These practices relate to: 1) the CD-specific correspondences between characters or character sequences of the writing system and words or sounds, especially those sounds which appear in CD but not in SMG (geminate and postalveolar consonants), 2) the representation of particular sounds in specific positions in a word (Sebba, 2007), for example, do our pupils denote the presence of postalveolars in word final position?, and 3) the psychological awareness that native speakers of a language system have about the sounds or phonemes of this system (Cahill & Karan, 2008), for example do our pupils perceive geminate and

¹where SMG is both the official language and the mother tongue of the vast majority of the people

²The only exception was the case of the standardisation and transliteration of Cypriot place names, where the public debate that followed, illustrated the ideological nature of orthographic choices and practices (Georgiou, 2011).

postalveolar consonants as sounds that need to be differently represented in relation to their not geminate or not postalveolar equivalents? And if they do, how?

2. Methodology

2.1 Participants

The participants of the study were 52 children attending the 4th and the 5th grade of primary school. All participants were recruited from two GC state, urban primary schools in Limassol during the first trimester of the academic year. The male:female proportion was roughly 1:1.

2.2 Materials and procedure

Participants were given a single word dictation task during normal school hours and in a classroom setting. The task was administered by a native CD speaker and it included 60 words, half were dictated in SMG and half were dictated in the CD in random order. The 60 words were noun, adjectives, verbs and adverbs. In the CD ones CD phonemes were appearing, that do not exist in SMG, meaning that geminate and postalveolar consonants, for example <ντζίζεις> /ndzizis/ “you touch” (SMG /angizis/), <τσέπη> /tʃepi/ “pocket” (SMG /tsepi/), /pak:et:a/ “parcels” (SMG /paketa/), /kap:el:o/ “hat” (SMG /kapelo/).

3. Results

3.1 Morphological Error

Paired-samples t-tests were performed on the data set. The first t-test was performed to investigate the difference in accuracy between spelling CD words and spelling SMG words, for all pupils; the following two t-tests were performed to investigate the fore mentioned difference for 4th and 5th graders independently.

It was found that for all students the correlation between accuracy in spelling CD words (81.7%) and SMG words (86.6%) was significant ($r=0.67$, $p=0.001$) and no significant difference in spelling accuracy was found between CD and SMG words [$t(1,20)=-0.38$, $p=0.71$]. When different analyses were performed for 4th and 5th grade students, it was found that for 4th graders the difference between spelling accuracy for CD words (85.7%) and SMG words (86.5%) was not significant and there was a high and positive correlation between them [$t(1,20)=-0.38$, $p=0.71$; $r=0.68$, $p=0.001$]. The same holds for 5th grade students with spelling accuracy being slightly better for CD words (95.4%) in comparison to SMG words (95.2%) but the difference was not found to be significant [$t(1,29)=0.17$, $p=0.82$; $r=0.58$, $p=0.001$].

Separate analyses were performed for spelling different word endings both for CD words and SMG words. As before, t-tests were used to find significant differences for the whole sample and for 4th and 5th grade children independently. Table 1 shows the paired samples means, correlations and t-test results.

For the whole sample a significant difference between CD and SMG words was found for spelling the final /i/ sound of a verb correctly with the ending *-ει*. Children spelled the SMG word endings more accurately than the same ending for CD words.

On the other hand, the CD verb ending *-ομαι* (/ume/) children seems to be spell more accurately than its equivalent SMG *-ομαι* (/ome/).

Table 1. Descriptive statistics (mean % error, standard deviations in brackets), correlations and t-tests for the whole sample (all) and for the two sub-groups (4th and 5th graders)

All		Means (St.d)	Correlation	t-test	Sig. (2-tailed)
-ω	CD SMG	4.9 (10.7) 2.9 (11.4)	0.20	t(1,50)=0.81	0.42
-ει	CD SMG	15.7 (15.0) 6.5 (11.9)	0.44**	t(1,50)=2.61	0.01*
-ι	CD SMG	7.8 (26.1) 8.5 (20.0)	0.07	t(1,50)=0.19	0.85
-ο	CD SMG	2.0 (17.1) 4.9 (18.0)	-0.07	t(1,50)=-1.14	0.26
-έται	CD SMG	3.9 (19.4) 1.9 (13.9)	-0.03	t(1,50)=0.57	0.57
-όμαι	CD SMG	1.9 (13.9) 13.5 (34.5)	-0.06	t(1,50)=-2.20	0.03*
-η	CD SMG	21.2 (41.2) 26.9 (44.8)	0.54***	t(1,50)=-1.00	0.32
-εις	CD SMG	10.6 (24.9) 9.6 (28.0)	0.55***	t(1,50)=0.28	0.79

*p<0.05, ** p<.001, ***p<.0001

For 4th grade students a significant difference was only found for spelling the final /o/ sound of a verb correctly with the ending *-ω*, between CD and SMG words. Children spelled the SMG word endings more accurately than the same ending for CD words (see Table 2).

Table 2. Descriptive statistics (mean % error, standard deviations in brackets), correlations and t-tests for 4th graders

4 th		Means (St.d)	Correlation	t-test	Sig. (2-tailed)
-ω	CD SMG	11.9 (23.8) 2.4 (10.9)	0.40	t(1,20)=2.17	0.042*
-ει	CD SMG	25.4 (33.2) 15.9 (29.0)	0.43	t(1,20)=1.3	0.21

-ι	CD SMG	11.1 (19.2) 11.1 (21.9)	-0.04	t(1,20)=0.0	1.00
-ο	CD SMG	0.0 (0.0) 9.5 (20.1)		t(1,20)=-2.1	0.40
-έται	CD SMG	4.8 (21.8) 0.0 (0.0)		t(1,20)=1.0	0.33
-όμαι	CD SMG	4.8 (21.8) 23.8 (43.6)	-0.13	t(1,20)=-1.7	0.10
-η	CD SMG	38.1 (49.8) 33.3 (48.3)	0.49*	t(1,20)=0.44	0.67
-εις	CD SMG	19.0 (33.5) 19.0 (37.0)	0.70***	t(1,20)=0.00	1.00

*p<0.05, ** p<.001, ***p<.0001

For 5th grade students, significant differences were found, between CD and SMG words, for spelling the final /i/ sound of a verb correctly with the ending *-ει* and spelling the final /i/ sound for a female noun *-η*, but interestingly with different directions. When using the *-ει* morpheme children spelled the SMG word endings more accurately than the same ending for CD words. On the other hand for the *-η* (/i/) noun ending children seem to spell CD words more accurately than the SMG words (see Table 3).

Table 3. Descriptive statistics (mean % error, standard deviations in brackets), correlations and t-tests for 5th graders

5 th		Means (St.d)	Correlation	t-test	Sig. (2-tailed)
-ω	CD SMG	0.0 (0.0) 12.7 (2.3)	---	t(1,50)=0.81	0.42
-ει	CD SMG	17.4 (3.2) 0.0 (0.0)	---	t(1,50)=2.61	0.01
-ι	CD SMG	15.4 (2.8) 16.1 (2.9)	0.15	t(1,50)=0.19	0.85
-ο	CD SMG	12.7 (2.3) 9.1 (1.7)	-0.05	t(1,50)=-1.14	0.26
-έται	CD SMG	17.9 (3.2) 17.9 (3.2)	-0.03	t(1,50)=0.57	0.57
-όμαι	CD SMG	0.0 (0.0) 24.9 (4.5)	---	t(1,50)=-2.20	0.03
-η	CD SMG	30.0 (3.4) 42.5 (7.6)	0.60***	t(1,50)=-1.00	0.32
-εις	CD SMG	15.0 (2.7) 17.9 (0.7)	0.7	t(1,50)=0.28	0.79

*p<0.05, ** p<.001, ***p<.0001

3.2 Spelling CD postalveolars

The following analysis regards the spelling of phonemes that are specific to the CD and are not phonemes of the SMG and there is no standard graphemic representation for them, meaning that /dʒ/, /ʒ/, /tʃ/ and /ʃ/.

Investigating raw data it was evident that students use a variety of ways in spelling the four phonemes in question (example are shown in Table 4).

Table 4. Representation of phonemes /dʒ/, /ʒ/, /ch/ and /sh/

/dʒ/	τζ	ντζ	τζι	τσ	ζτ	νζ	σσ	τζζ	τσζ	ζζ	ντ	γκ	νττζ
/ʒ/	ζ	ζζ	σσ	σ	ζσ	σζ	ζα	τσο					
/tʃ/	τσ	τσο	τσι	σσ	τζ	τζι	ζι	κι	κκ	κτ	ττς	τζς	τσχ
/ʃ/	σσ	σσι	σ	σι	τς	σσχ	χ	σχ					

Replies were categorized into phonetically correct (for example <τζιζεις>, <βρέσσει>, <έσι>) and phonetically incorrect spellings (<καραζά>, <γκαράσσο>, <τζελιδόνι>). Phonetically correct answers yielded an acceptable pronunciation of the word in the CD, phonetically incorrect did not, a third category was also found useful to be employed by the authors, that of nearly phonetically correct spelling. This category included cases such as <ματσο>, <έσσει>, <βρέσσει>, where the spelling, though not totally phonetically correct, could not yield a not acceptable pronunciation. Descriptive analysis showed that for all phonemes children yielded phonetically correct spelling patterns (m=70.4%), less children produced nearly phonetically accurate spellings (m=23.1%) and even less produced phonetically incorrect words (m=6.6%). Looking at the different phonemes individually (Table 5) when only phonetically correct spellings are considered, it can be suggested that children had difficulty in spelling the /tʃ/ sound (52.2% correct) and found the /ʃ/ sound the easiest (81.6% correct), however, when considering both phonetically correct and nearly phonetically correct spellings there is no significant difference between the phonemes.

Table 5. Spelling CD phonemes categories

% Correct	dʒ	ʃ	tʃ	ʒ
Phonetically Correct	81.6	84.5	52.2	63.1
Nearly Phonetically Correct	9.7	9	41.5	32
Phonetically Incorrect	8.7	6.5	6.3	4.9

4. Discussion

4.1 Morphological Errors

As for the correct spelling of word endings governed by grammatical rules, the difference found between CD and SMG was expected, since our pupils come from an educational system where it is necessary to apply morphological spelling rules when

writing (in SMG). On the contrary, they had never before practiced in writing in CD (and consequently, applying certain spelling rules, when writing in CD). On the other hand, the fact that no significant difference was found between SMG and CD spelling accuracy, shows that our pupils do not seem to apply a more phonetic spelling, when writing in CD and that they find logical to apply (the same morphological) rules for spelling the CD words as in the SMG words, though nobody have instructed them so.

This is very important, because it shows that writing in CD could also be a useful tool concerning spelling training in SMG, the target language in GC language education. We could also add here that concerning certain endings the spelling accuracy was higher for CD words. The reason for this could be that our pupils have not generally mastered certain spelling rules of Modern Greek and it just happens that they make more errors in SMG words. But even so, this finding also shows for the usefulness of CD as a tool for SMG literacy, because it shows that writing in CD could offer chances for practicing in correct SMG spelling.

It could be suggested that since CD is the dialect pupils are using for verbal communication, phonological and morphological awareness could be better than those for SMG which is mainly used in more formal settings, like in the classroom. However, since this study explores spelling, the CD words have extremely low printed frequency, since there are very few instances where the pupils will read words, sentences or passages written in the CD. The effect of frequency has been shown in several studies in English, Greek and other orthographies (e.g., Alegria & Mousty, 1996; Baluch & Besner, 1991; Porpodas, 1999; Loizidou-Ieridou, et al; 2010) and the better performance on the SMG words can be due to a frequency effect, i.e. pupils have more experience with the written form of the word in SMG than CD, and on the other hand the better performance in the CD words can be the effect of a better understanding of the grammatical status of the word in CD since pupils hear and use the CD words more often than the SMG words. Regardless of the few morphemes that there is a significant difference between CD and SMG word spelling accuracy, the overall pupils' spelling performance shows no difference between CD and SMG, which suggest the employment of morphological/grammatical rules when spelling in CD, something that is not surprising since children seem to employ grammatical rules even when spelling non-words embedded in sentences where the grammatical category of the word is clear (e.g. Kemp & Bryant, 2004; Goswami et al, 1998; Goswami, 1988).

Concerning the finding that SMG 3rd singular verb forms ending in *-ει* were more accurately spelled than their CD equivalents, we suppose that this has to do with the fact that 3rd singular verb forms are used very frequently and, consequently, more easily retrievable from the mental lexicon in comparison with first singular forms in *-ομαι*. So, it seems that our pupils apply both visual and morphological strategies, when spelling in Modern Greek, meaning that they seem to learn more easily the morphemes with which they deal more often. This could also explain the fact that in 4th grade SMG first singular active verb forms in *-ω* are more accurately spelled than their CD equivalents: first singular verb forms are used very frequent in language teaching, since in Modern Greek metalinguistic discourse, when somebody refers generally to a verb, uses its first singular active form, for example “The verb *αγαπώ* belongs to the second conjugation”.

Concerning the case of the more accurate spelling of CD *-οιμαι* in comparison with its SMG equivalent *-ομαι*, we should point out that in CD the passive verbal

ending *-ουμαι* is homophone with the active verbal ending *-ουμε*, for example, *κρύφκουμε* “we hide” and *κρύφκουμαι* “I am hiding”. Maybe our pupils have a lot of “oral” chances to practice in distinguishing them semantically. Then, they may transfer this knowledge to the level of written speech and they use properly the different spellings for [-ume] which are available in MG orthography. On the other hand, for SMG the passive verbal ending and the active verbal ending are not homophonous, e.g., *κρύβομαι* “I am hiding” versus *κρύβουμε* “we hide” so both verbally and written there is a phonological as well as a morphological distinction between active and passive voice verbs endings.

4.2 Spelling CD postalveolars

Our pupils’ spellings of CD postalveolars show a wide range of variation (see Table 4). This is in accordance with remarks made by other researchers of CD spellings (cf. Armosti et al., forth.).

On the other hand, the fact that they generally produced phonetically accurate spellings indicates that they have some kind of phoneme-to-grapheme correspondence rules system concerning the CD, since they seem able to identify them and denote them in a way (at least relatively) consistent with the oral form of the words that include them. Besides, the fact that our pupils do bother to spell the postalveolar CD sounds in a way different than their alveolar equivalents is one of the elements that could be pedagogically related with the acquisition of knowledge about the structure of CD (phonetics/phonology etc.) and the basic similarities and dissimilarities between and CD and SMG, and one of these dissimilarities is the existence or not of postalveolars¹.

5. Concluding remarks

The findings of our research indicate that GC pupils do not seem to apply a more phonetic orthography when writing in CD. On the contrary, they seem to apply the same rules that they apply when writing in SMG. Besides, they seem to have a kind of phoneme-to-grapheme correspondence rules concerning special CD phonemes such as the postalveolars. Since, CD in Cyprus is officially considered as a (Standard) Modern Greek literacy tool, we believe that findings like these should be taken into account in the lesson planning of the language education concerning important matters such as the development of reading and writing in Modern Greek skills.

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¹See on page 11 of the new *Curriculum for the Modern Greek Language* (available at http://www.moec.gov.cy/analytika_programmata/nea-analytika-programmata/nea_elliniki_glossa.pdf).

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