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Autor: Güven , Mine; Gilanlıo□lu , İlkay

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On segmental deletion in the phonological adaptation of Greek loanwords in Cypriot Turkish

Mine Güven & İlkay Gilanlıoğlu

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This paper discusses segmental deletion as a simplification strategy in the phonological adaptation of Greek loanwords in Cypriot Turkish based on a 906-word corpus compiled from Saracoğlu (2004) and Kabataş (2007) and checked against the intuitions of a number of Turkish-Greek bilingual Cypriot Turks. It is argued that segmental deletion is governed by an attempt to achieve maximal perceptual similarity between input (Cypriot Greek/L2) and output (Cypriot Turkish/L1) forms provided that L1 phonological constraints are satisfied. In that respect, Cypriot Turkish seems to provide support for the synthetic approach to loanword adaptation where both phonological and perceptual factors interact to yield the optimal output.

Mine Güven, Beykent Üniversitesi, İngilizce Mütercim-Tercümanlık Bölümü, Ayazağa Köyü Hadım Koru Mevkii, Şişli İstanbul, Turkey. E-mail: mineguven@beykent.edu.tr
İlkay Gilanlıoğlu, Doğu Akdeniz Üniversitesi, İngiliz Dili Eğitimi Bölümü, Magosa via Mersin D-10, TRNC/Turkey. E-mail: ilkay.gilanlioglu@emu.edu.tr

1. Introduction

There seems to be a current interest in loanword adaptation with an emphasis on a constraints and repair model of sound change. The phonological adaptation of a loanword involves the speaker's attempt to conform not only to the phonological constraints of the donor/source language (L2) but also to those of the recipient/target language (L1) such as the inventory of sounds, stress patterns and phonotactics. There seem to be three major lines of thought in the literature with respect to the nature and locus of the process of adaptation and repair. Peperkamp et al. (2008) among others believe that a speech perception module based on acoustic similarities regulates the mapping of surface forms of loanwords to the phonological categories of the recipient language. According to this view, all sorts of foreign phonological structures are distorted during perception because L1 speakers do not have access to L2 phonology and thus are perceptually "deaf" to non-native sounds. Paradis & LaCharité (2008) among others, on the other hand, argue that, in adapting loanwords, bilinguals who are competent in both the donor and recipient languages establish equivalences based on the phonological rather than phonetic aspects of categories and structures. Finally, Yip (2006) and Shinohara (2006) among others de-

fend a view that may be considered a synthesis of the phonological and the perceptionist views mentioned above. The proponents of the synthetic view believe that the process of adaptation involves a number of factors such as phonetics and orthography in an attempt to yield the best counterpart for the source word. The speaker, as an active participant in the process of adaptation, does not simply perceive the phonetic input but manipulates the recipient grammar in determining the phonetic form of the loanword by making recourse to what s/he unconsciously knows about phonetic similarity. In fact, adaptations may involve unprecedented phonological and/or phonetic properties in the native language. Other scholars such as Kang (2003) and Kenstowicz (2007) have further emphasized perceptual salience as a factor in loanword adaptation such that speakers seek an output which is not only perceptually similar to the L2 input but also obeys the phonological constraints of L1.

In this paper, our aim is to focus on segmental deletion as a simplification strategy in the phonological adaptation process of Greek loanwords in Cypriot Turkish (henceforth CT) based on a 906-word corpus compiled from Saracoğlu (2004) and Kabataş (2007) and checked against the intuitions of a number of Turkish-Greek bilingual Cypriot Turks. In the light of our data, which exhibit deletion of various segments within illicit sequences in word-initial and medial positions in addition to word-final vowel + /s, n/ sequences, we will argue that segmental deletion is governed by an attempt to achieve maximal perceptual similarity between input (Cypriot Greek/L2) and output (CT/L1) forms provided that Turkish phonological constraints, especially in the case of illicit consonant clusters in the onset position, are fully satisfied and the perceptually salient segments of the source words are preserved. We will also try to show that CT data can best be accounted for provided that both phonological and perceptual properties are taken into consideration as suggested in the synthetic view mentioned above.

The paper is organised as follows: In Section 2, we will provide some background information on Turkish and Greek phonology and morphology, followed by an analysis of major instances of deletion in Section 3. The final section will summarize the empirical findings and discuss the theoretical implications thereof.

2. Background on Turkish and Greek phonology and morphology

The phonological systems of Turkish and Greek are distinct in terms of not only the inventory of sounds but also the phonotactics. Cypriot Greek (henceforth CG) is a South Eastern dialect of Modern Greek but usually unintelligible to speakers of Standard Modern Greek (henceforth SMG) (Arvaniti 1999: 173) because of its distinct properties as described by Newton (1967, 1972), Terkourafi (2001) and Arvaniti (2006) among others. There are two major varieties of the dialect: (i) urban Cypriot or local Cypriot Koine (*cipriaka*), which may be considered the acrolectal standard speech of educated people from the capital Nicosia, and (ii) village Cypriot or village speech (*xorkatika)*, which may be regarded as the basilectal patois speech mainly spoken in rural areas (Terkourafi 2001: 65-66, Arvaniti 2006: 4).

In addition to those in SMG described by Holton et al. (2004: 3), CG has three other consonant phonemes, namely the postalveolar voiceless affricate /ʧ/, the postalveolar voiceless fricative /ʃ/ and the postalveolar voiced fricative /ʒ/ as shown in Table 1 below (Newton 1967, Arvaniti 1999). Geminate consonants contrast with singletons in CG unlike in SMG (Newton (1972: 90, et passim), Arvaniti (1999: 174)). CG has the same vowel phoneme inventory as SMG with slight differences in vowel quality, as given in 1 below (Arvaniti 1999: 176). In both CG and SMG, vowel length is not phonemic.

(1) /i, ɛ, ɐ, ɔ, u/

	Bilabial	Labio-dental	Dental	Alveolar	Post-alveolar	Velar
Stop	p		t			k
Nasal	m		n			
Affricate					ʧ	
Fricative		f v	θ ð	s z	ʃ ʒ	χ ɣ
Tap				ɾ		
Lateral approximant				l		

Table 1: Consonant phonemes in Cypriot Greek after Arvaniti (1999: 174)

CT is an oral variety of Anatolian Turkish which exhibits a number of morphological, syntactic, lexical and phonological differences from Standard Turkish (henceforth ST), which is used only in formal written discourse in North Cyprus. In terms of phonology, in particular, CT is notably distinct from ST in that sentence intonation and word stress often require a short period of adaptation for those ST speakers who hear the dialect for the first time. However, the phonetics and phonology of CT have not, to our knowledge, been described so far within a formal linguistic framework.

CT shares the same phonetic inventory with ST as described by Zimmer & Orgun (1999: 154-156) (see Table 2 below). CT differs from SMG and CG in the following respects: It has neither the interdental (voiceless and voiced) fricatives /θ/ and /ð/ nor the velar voiceless fricative /χ/. On the other hand, it has the voiced stops /b/, /d/, /g/ as independent phonemes which are allophones of /p/, /t/, /k/ in Greek respectively. CT has the following phonemes which do not exist as independent phonemes in CG: the glottal voiceless fricative /h/, the palatal glide /j/ and the postalveolar voiced affricate /ʤ/. In addition to differences in vowel quality, CT has three additional vowel phonemes which are not part of the CG vowel inventory given in 1 above: the high back unrounded /ɯ/, the high front rounded /y/ and the low front rounded /œ/, as listed in 2 below. Vowel length is not phonemic in CT either, except in a few loanwords, e.g. *mali* /ma:.li:/ 'financial' vs. *Mali* /ma.li/ 'The Republic of Mali'. The allophonic distribution of phonemes in CG and CT and other

assimilatory/dissimilatory processes will be mentioned where relevant to the analysis.

(2) /i, ɛ, a, o, ʊ, y, œ, ɯ/

	Bilabial	Labio-dental	Dental	Alveolar	Post-alveolar	Palatal	Velar	Glottal
Stop	p b		t d			c ɟ	k g	
Nasal	m		n					
Affricate					tʃ dʒ			
Fricative		f v	s z		ʃ ʒ		ɣ	h
Tap				ɾ				
Approximant						j		
Lateral approximant			ɬ		l			

Table 2: Consonant sounds in ST after Zimmer & Orgun (1999: 154)

As far as phonotactics is concerned, Greek words do not end in consonants other than /s/ and /n/ except for rare cases that end in /r/ (Holton et al. 2004: 8). In all other cases, Greek words end in vowels, i.e. open syllables. Consonant clusters in the coda position are not allowed, but almost all consonants can co-occur within (two- or three-member) consonant clusters in the onset position and word-medially (Holton et al. 2004: 8-14). On the other hand, in Turkish, consonant clusters in the onset position are not allowed. Such clusters are resolved through epenthesis or deletion of one of the consonants. Two-member consonant clusters in the coda position do occur as long as they consist of a sonorant and an obstruent or two non-identical obstruents (Kabak & Vogel 2001: 345). Turkish allows both open and closed syllables.

Word stress in Greek is contrastive. The syllable on which primary stress falls is unpredictable. However, primary stress is found in one of the three final syllables, namely the final, the penult and the antepenult in SMG, while in CG it may also be found in the fourth syllable from the end of the word. Unlike in SMG, no secondary stress is added when a word with antepenultimate stress is followed by an enclitic in CG (Arvaniti 1999: 177). Word stress is contrastive in Turkish as well. However, unlike Greek, Turkish stress is largely predictable. Turkish usually places primary stress on the final syllable of a regular word regardless of the length of the word or the weight of the syllables. The stress remains in the final syllable even when non-enclitic suffixes are added. On the other hand, the irregular roots have unpredictable stress assignment and the originally stressed syllable remains the same when followed by suffixes (Kabak & Vogel 2001).

Since most of the loanwords in our corpus (757 out of 906 (83.6%)) are nouns, some information on nominal morphology is in order here. Greek nominal morphology is inflexional while that of Turkish is agglutinative. As can be seen in Table 3 below, when inflected for case and number, the masculine singular Nominative form [ɐn.θrɔ.pɔs] 'man' appears in six other phonological instantiations which involve changes in word-final (V)(C) sequences and the place of stress. Moreover, in the so-called imparisyllabic words, an extra syllable is added in the plural. In fact, given the entire set of paradigms, it is possible to hear up to forty-four endings in total in the singular and plural forms of the four cases with the masculine, feminine, common and neuter genders (Holton et al. 2004: 48-72).[1] Greek adjectives also are inflected for gender, case and number.

Cases	Noun (definite, singular)		Noun (definite, plural)	
Nominative	o	ɐn.θrɔ.pɔs	i	ɐn.θrɔ.pi
	adam-*Ø* → a.dam		adam-*lAr-Ø* → a.dam.ɬar	
Accusative	ton	ɐn.θrɔ.pɔ	tus	ɐn.θrɔ.pus
	adam-*(y)I* → a.da.mɯ		adam-*lAr-(y)I* → a.dam.ɬa.ɾɯ	
Genitive	tu	ɐn.θrɔ.pu	ton	ɐn.θrɔ.pɔn
	adam-*(n)In* → a.da.mɯn		adam-*lAr-(n)In* → a.dam.ɬa.ɾɯn	
Vocative	--	ɐn.θrɔ.pɛ	--	ɐn.θrɔ.pi
	--		--	

Table 3: The inflectional paradigm of a parisyllabic word that ends in *–os* (*anthropos* 'man') adapted from Holton et al. (2004: 51) compared with that of the Turkish counterpart (*adam)*

In contrast, Turkish nominal inflection is much simpler and highly regular, and adjectives are not inflected. Case and number (but not gender) are marked in Turkish by adding to the noun stem the relevant suffixes, whose nuclear vowel(s) harmonize with the preceding nuclear vowel in backness/frontness, and rounding if the suffix contains a high vowel because Turkish has palatal harmony in all vowels and labial harmony in high vowels both within most native stems and in most suffixes. The

[1] These segmental sequences are /i, e, a, o, u, is, es, as, os, us, ia, iu, ea, on, ion, eas, eos, ades, edes, ides, udes, adon, idon, edon, udon, ma, mata, matos, maton, imo, imata, imatos, imaton, atos, ata, ton, ta, tos, ros, ra, ron, ndos, nda, ndon/ (Holton et al. 2004: 48-72). Note that most of these endings are composed of a vowel followed by either /s/ or /n/, which seems to add to the confusion they may already have created in the mind of a learner of Greek as a foreign/second language who has to learn all of these mostly unpredictable forms by heart.

output is resyllabified after each suffix is added, and the stress moves to the final syllable (except in the case of a number of enclitic suffixes) as illustrated in Table 3 above.[2]

3. Data analysis

In this section we will discuss segmental deletion as a phonological adaptation strategy for Greek loanwords in CT before attempting to examine in Section 4 the theoretical implications of the data for the aforementioned accounts of loanword adaptation. Although the discussion will mainly focus on deletion, we will also refer to other processes such as epenthesis and assimilation for purposes of comparison and/or exposition. Deletion is a process where the original phonological content of a word is lost (Brasington 1997). In our corpus, the typical target of deletion at word-initial position (aphaeresis) seems to be a single consonantal segment within an onset consonant cluster, while at word-final position (apocope) it may be (i) a vowel, (ii) a consonant (either /s/ or /n/) or (iii) a combination of a vowel and one of the consonants /s/ or /n/. Deletion at word-medial position (syncope) is much less frequent than that at the other two positions and the target of deletion is often a single segment such as an unstressed vowel or a non-native consonant within an onset consonant cluster, though heterosyllabic sequences of segments may be deleted as well.

3.1. Deletion of word-initial segments

In our corpus there are no vowels which are deleted word-initially, but the following Greek consonant phonemes may be deleted in prevocalic word-initial position when they are not members of a consonant cluster: /ð/ (*oksari*)[3] as in 3, /χ/ (*organi, horgani*)[4] as in 4 and /ɣ/ (*alina, galina*) as in 5.[5]

[2] Table 3 includes only three of the Turkish Cases for purposes of comparison with Greek. The remaining Cases of Turkish are Dative *-(y)A*, Locative *-DA*, Ablative *-DAn* and Comitative *-(y)lA*.

[3] The conventions of Turkish orthography roughly correspond to the following sounds. The orthographic dotless 'i' (*ı*) is the high back unrounded vowel (IPA: [ɯ]). The symbols *ü* and *ö* represent the high front rounded vowel and the non-high front rounded vowel (IPA: [y] and [œ], respectively). The symbols *y, ş, j, ç*, and *c* indicate the palatal glide, the voiceless and voiced palato-alveolar fricatives, and the voiceless and voiced palatal affricates (IPA: [j], [ʃ], [ʒ], [ʧ] and [ʤ]), respectively. The letter called 'soft *g*' (*ğ*) usually lengthens the preceding vowel and is generally not pronounced in Standard Turkish.

[4] The existence of multiple variants in many of the examples to be discussed below might be linked to various factors such as (i) regional variation, as neither CG nor CT is monolithical, (ii) different degrees of Turkish-Greek bilingualism, (iii) possible lexical strata in the sense of Broselow (2003), which may reflect diachronic variation in adaptation strategies, (iv) earlier pronunciations of the source words (Paradis & LaCharité 2008: 121), (v)

(3) [ðɔ.ksɐ.ɾin] > [ok.sa.ri][6] δοξάριν[7] 'bow, fiddlestick'[8]
(4) [χɔɾ.gɐ.ni] > [oɾ.ga.ni, hoɾ.ga.ni] χωργκανή 'villager woman'
(5) [ɣɐ.li.nɐ] > [a.li.na] γαλίνα 'a female turkey'

The majority of consonantal segments deleted word-initially are the first members of onset consonant clusters. Among the many possible combinations in Greek, only the following two-member consonant clusters in the onset position in 6-7 are exemplified in our corpus.[9] There is only one example of a three-member cluster as in 8.

(6) a. stop + fricative (/s/) /ps, ts, ks/
b. stop + liquid (/l, ɾ/) /pɾ, tɾ, kɾ, kl/
(7) a. fricative + liquid (/l, ɾ/) /θɾ, ðɾ, vɾ, vl, ɣɾ, ɣl, χɾ/
b. fricative (/s/) + fricative /sf/
c. fricative (/s/) + stop /sp, st, sk, sm/
(8) /s/ + stop + C /stɾ/

Vowel epenthesis (both anaptyctic and prothetic) seems to be the major consonant cluster resolution strategy in CT.[10] Most clusters are resolved through epenthesis as

native (CT-internal) assimilatory processes which the initial borrowed form may have undergone through time (Paradis & LaCharité 2008:117).

5 Although the phonological status of the so-called "soft *g*" is much debated, [ɣ] seems to be one of its phonetic realizations along with the velar glide [ɰ] (Kabak 2007: 1381, fn. 2). This sound may appear in the onset position word-medially as in *dağa* 'to the mountain' [da.ɣa], but it does not appear word-initially. Therefore, it is deleted or replaced by [g] as in 5 to obey the phonotactic constraints of Turkish.

6 Primary stress is indicated by underlining the relevant syllable in the transcriptions.

7 The spelling, variants, and meaning of Greek words mostly come from Kabataş (2007) and Yangullis (2002). Two Cypriot Greek informants who do not speak Turkish but who are well aware of the differences among SMG, *cipriaka* and *xorkatika* have been consulted in a number of unclear cases, especially on the authentic syllabification and pronunciation of the relevant words in *xorkatika*.

8 The CT words, their variants and current meaning in CT come from Saracoğlu (2004), Kabataş (2007) and the native speaker knowledge of our Turkish Cypriot informants. The various meaning changes that these loanwords have undergone will be ignored in this study. See Yangullis (2002) for the original meanings of the CG words.

9 Although it is not agreed whether the sounds /ts/ and /dz/ are affricates or consonant clusters (Holton et al. 2004:6), they will be considered as consonant clusters for the sake of simplicity in this study.

10 The following onset clusters in our corpus exhibit deletion of one of the consonants to a certain extent: /ts/ 6 cases out of 8 (75%), /ks/ 2/2 (100%), /kl/ 1/7 (14%), /sf/ 2/3 (67%), /sk/ 1/12 (0.8%), /θɾ/ 1/1 (100%), /ðɾ/ 1/4 (25%), /vl/ 2/2 (100%), /ɣɾ/ 1/2 (50%), /ɣl/ 3/3 (100%), /χɾ/ 1/1 (100%) and /stɾ/ 1/1 (100%). The remaining instances of these clusters have been resolved through epenthesis except for /ts/ which has been assimilated to /ʧ/

in 9-11: /sp/ (*ispaho, isbaho, ɪsbaho*) in 9, (*usburdulla*) in 10, and /pɾ/ (*bruncollos, buroncolas, boroncoles*) in 11a-b. The inserted segment is always a high vowel whose backness/frontness and roundedness features are determined by the nearest nuclear vowel in accordance with palatal and labial harmony, as in the prothetic [ʊ] in 10. Vowel harmony in CT seems to be less strict than in ST since the disharmonic prothetic vowel [i] is acceptable in two of the variants in 9 along with the harmonic [ɯ]. The epenthetic vowel in 11b (*boroncoles)* seems to have undergone further assimilation where the initial epenthetic /u/ has been regressively assimilated to /o/ in the following syllable. Interestingly, the /pɾ/ cluster has been kept intact in one of the variants of 11a, namely, *bruncollos*. The insertion of a vowel to resolve a cluster necessarily involves resyllabification, which may or may not affect the position of stress. In 9 and 11 the original stressed vowel seems to be retained while in 10 the position of the stress has moved from the antepenult to the penult.

(9)	[spɐ.ɔs] > [is.pa.ho, is.ba.ho, ɯs.ba.ho]	σπάος	'string/twine'
(10)	[spuɾ.tɛ.l:ɔs] > [ʊs.bʊɾ.dʊl.la]	σπούρτελλος	'a kind of plant'
(11) a.	[bɾin.dʒɔ.l:ɔs] > [bɾʊn.dʒɔl.los, bʊ.ɾon.dʒɔ.las]	πριντζόλλος	'a kind of plant'
b.	[bɾin.dʒɔ.l:ɔs] > [bo.ɾon.dʒo.les]		

Among the stop + C clusters, only the /kl/ (*logga, loggo, lokko*), /ts/ (*samarella*), and /ks/ (*sisdira*) clusters in 12-14 respectively exhibit deletion of the initial stop member of the cluster while the sonorant segment is retained.

(12)	[glɔ.g:ɔ] > [log.go]	κλόκκο	'a raw fig'
(13)	[tsɐ.mɐ.ɾɛ.l:ɐ] > [sa.ma.ɾɛl.la]	τσαμαρέλλα	'salted meat'
(14)	[ksi.stɾɐ] > [sis.di.ɾa]	ξύστρα	'a kind of tool'

In the fricative + /ɾ, l/ clusters, the fricative member is deleted: /ɣl/ (*lindo*) in 15, /ɣɾ/ (*rammi*) in 16 and (*rumbi*) in 20, /vl/ (*langara*) in 17, /vɾ/ (*raga, vɪraga, dɪraga*) in 18 and /χɾ/ (*ruso*) in 19. As for /ðɾ/ and /θɾ/, whose initial fricatives do not exist in the Turkish phonetic inventory, deletion is a favorable resolution strategy as in 20 with (*rumbi, frumbi, firumbi, firumbi*) and (*tülümbe*) in 21. 21 is interesting in that both /ɾ/ and /θ/ have been deleted to be replaced by /t/. In fact, the resultant word does not sound foreign at all, especially with /y/ and final stress.

(15)	[ɣli.^{n}dɔs] > [lin.do]	γλίντος	'a kind of plant'
(16)	[ɣɾɐ.m:i] > [ɾam.mi]	γραμμή	'a shuttle service'

and /dʒ/ in 2 cases (25%). Other word-initial onset clusters that do not allow deletion are the following: /ps/ (0/2), /pɾ/ (0/6), /tɾ/ (0/16), /kɾ/ (0/2), /sp/ (0/10), /st/ (0/7), /sm/ (0/1) and /vɾ/ (0/2). The total number of cases of deletion is 22 (24%) against 62 (67%) cases of epenthesis (30 cases of anaptyxis vs. 32 cases of prothesis) out of 92 word-initial onset consonant clusters.

(17) [vlɐ.ⁿgɐ.ɾɐ] > [lan.ga.ɾa]	βλαγκάρα	'a raging thirst'
(18) [vɾɐ.gɐ] > [ɾa.ga, vɯ.ɾa.ga, dɯ.ɾa.ga]	βράκα	'baggy ankle-length shorts'
(19) [χɾu.sɔs] > [ɾʊ.so]	χρυσός	'red-haired'
(20) [ðɾu.ᵐbin, ɣɾu.ᵐbin] > [ɾʊm.bi]	δρουμπίν, γρουμπίν	'bush'
(21) [θɾu.ᵐbin] > [ty.lym.bɛ]	θρουμπίν	'a kind of plant'

In the fricative (/s/) + stop clusters, deletion is rarely preferred to epenthesis as with the /sk/ cluster in 22 (*guli*). In our corpus, there are only three Greek source words with a /sf/ onset cluster given in (23-25) below. Epenthesis is preferred in the first two variants of 23 (*isvina, sifina, sina*). Unlike the rest of the onset clusters in 12-21 above where the initial member is deleted, the /sf/ sequence in 23 (*sina*), 24 (*sünger*) and 25 (*siga, sici*) is simplified through deletion of the second member of the cluster.[11]

(22) [sci.li, ʃ:i.l:i] > [gʊ.li]	σκυλί	'puppy'
(23) [sfi.nɐ] > [is.vi.na, si.fi.na, si.na]	σφήνα	'a kind of tool'
(24) [sfun.ɣɐ.ɾi] > [syŋ.ɟɛɾ]	σφουγγάρι	'sponge'
(25) [sfi.gɐ] > [si.ga, si.dʒi]	σφήκα	'wasp'

The only three-member cluster in our corpus is /stɾ/ as in 26 (*ısladır, isladır, isdadır*). In the [is.da.dɯɾ] version of 26, the /ɾ/ has been deleted and the /t/ has been voiced. In the other two variants, /t/ has been replaced by /l/. Prothesis before /s/, word-final /a/ deletion, resyllabification and unrounding of /u/ are other adaptation processes that have applied.

(26) [stɾɐ.du.ɾɐ] > [ɯs.ɬa.dɯɾ]	στρατούρα	'saddle'

3.2. Deletion of word-medial segments

Our corpus contains a number of loanwords which have lost vocal and consonantal segments word-medially, sometimes for no obvious reason at all. For example, in 27 (*simit*) the penultimate and ultimate syllables of the source word have disappeared, while the foreign segment /ð/ has been replaced by /t/ in the target CT word.

(27) [si.mi.ɣðɐ.li] > [si.mit]	σιμιγδάλι	'semolina'

Deleted word-medial vowels are either unstressed vowels elided in fast speech or heterosyllabic vowel sequences causing hiatus. For example, in 28 (*publa*) the un-

[11] As our anonymous reviewer has pointed out, it is not clear whether *sünger* has been borrowed directly from CG into CT or indirectly from ST because the same form exists in ST as well.

stressed vowel in the penultimate syllable has been deleted leading to resyllabification such that the onset consonant of the penult of the source word has become the coda consonant of the antepenultimate. In 29-30, heterosyllabic vowel sequences have been resolved through deletion of one of the vowels. In 29 (*appiduri*), the second of the two identical vowels has been deleted without affecting the position of the stress, or lengthening the preceding vowel. On the other hand, in 30 (*gukkuri*) the heterosyllabic /u.i/ sequence has been resolved by the deletion of the first member /u/ despite the fact that it is the nucleus of the syllable bearing primary stress. The onset consonant /ɾ/ of /u/ then becomes the onset of /i/ in the following syllable. Interestingly, in spite of deletion and resyllabification, both the source and the target word have penultimate stress. In 31 (*sellos*), the /ad/ sequence, which does not constitute an independent syllable, has been deleted. In fact, in 31, the originally stressed nuclear vowel has changed as well, contrary to the general tendency to retain it, which we will illustrate in §3.3 below.

(28) [pu.pu.lɐ] > [pʊb.la]	πούπουλα	'cushion, pillow'
(29) [ɐ.p:i.i.du.ɾin] > [ap.pi.dʊ.ɾi]	αππηητούριν	'a kind of worm'
(30) [gu.g:u.ɾu.in] > [gʊk.kʊ.ɾi]	κουκκουρούιν	'cracker'
(31) [sɛ.l:ɐ.dɔs] > [sɛl.los]	σελλάτος	'curved, bent'

Deletion of word-medial consonants seems to involve the foreign sounds /ð/, /θ/ and /χ/, which are either deleted or replaced by a native phone. For example, in 32 (*istiyayi*), /ð/ disappears from the onset position, as was the case in 3 above as well. Here, there is prothesis to resolve the /st/ cluster followed by resyllabification and palatal glide (/j/) epenthesis to resolve the heterosyllabic vowel hiatus /i.a/. The palatal glide replaces the /ð/ in the onset of the ultimate syllable of the source word as well. In 33 (*çorçolikya, çörçöludya, çörcöllikya, çerçelli*) the orthographic *-δκια* sequence is pronounced as [θcɐ] as part of the conventions of CG: word-medial obstruent clusters must agree in voicing and consist of a fricative and a stop (Arvaniti 1999: 176). In the CT output, the /θ/ is deleted while the palatal feature of the sequence is retained by /j/ and the palatal allophone of /k/, i.e. [c]. The CT variants of 33 clearly show different stages of the adaptation process where even the native /œ/ has appeared in two of the variants. However, it is not clear whether such drastic changes may be attributed to native processes in the sense of Paradis & LaCharité (2008: 117), either. This is because /o, œ/ are usually found only in the first syllable of native stems, e.g. **köpök* vs. *köpek* 'dog' and *köpük* 'foam/froth', or **solok* vs. *solak* 'left-handed' and *soluk* 'breath' (§2 above for vowel harmony in Turkish), while loanwords may include such sequences, e.g. *otobüs* 'bus,' *römork* 'trailer' and *şoför* 'driver'.

(32) [sti.ɐ.ðin] > [is.ti.ja.ji]	στιάδιν	'shelter for animals'
(33) [dʒɛɾ.dʒɛ.l:u.θcɐ] > [ʧor.ʧo.lic.ja]	τσερτσελλούδκια	'a kind of dessert'

In 34a (*arakti*), 34b (*arahti*), 34c (*ahreddi*) and 34d (*ahretti*), /χ/ in the onset of the final syllable of the source word is deleted, leading to heterosyllabic /dd/ and /tt/ sequences in two of the CT variants in 34c-d.[12] In the other two variants, /χ/ is replaced by /h/ as in 34b or /k/ as in 34a, which then become the coda consonant of the preceding syllable. The Greek phoneme /ɣ/, which is not an independent phoneme and phonotactically constrained in Turkish, is deleted in two of the CT variants in 34a-b and replaced by /h/ in the other two in 34c-d.

(34) a. [ɐ.ɣɾɐ.χtin] > [a.ɾak.ti] αγράχτιν 'a kind of tool'
b. [ɐ.ɣɾɐ.χtin] > [a.ɾah.ti]
c. [ɐ.ɣɾɐ.χtin] > [ah.ɾed.di]
d. [ɐ.ɣɾɐ.χtin] > [ah.ɾet.ti]

3.3. Deletion of word-final segments

As was mentioned above, Greek words either end in vowels or one of the following consonants, /s/, /n/ and rarely /ɾ/. In general, it is observed that word-final V, C or VC sequences in Greek nouns and adjectives may be deleted as long as the syllable affected does not bear primary stress.

3.3.1. Deletion of word-final vowels

In our corpus there are no Greek source words that end in /e/ or /u/, but those with a word-final /i/, /a/ and /o/ seem to pattern together in the following manner. For example, in 35 (*anıhdar*), first, the word-final /i/ which constitutes the nucleus of the final syllable is lost. Then, the word undergoes resyllabification so that the remaining onset consonant of the final syllable–now without a nucleus–can be attached to the former syllable as the coda.[13] In fact, this move not only satisfies the syllable structure constraints of Turkish but also obeys the final stress rule in regular roots.

[12] There seems to be no obvious reason for the gemination in 34c-d. To speculate, according to the so-called "Sezer stress rule" formulated on the basis of the Latin stress rule to account for irregularly stressed words, the antepenultimate syllable is stressed if the antepenult is heavy and the penult is light. Otherwise, the penult is stressed. There is also some statistical evidence suggesting that penultimate stress is more frequent than antepenultimate stress even when the antepenult is heavy (Kabak & Vogel 2001: 317-318). Therefore, gemination in 34c-d may be an attempt to make the penultimate syllable heavy because it would help preserve the original penultimate stress in spite of the heavy antepenultimate syllable which has become /ah/ after resyllabification to resolve the /ɣɾ/ cluster. Alternatively, the /t/ and /d/ might be simply assimilated forms deriving from the other adapted CT variants in 34a-b.

[13] There is another instance of resyllabification in 35 for the illicit consonant sequence /χt/ in the penultimate syllable of the source word, further suggesting the strength of the phonotactic constraints of Turkish.

As a result, the vowel in the penultimate syllable of the source word still bears the primary stress in the target word incorporated into CT although the source word has lost the final /i/ segment. Similarly, deletion of the word-final /a/ leads to resyllabification and preservation of the original stressed nucleus as in 36 (*valvid*). Moreover, 37 (*sürdis, surdis*) with a word-final /o/ and penultimate stress shows resyllabification, devoicing of the final fricative and even fronting of the initial back vowel. The result no longer sounds "foreign" except for the second high vowel which does not agree in rounding with the preceding rounded high vowel. A totally nativized version would have been /syr.dys/ due to labial harmony mentioned above in §2.

(35) [ɐ.ni.χtɐ.ri] > [a.nɯh.dar] ανοιχτάρι '(door)key'
(36) [vɐl.vi.ðɐ] > [val.vid] βαλβίδα 'valve'
(37) [sur.di.zɔ] > [syr.dis] σουρτίζω 'diarrhea'

Looking at 35-37, we can say that the adaptation process satisfies the constraints of both L1 and L2. The originally perceptually salient segments–including the stressed nuclear vowels–have been retained, thus producing an acoustically more faithful output, while the phonotactic constraints of L1 apply without exception. Moreover, deletion of the final unstressed and thus less salient vowel in L2 words with penultimate stress has the additional benefit of creating an output with a final stress, which seems to be the optimal choice in regular Turkish roots. However, there are also rare cases such as 38 (*biham*) where a stressed final /i/ has been deleted even though it does not seem to violate any L1 constraints. Interestingly, the resultant CT word still has primary stress in the ultimate syllable although the nuclear vowel has changed.

(38) [bi.θɐ.mi] > [bi.ham] πιθαμύ 'span'

3.3.2. Deletion of word-final consonants

Deletion of word-final /s/ in 39-41 (*solina*), (*gavro*), (*dirifti*) leaves /a/, /o/ and /i/ behind as the final sounds, but does not seem to affect stress. Although an epenthetic high vowel is added in 41 to resolve the /tr/ cluster in the onset position, resulting in an extra syllable and resyllabification, the original vowel bearing primary stress is retained. In 40 the heterosyllabic /a.u/ sequence has been resolved by labial glide (/w/) formation. Again, the original stress-bearing vowel still bears primary stress in the resyllabified target form.

(39) [sɔ.li.nɐs] > [so.li.na] σωλήνας 'metal water pipe'
(40) [gɐ.u.rɔs] > [gaw.ro] κάουρος 'wrench'
(41) [dri.ftis] > [di.rif.ti] τρίφτης 'grater'

Similarly, the words whose final /n/ has been deleted usually remain with a final /a/, /o/ or /i/ as in 42-44 (*epsima*), (*porto*), (*angoni*). Deletion of /n/ does not move the stress or cause resyllabification, either. In fact, this seems to be a faithful preservation of the input rather than deletion because, as Holton et al. (2004: 8) note, word-final /n/ is conventionally deleted in Greek.

(42) [ɛ.psi.mɐn] > [ɐp.si.ma]	έψημαν	'late(-season)'
(43) [bɔr.tɔn] > [por.to]	πόρτον	'a kind of jam/dessert'
(44) [ɐŋ.ɣɔ.nin] > [aŋ.go.ni]	αγγόνιν	'grandchild'

3.3.3. Deletion of word-final vowel + C sequences

The only word-final vowel + C sequences exhibited by the Greek source words found in our corpus are /os/, /is/, /in/ and /on/, and they all exhibit deletion of word-final sequences, leading to resyllabification and a change in the position of stress, as exemplified in 45 (*vardiyan*) and 46 (*ergat, ergad*).[14] The onset clusters /tɾ/ in 47 (*androş*) and /χl/ (*mahlız*) in 48 have been resolved by resyllabification. Since sonorant + obstruent consonant clusters in the coda position are allowed in Turkish, /d/ felicitously becomes the obstruent member of the coda cluster /nd/ in 47. Thus, 47 and 48 seem to further suggest that deletion of final segments in CG words with penultimate stress serves the purpose of achieving a more "native-sounding" form with final stress with no illicit consonant clusters.

(45) [vɐr.jɐ.nɔs, vɐr.ðjɐ.nɔs] > [var.di.jan]	βαργιάνος, βαρδιάνος	'prison guard'
(46) [ɛr.ɣɐ.dis] > [ɛr.gat]	εργάτης	'worker'
(47) [ɐn.drɔ.ʃin] > [and.roʃ]	αντρόσιν	'wooden/stone stopper'
(48) [mɐ.χlu.zin] > [mah.ɬɯz]	μαχλούζιν	'seedless cotton'

However, it is not clear whether the possibility of obtaining final stress is the only motivation for such deletions. For example, the final /in/ sequence in 49 (*gıllap*) has been deleted although the source word already has ultimate stress, making stress-motivated deletion redundant. 49 seems to have undergone (i) epenthesis of /ɯ/ to resolve the /kl/ cluster in the onset position, (ii) doubling of the original singleton /l/ and their heterosyllabic resyllabification, (iii) degemination of /p:/ and (iv) deletion of final /in/. Not surprisingly, the result is a perfectly "Turkish" word.

(49) [glɐ.p:in] > [gɯɬ.ɬap]	κλαππίν	'door handle'

[14] In SMG, no declension class ends in /-in/. This must be a property specific to CG.

3.3.4. Deletion of other word-final segments

Our corpus contains a few words which seem to have lost word-final sequences for no obvious reason. Some of them may be reflecting a simplification strategy similar to the deletion of final vowels discussed above, e.g. /io/ as in 50 (*anavador*, *anavado*), while some of them seem to be deleting a combination of a consonant followed by a vowel: C + /a/ as in 51 (*milingidi*) and 52 (*isten*), C + /o/ as in 53 (*gavlo*) and C + /i/ as in 54 (*oro, orofi*). Other deleted sequences are the following: /nos/ as in 55 (*ruva*) and /onin/ in 56 (*mirt*).

(50) [ɐ.nɐ.vɐ.dɔ.ɾi.ɔ] > [a.na.va.doɾ]	αναβατόριο	'a kind of tool'
(51) [mi.ni. ᵑɟi.di.ðɐ] > [mi.lin.ɟi.di]	μηνιγγίτιδα	'ailing'
(52) [stɐ.ᵑgɐ] > [is.ten]	στέγκα	'Sten gun'
(53) [gɐw.lɔ.n:ɔ] > [gaw.lo]	καυλώννω	'sexual desire'
(54) [ɔ.ɾɔ.fi] > [o.ɾo.fi, o.ɾo]	ορόφη	'juice of Cyprus cheese'
(55) [ɾu.vɐ.nɔs] > [ɾu.wa]	ρούβανος	'origan'
(56) [miɾ.tɔ.nin] > [miɾt]	μυρτόνιν	'a kind of bug'

4. Discussion and conclusion

This paper has focused on segmental deletion at word-initial, word-medial and word-final positions in Cypriot Greek loanwords in Cypriot Turkish (see Table 4 for the overall frequency of deletions at each position).[15] Out of the 906 entries, 412/906 (45.5%) seem to have undergone deletion of some segment(s) or sequences. Aphaeresis (2.9%) and syncope (1.9%) are much less frequent in the data in comparison to apocope (40.6%). There are no single vowels deleted at initial position, while there are 7 instances of vocal deletion at medial position (2 cases of /e/ and 1 case of /u/ deletion due to hiatus and 2 cases each of elision of /i/ and /u/). At word-final position, there are 14 cases of /a/ deletion (in 11/14 (78.5%) cases the source word has penultimate stress), 2 cases of /o/ deletion (2/2 (100%) with penultimate stress), and 28 cases of /i/ deletion (26/28 (92.9%) with penultimate stress). As for single consonants deleted at word-initial position, there are 22/27 (81.4%) cases within an onset consonant cluster (see fn. 10 above for their distribution with respect to types of consonant clusters) and 5/27 (18.5%) prevocalic ones. There are only 8 cases of deletion within word-medial onset consonant clusters, while there are 169 cases of /s/ and 100 cases of /n/ deleted word-finally. With respect to vowel + consonant sequences discussed in §3.3.3, all cases occur word-finally: 5 cases of /os/ (5/5 (100%) with penultimate stress in the source word), 7 cases of /is/ (7/7 (100%) with penul-

[15] The figures given in Table 4 include only those cases where the source segment has totally disappeared and not many other cases where source segments have undergone place, manner or voicing assimilation to native phones. In addition, each instance is counted only once, e.g. cases of vowel + /s/ are not counted within the cases of /s/ deletion.

timate stress), 3 cases of /on/ (1/3 (33.3%) with penultimate stress), and 17 cases of /in/ (15/17 (88.2%) with penultimate stress). There are also 3 cases of deletion of various ((non)-syllabic) sequences word-medially and 23 word-finally.

Type of segment(s)	Word-initial	Word-medial	Word-final
Single vowel	0	7	44
Single consonant	27	8	269
Vowel + consonant	0	0	32
Other sequences	0	3	23
Total	27/906 (2.9%)	18/906 (1.9%)	368/906 (40.6%)

Table 4: The frequency of deletions at initial, medial and final positions in the corpus

The data have revealed various adjustments at segmental, phonotactic and prosodic levels at each position. Deletion at word-initial position seems to be governed by both segmental, e.g. CG phonemes which are not part of the Turkish phonemic inventory, and phonotactic constraints, e.g. illicit onset consonant clusters. At word-medial position, hiatus resolution through deletion is a consequence of the phonotactic constraints as well, while elision of unstressed vowels is an adjustment at prosodic level. On the other hand, deletion at word-final position seems to be perceptually and arguably morphologically motivated (see below). In that respect, our data seem to lend support for the synthetic view which assumes the cooperation of both perceptual and phonological factors in loanword adaptation such that in many cases the particular adaptation strategy chosen may reflect the effects of both factors.

The significance of auditory factors seems evident in the target forms of the loanwords, where subphonemic properties are also reflected as long as there is no violation of an L1 constraint. For example, the target forms in 33 (*çorçolikya, çörçöludya, çörcöllikya, çerçelli*) retain the palatal feature that arises due to the CG conventions where the orthographic *-δκια* sequence is pronounced as [θcɛ] (Arvaniti 1999: 176) even though the foreign segment has been deleted. The most important feature in adapting foreign segments seems to be voicing, while the target phones may either share manner or place of articulation. For example, the palatal fricative in 45 (*vardiyan*) is adapted as the palatal glide, whereas the interdental (voiceless) fricative in 38 (*biham*) has been replaced by the glottal (voiceless) fricative. Greek consonant phonemes which are not part of the CT inventory may also be deleted word-initially as in 3 (*oksari*), 4 (*organi, horgani*) and 5 (*alina, galina*) or word-medially as in 32 (*istiyayi*), 33 (*çorçolikya, çörçöludya, çörcöllikya, çerçelli*) and 34a-d (*arakti, arahti, ahreddi, ahretti*). However, in most cases, the foreign phonemes are substituted by similar native phones, e.g. /d/, /t/, /h/ and /g/ seem to be frequent substitutes for /ð/, /θ/, /χ/ and /ɣ/ respectively.

The effect of phonology is mainly illustrated by how the phonotactic constraints of Turkish seem to apply without exception not only in cases of hiatus resolution but

also in the resolution of onset consonant clusters. However, the actual application of possible resolution strategies may involve perceptual factors as well. For example, epenthesis and deletion seem to be the two complementary strategies of consonant cluster resolution in CT (see fn 10 above). When compared to the Marshallese figures provided in Brasington (1997: 3), (5/106 (4.7%) cases of deletion against 101/106 (95.3%) cases of epenthesis at word-initial position), CT has a higher percentage of word-initial deletion (22/92 (23.9%) cases of deletion against 63/92 (68.5%) cases of epenthesis). A possible phonological explanation could be as follows: If indeed there exists a "cost threshold" for repairs in the sense of Paradis & LaCharité (2008: 92, fn. 4), then the cost of epenthesis exceeds that of deletion because vowel epenthesis in Turkish involves three steps: (i) insertion of a high vowel, (ii) the spread of frontness/backness and roundedness features from the nearest nucleus to the inserted segment and (iii) resyllabification, while deletion involves two: (i) deletion of the illicit segment and (ii) resyllabification. In fact, consonantal deletion does not even involve resyllabification if the deleted segment appears (i) within a consonant cluster, (ii) prevocalically at word-initial (onset) position or (iii) postvocalically at word-final position. Therefore, although it leads to a less faithful preservation of the input, deletion cannot just be a last resort mechanism in CT, especially if the deleted segment is a single consonant: Indeed, 304/412 (73. 8%) of all instances of deletion in our corpus are single consonants.

Furthermore, as noted by Brasington (1997: 6), the choice between epenthesis and deletion seems to depend not only on the position but also the type of segments involved. In fact, this is where auditory factors come into the otherwise phonological picture. With respect to the type of segments, the much noted salience of /s/ is evident in CT data. Morelli (1999: 49) has noted that fricative + stop clusters are the least marked, while stop + fricative clusters are more marked although they do not violate the Sonority Sequencing Principle. Consequently, most of the fricative (/s/) + stop clusters in our corpus have been resolved through epenthesis (25/28 cases (89.3%)), while stop + fricative (/s/) clusters such as /ts/, /ks/ have undergone deletion of the less salient stop member (8/10 cases (80%)). The significance of a relative difference in sonority between the two members of the cluster is further emphasized in the case of /sf/. Moreover, Fleischhacker (2005: 41-42) notes that maximal perceptual similarity between the input and the output is obtained when anaptyxis is used in obstruent + sonorant clusters and prothesis in /s/ + stop ones. This finding is well supported by CT data: 29/33 (87.9%) of all /s/ + stop clusters exhibit prothesis, while there are 30/46 (65.2%) cases of anaptyxis in obstruent + sonorant clusters (26/31 (83.9%) in stop + sonorant clusters (/pr, tr, kl, kr/) and 4/15 (26.7%) in fricative + sonorant clusters (/θr, ðr, vr, vl, ɣr, ɣl, χr/). The remaining cases of obstruent + sonorant clusters have undergone either deletion or substitution, along with three unexpected cases of prothesis: 1 /ɣr/ and 2 /ps/.)).

Returning to the effects of position on deletion, we should note the following: Although it does not preserve the complete input melody faithfully, deletion seems to be preferable at word-final position also because word-final segments are less

perceptually salient than word-initial ones, and thus more prone to deletion due to their auditory weakness (Brasington 1997: 2, Lass 1998: 187).[16] This is especially true for the final deletion of /s/ and /n/, which are perhaps not true cases of deletion but preservation of the input: /n/ is often left unpronounced, i.e. productively weak (Holton et al. 2004: 8) and /s/ seems to have a low frequency, e.g. only 2/8 (25%) forms (Nom/sg. and Acc/pl.) end in /s/ in the example paradigm in Table 3 above. The deletion of post-stress vowels (39/44 (88.6%) and vowel + consonant sequences (28/32 (87.5%), i.e. in source words with penultimate stress, is not surprising in that respect, either. They are probably deleted not only because they are perceptually weak but also because they naturally lead to final stress in the target form after re-syllabification. Broselow (2003: 5) mentions a similar behavior in Huave (which prefers final stress like Turkish), where the material after the stressed segments in Spanish input forms is deleted, e.g. /kardúmen/ 'flock' becomes /kardúm/ among the most nativized stratum of loanwords. In other words, deletion at word-final position in CT seems to be aimed at maximal perceptual similarity – despite segmental unfaithfulness – with the additional advantage of obtaining resultant final stress out of input forms with penultimate stress.

In sum, the analysis of our corpus suggests that CT speakers do perceive the exact phonetic shape of the L2 words in fast or connected speech including allophonic variation and various articulatory conventions and tend to imitate what they hear as faithfully as possible as long as the result does not violate any L1 constraints. This shows that subphonemic details *are* relevant contra Paradis & LaCharité (2008). The fact that foreign phonemes undergo segmental and/or featural adjustment instead of being deleted at all positions seems to suggest that adaptation does not arise from the non-perception of L1 speakers with no access to L2 phonology contra the perception-only approach in Peperkamp et al. (2008).

In contrast, CT data provide support for the synthetic view. For example, there is some evidence for an "unprecedented phonetic property" which might have been introduced into CT through contact with CG. The clear /l/ sometimes occurs in the environment of back vowels, thus violating palatal vowel harmony: In 10 (*usbur-dulla*), 12 (*loggo*), 17 (*langara*), 28 (*publa*) and 53 (*gavlo*), the unmarked allophone would have been the dark /l/, i.e. [ɬ].[17]

[16] Auditory weakness is probably the reason behind the elision of unstressed vowels as well. However, there seems to be no apparent auditory reason for the deletion of various heterosyllabic sequences which might be considered unnecessary adaptations probably arising from CT-internal assimilatory processes such as vowel and consonant harmony, intervocalic voicing, or palatalization which might have affected the established loanwords (Paradis & LaCharité 2008: 117), which possibly exist in different strata, obeying distinct constraints (Broselow 2003).

[17] In ST also there are a few loanwords where the clear /l/ occurs unexpectedly, e.g. *gol-ler* /gol.le̞r/ **gol-lar* 'goals', *depoyu ful-le-* /fʊl.le̞/ **ful-la-* 'make the petrol tank full.' Further

Furthermore, CT speakers seem to aim at maximal perceptual similarity in the sense of Kang (2003) and Kenstowicz (2007) by retaining the perceptually salient input segments. As noted by Kang (2003), phonemic, phonetic and morphophonemic factors seem to interact in loanword adaptation. In fact, the following speculative comments are suggestive of the possible effect of a morphological factor in our data: As was mentioned above, there are many (vowel +) /s, n/ sequences deleted at word-final position. It turns out that these sequences are often declension markers. Here, the constraints of Turkish and Greek languages seem to be converging in a sense. Turkish looks for a base form to which nominal suffixes may be added agglutinatively. As for Greek declension, it is not only highly irregular in comparison to the Turkish morphology but also functionally redundant in a target language like Turkish (§2 above). With respect to nominal morphology, deletion seems a way to treat inflectional Greek nouns agglutinatively.[18] The same tendency is observed in Greek verbal morphology as well. For example, in 37 (*sürdis, surdis*) and 53 (*gavlo*), the final /o/ in the source words, which is the verbal inflection marker (first person singular, present imperfective tense), has been deleted during category change from a verb to a noun despite the lack of any obvious phonological motivation.[19]

In conclusion, the data discussed above have shown that segmental deletion is a common strategy in the phonological adaptation of CG loanwords in CT, which has affected 45.5% of the corpus. Segmental deletion in CT seems to be governed by an

research is required both in ST and CT to determine whether this behavior is idiosyncratic or it possibly correlates with the speakers' familiarity with L2 phonology.

[18] While the first author of the present paper (who did not know a word of Greek then) was in Cyprus, she kept hearing [cip.ro, cip.ri, cip.ru], etc. on TV or the radio, knowing that the sequence [cipr-] referred to 'Cyprus' and naively wondering which one of those was the base form listed in the dictionary. What she had done was to impose Turkish assumptions about morphology on Greek: There is a (Nominative) base form to which regular suffixes are added to show case and number. We believe that CT speakers with no formal Greek instruction might similarly have constructed a mental representation of Greek words reduced to the barest possible distinctive form. On the other hand, bilingual CT speakers who were well aware of the morphological differences between the two languages may have reinforced this naive tendency by consciously stripping off Greek declensional morphology and adding Turkish suffixes when they used them in Turkish sentences. Therefore, we cannot talk about the inability of CT speakers to perceive the Greek speech signals but about an attempt to reach a base form to inflect in the Turkish way by simply eliminating morphological redundancy.

[19] Brasington (1997: 14) suggests that deletion may be preferred "either when costs exceed the cost threshold or when benefits drop below the benefit threshold." In CG loanwords in CT, deletion at word-final position is not costly because such sequences are not perceptually salient anyway, and it is also very beneficial because in this way the redundancy in borrowing foreign inflectional morphology is avoided.

attempt to achieve maximal perceptual similarity between the input and output forms provided that L1 phonological constraints, especially in the case of illicit consonant clusters in the onset position, are fully satisfied and the perceptually salient segments of the source words are preserved.

Theoretically, this suggests that loanword adaptation in CT is an attempt to "match the non-native percept of the L2 input within the confines of the L1 grammar" (Yip 2006: 950), in support of the synthetic approach mentioned above. The actual production of target forms seems to be governed by a hierarchy of L1 grammar constraints whereby some contrasts may be prioritized over others (Yip 2006: 971). In CT, syllable structure constraints seem to rank higher than segmental, featural and sometimes prosodic constraints. However, the actual details of such a hierarchy of constraints require an exhaustive analysis of the data with focus on adaptation strategies other than deletion and thus are beyond the scope of the present paper.

Another unresolved issue is the influence of the sociolinguistic situation in Cyprus. In a four-century-long contact, it is hard to test the argument that bilinguals rather than monolinguals are responsible for phonological adaptation (Paradis & LaCharité 2008). We suggest that in cases like that of CT, it would be more interesting to turn to the actual phonological and acoustic characteristics of the adapted structures rather than to the linguistic competence of the initial borrowers to account for some "mysterious" adjustments. It is highly likely that loanword adaptation is "structure-sensitive" such that borrowers select a phonological strategy in one case and a perceptual one in another based on the relative strength of constraints involved in each case. For example, in CT /pr/ clusters are resolved through epenthesis but not deletion. In fact, they may even be left intact (e.g. 11a-b (*bruncollos*, *buroncolas*, *boroncoles*)). On the other hand, /ts/ clusters only allow deletion or substitution but no "importation" of the source form (e.g. 13 (*samarella*)). It would be hard to account for this difference just by the level of bilingualism or "naive" vs. "intentional" approximation in the sense of Paradis & LaCharité (2008). In fact, it is also highly likely that the relative strength of constraints is determined by universal acoustic properties. In a similar vein, Shinohara (2006) suggests that deletion patterns are linked to relative acoustic and auditory salience of certain segments and that universal perceptibility scales interact with the grammar of each language. Further research is required to determine the nature of such scales in CT specifically, along with loanword adaptation strategies in general in other varieties of Anatolian Turkish or other Turkic languages.

References

Arvaniti, Amalia 1999. Cypriot Greek. *Journal of International Phonetics Association* 29: 173-178.

Arvaniti, Amalia 2006. Linguistic practices in Cyprus and the emergence of Cypriot Standard Greek. *San Diego Linguistic Papers* 2, 1-24.

Brasington, Ron 1997. Cost and benefit in loanword adaptation. In: Huang, Yan & Ingham, Richard & Kerswill, Paul & Shockey, Linda (eds.) 1997. *Reading Working Papers in Linguistics 3*. Department of Linguistic Science, University of Reading. 1-19.

Broselow, Ellen 2003. Language contact phonology: Richness of the stimulus, poverty of the base. In: Moulton, Keir & Wolf, Matthew (eds.) *Proceedings of the North East Linguistic Society 34*. Stony Brook University. Amherst: GLSA. 1-21.

Fleischhacker, Heidi 2005. Similarity in phonology: Evidence from reduplication and loan adaptation. Ph.D. Dissertation in Linguistics, University of California.

Holton, David, Mackridge, Peter & Philippaki-Warburton, Irene 2004. *Greek: A comprehensive grammar of the modern language*. London: Routledge.

Kabak, Barış 2007. Hiatus resolution in Turkish: An underspecification account. *Lingua* 117, 1378-1411.

Kabak, Barış & Vogel, Irene 2001. The phonological word and stress assignment in Turkish. *Phonology* 18: 315-360.

Kabataş, Orhan 2007. *Kıbrıs Türkçesinin etimolojik sözlüğü*. [An Etymological Dictionary of Cypriot Turkish] Ankara: Öncü Basımevi.

Kang, Yoonjung 2003. Perceptual similarity in loanword adaptation: English postvocalic word-final stops in Korean. *Phonology* 20, 219-273.

Kenstowicz, Michael 2007. Salience and similarity in loanword adaptation: A case study from Fijian. *Language Sciences* 29, 316-340.

Lass, Roger 1998. *Phonology: An introduction to basic concepts*. Cambridge: Cambridge University Press.

Morelli, Frida 1999. The phonotactics and phonology of obstruent clusters in Optimality Theory. Ph.D. Dissertation in Linguistics, University of Maryland at College Park.

Newton, Brian E. 1967. The phonology of Cypriot Greek. *Lingua* 18, 384-411.

Newton, Brian E. 1972. *The generative interpretation of dialect: A study of Modern Greek phonology*. Cambridge: Cambridge Univ. Press.

Paradis, Carole & LaCharité, Darlene 2008. Apparent phonetic approximation: English loanwords in Old Quebec French. *Journal of Linguistics* 44, 87-128.

Peperkamp, Sharon & Vendelin, Inga & Nakamura, Kimihiro 2008. On the perceptual origin of loanword adaptations: Experimental evidence from Japanese. *Phonology* 25, 129-164.

Saracoğlu, Erdoğan 2004[3]. *Kıbrıs ağzı*. [The Turkish Cypriot Dialect]. Nicosia: Ateş Matbaası.

Shinohara, Shigeko 2006. Perceptual effects in final cluster reduction patterns. *Lingua* 116, 1046–1078.

Terkourafi, Marina 2001. Politeness in Cypriot Greek: A frame-based approach. Ph.D. Dissertation in Linguistics, University of Cambridge.

Yangullis, Konstantionos Gh. 2002. *Thisavros Kipriakis dhialektu–Thesaurus dialecti Cypriae*. Nicosia: S. Livadhioti Ltd.

Yip, Moira 2006. The symbiosis between perception and grammar in loanword phonology. *Lingua* 116, 950–975.

Zimmer, Karl & Orgun, Orhan 1999. Turkish. In: *Handbook of the International Phonetic Association: A Guide to the use of the International Phonetic Alphabet*. 154-156. Cambridge: Cambridge University Press.