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Loanblends in the speech of Greek heritage speakers: a corpus-based lexicological approach

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Abstract

Found in situations of language contact between Greek and English, Greek heritage speakers living in the US, Canada, Australia, etc. produce loanblends, which combine an English stem e.g. *fence* and a Greek affix e.g. *-ι*, as in *fénsi* ‘fence’. These loanblends are very frequent contact-induced formations that have become part of the Heritage Speakers’ everyday language usage. This study analyses fifty (50) such loanblends found in the Greek Heritage Language Corpus, which contains data from Greek Heritage Speakers living in Chicago, US, tests the borrowability scale constraint and the unmarked gender hypothesis for loanwords, and discusses the lexicographic protocol for the compilation of an online dictionary of loanblends of Greek Heritage Speakers.

Keywords: loanwords, loanblends, Greek Heritage Language, borrowability scale, gender assignment, unmarked gender

1 Introduction

Heritage language speakers are individuals “who have been exposed to a particular language in childhood but did not learn it to full capacity because another language became dominant.” (Polinsky & Kagan 2007). The term Heritage Language, on the other hand, is used for languages of diasporic communities, especially ones with a history of migration, which are spoken by simultaneous or sequential early bilinguals, the heritage speakers (HSs), who are typically the children of immigrants and are usually bilingual in the dominant language of the host country and the heritage language to varied degrees. HSs grow up acquiring the language of their parents’ country of origin at home until they start school, at which time they begin to acquire the language of the host country. Gradually, they become dominant and more fluent in the majority language, limiting the use of the heritage language to the interaction with family and friends from the same ethnolinguistic background (Benmamoun et al. 2013; Karatsareas 2018). The incomplete acquisition of the heritage language, possible subsequent attrition, and interference from the majority language gradually lead to the formation of new heritage grammars and vocabularies characterized by innovations (Karatsareas 2018). This phenomenon is reinforced by code-switching (CS), the phenomenon of alternating between two or more languages in conversations, in a clause, a discourse segment, or on the word-internal level (intra-word CS) (Mager et al. 2019).

This paper reports the results of the project entitled *Varieties of Greek as Heritage Language* (HEGREEK, MIS 5006199) which aimed at profiling Greek heritage speakers (GHSs) living in the US and Russia as well as at collecting data for the compilation of the open-access online Greek Heritage Language Corpus (GHLC). It focuses on loanblends used by GHSs from the US, extracted from the GHLC, and offers quantitative data about gender assignment, grammatical category frequency and adaptation strategies used. It finally elaborates on the principles of a lexicographic protocol for the compilation of an online dictionary of loanblends which could include data of various pairs of languages in contact.

The paper starts with the literature review focusing on loanblends found in the speech of Greek heritage communities, the borrowability scale constraint, morphological adaptation in borrowings, gender assignment, the unmarked gender hypothesis and the classification of loanwords in semantic fields. It then describes the methods of the study: the data about the sample, the methodology adopted, the principles of data analysis, the results yielded, and the discussion of the main findings. The next part offers the lexicographic protocol for the compilation of an online dictionary for the loanblends of GHSs. Finally, the conclusion summarizes the main findings, provides cues for further investigation and addresses the limitations of the study.

2 Loanblends used by GHSs

Loanblends are borrowings that combine bound morphemes from two languages as in *fénsi* ‘fence’, where there is a combination of the English stem *fence* and the Greek inflectional affix *-ι*, in *matrmátzi* ‘mattress’ which combines the German stem *Matratze* and the Greek inflectional affix *-ι* or in *runeando* ‘running’ which combines the English stem *run* and a Spanish affix *-eando*. Sometimes the basis can be a collocation as in *biloziri* (below zero+ι) ‘below zero’ or a part of a compound as in *ófi* ‘day-off’. Considering Corbin’s (1987) tripartite categorization of words, we claim that loanblends

are [-constructed, + structured] formations since no construction rule can be applied synchronically in Greek.

Following Haugen's (1950) typology on borrowings, loanblends are types of borrowings in which only part of the phonemic shape of the word has been imported, while a native portion has been substituted for the rest. Actually, contrary to loanwords which show only morphemic importation, loanblends show morphemic substitution as well as importation. In literature, these formations are treated either as types of code-switching (Gardner-Chloros 2009), cases of loanwords (Karatsareas 2019, Alvanoudi 2019) or word-internal language mixing governed by the Free Morpheme constraint which predicts that a switch may not occur between a bound morpheme and a lexical form unless the latter has been phonologically integrated into the language of the bound morpheme (Poplack 1980, Alexiadou & Lohndal 2018). Alvanoudi (2019) uses the term *derivational blends* to refer to such constructions, even though they are rarely constructed through derivation.

Seen from a functional perspective, loanblends like the ones studied in this paper are used to fill vocabulary gaps of heritage speakers who find it easier to use stems from the majority language, in which they are generally more proficient, and affixes from their HL, when they produce speech in the heritage language. In situations of contact between English and Greek, since English does not mark grammatical gender, an obligatory feature in Greek, the above combination becomes an efficient vocabulary compensation strategy for overcoming lexical gaps in Greek by assigning grammatical gender to English words through the addition of a Greek affix. The loanblend and the equivalent native word with the same meaning form couples of words (e.g. *bóksi-koutí* 'box', *tséci-tsek* 'check', *káro-aftocínito* 'car', *blóci-ikodómikó tetrágono* 'block', *bascéta-kaláthi* 'basket') that co-exist with a different distribution in communication, since native speakers never use loanblends, while heritage speakers mainly use them but may also more rarely use native words.

Greek or Cypriot-Greek loanblends have been previously studied from a sociolinguistic (Gardner-Chloros 2009, Alvanoudi 2019, Karatsareas 2019) or a morphosyntactic perspective (Alexiadou 2011, 2017, Matejka-Hanser 2011). Gardner-Chloros (2009: 49), investigating Greek Cypriots in London, considers such formations as English words, mainly nouns, that were adopted and morphologically/phonologically adapted to the Greek Cypriot Dialect, either for referring to new concepts connected to the British culture (e.g. *φισιάτικο* 'fish and chips shop'), or for replacing native words for the sake of facility, as happens in the case of the word *marcéta* 'market'. Alvanoudi (2019) analyses 31 derivational blends (as she calls these formations) used by immigrants in Cairns, Queensland (Australia) and maintains that they are, phonologically and morphologically integrated into Greek, core borrowings given that they duplicate elements that Greek already possesses. She also argues that "such loanwords are perceived by friends and relatives in Greece as indexes of otherness, that is their Greek Australian identity" (Alvanoudi 2019:42). Karatsareas (2019: 154), on the other hand, studying Cypriot Greek as a heritage and community language in London, claims that "this type of lexical borrowing is labelled Genglish and is associated, especially among second- and third-generation speakers, with low socioeconomic status and low level of education". Alexiadou (2017) discusses examples found in Fotopoulou (2004) and Gardner-Chloros (2009) and claims that "the borrowed nouns have become active members of the speakers' vocabulary, because they are assigned one of the Greek declension classes, as determined by the overall sentence context" (Alexiadou 2011:46) and that in cases where a combination of a root from one language with a functional morphology from another is not allowed this happens because "the language mode of the speaker suggests that the functional morphology should come from the language with overt default realization or because morpho-phonological reasons rule out the particular mixing in question" (Alexiadou 2017:13). Finally, Matejka-Hanser (2011: 88) studies 12 loanblends from Greek spoken by Greek-Americans of Chicago and observes that "in most cases the Standard Greek variants are morphologically more complicated and phonologically more difficult (for non-natives) than the loanwords. This fact might point towards language economy as motivation for the borrowing." No previous studies have investigated so far loanblends from a lexicological-lexicographic point of view.

3 The Borrowability scale constraint

Previous literature laid special emphasis on the investigation of linguistic properties that facilitate or even promote borrowing (Matras 1998, Matras & Sakel 2007, Haspelmath 2008, Matras 2011). The authors concluded that there are borrowability scales or hierarchies that can be interpreted in four different ways:

- (i) **Temporal:** A language borrows elements on the left before it borrows elements further to the right.
- (ii) **Implicational:** A language that contains borrowed elements on the right also contains borrowed elements further to the left.
- (iii) **Quantitative:** A language borrows more elements belonging to the types on the left than elements belonging to the types further to the right.
- (iv) **Probabilistic:** Elements belonging to the types on the left are more likely to be borrowed than elements further to the right. (Haspelmath 2008: 6)

The borrowability scale is one of the most important types of constraints for borrowing, predicting which morpheme type or part of speech is borrowed more easily. In particular, crosslinguistic data show that lexical items are more easily borrowed than grammatical items, unbound morphemes are more easily borrowed than bound morphemes, content words are more easily borrowed than function words, nouns are more easily borrowed than verbs or adjectives (Thomason & Kaufman 1988, Van Hout & Muysken 1994, Field 2002, Myers-Scotton 2002). There are no previous studies focusing on

loanwords in Greek which investigate whether the borrowability scale constraint is valid in the case of Greek language data.

4 Morphological adaptation of borrowings

When words are borrowed from other languages, these words are phonologically and morphologically adapted according to the sound and morphology of the recipient language. Moreover, when a borrowing enters a certain word class in a recipient language, it should acquire all features of that word class (or the features of respective subclasses, if they are distinguished). This means that, for example, in the case of Greek, a new member of the nominal category should be able to express case, number and gender or a new member of the verbal category should mark person, number, tense, modality, aspect, etc. Languages use different adaptation strategies to assign loanwords to specific word classes and conform them with the morphological system of the recipient language. However, the degree of adaptation may vary, depending on the time of the introduction of the borrowing into the receiving language, the possible multilingualism of recipient language speakers or their stance towards the donor language (Haspelmath 2009).

The strategies adopted for the morphological adaptation of loanwords are complex, language-dependent and include, in general terms, the following (Haspelmath 2009, Matras 2009, Pakerys 2016):

- (i) **Zero morphological adaptation:** In some cases, borrowings are not adapted in the recipient language, resulting in indeclinable words in cases of inflected languages like Greek, e.g. *tsek* ‘check’, *snítzel* ‘schnitzel’, *reportáz* ‘reportage’, *kolxóz* ‘kolkhoz’.
- (ii) **Addition of inflectional affixes / assignment to an inflection class:** e.g. *gázi* ‘gas’.
- (iii) **Addition of derivational suffixes or class markers:** e.g. *provokáro* ‘provoke’, *flertáro* ‘flirt’, *buniá* ‘bunch’.
- (iv) **Truncation of a derivational suffix:** e.g. *tenístas* (**tenisístas*) ‘tennis player’.

Anastassiadis (1994) investigated morphological adaptation in Greek loanwords and classified borrowings in two classes: +adapted e.g. *imresionismós* ‘imressionism’, and -adapted: e.g. *traktér* ‘tractor’. No previous studies have investigated so far in detail morphological adaptation in Greek loanblends.

5 Gender assignment in borrowings

Gender is an inherent feature of the nominal category and it can be predicted from semantic information stored in the lexical entry or from morphophonological characteristics (Anastassiadis & Mitsiaki 2012). Gender assignment, on the other hand, is one of the most common procedures for word morphological adaptation. According to Haspelmath (2009: 42), “languages with gender and inflection classes need to assign each word to a gender and inflection class, so that it can occur in syntactic patterns which require gender agreement or certain inflected forms”. To achieve that, each language develops systematic mechanisms for gender assignment that can be tested and verified by studying the frequency of prototypical cases, gender assignment in loanwords, neologisms or pseudowords and data from language development.

Greek has a three-gender system, classifying nouns in masculine, feminine and neuter according to the word ending vowel (inflectional ending), which “reflects a fusion of the grammatical categories of case (nominative, genitive, accusative, vocative) and number (singular, plural)” (Anastassiadis & Mitsiaki 2012: 190). Based on frequency, developmental or semantic criteria, Anastassiadis (1994), Kavoukopoulos (1996) and Anastassiadis & Chila (2003) maintain that neuter is the default gender in Greek. This claim is further supported by empirical data provided by Tsimpli (2011) and Tsimpli & Hulk (2013) which showed: a) that neuter is used during language acquisition and is also the learner default gender and b) that neuter is the default gender “on the grounds of syntactic distribution in contexts where gender agreement is inert” (Tsimpli & Hulk 2013: 138).

Anastassiadis & Chila (2003) consider the semantic feature of animacy (-/+animate) and the morphological criterion of ending vowels as the defining factors for prototypicality in gender assignment. The authors consider as prototypically masculine nouns all masculine animate nouns ending in *-s* e.g. *patéras* ‘father’, and non-prototypical the non-declinable masculine animate nouns e.g. *komándo* ‘commando’ and inanimate nouns e.g. *kompjúter* ‘computer’ or -animate nouns ending in *-s* e.g. *uranós* ‘sky’. Prototypically feminine nouns are feminine animate nouns (e.g. *jajá* ‘grandmother’, *nífi* ‘bride’, *nixú* ‘manicurist’) or feminine inanimate nouns ending in *-a*, *i* and *u* (e.g. *enérjia* ‘energy’, *alají* ‘change’) and non-prototypical all feminine nouns referring to masculine entities, e.g. *frurá* ‘guard’ or those that are indeclinable e.g. *béibisíter* ‘baby sitter’. Finally, prototypically neuter are all inanimate nouns, all neuter nouns ending in *-o*, *-i* and *-a* and all indeclinable nouns. Non prototypical neuters are inanimate neuters ending in *-n* or *-s* (e.g. *méros* ‘place’, *mélon* ‘future’) or animate indeclinable neuters e.g. *garsón* ‘waiter’. Table 1 (taken from Anastassiadis & Chila (2003: 34)) presents the prototypical characteristics for each gender:

Grammatical gender	Masculine	Feminine	Neuter
Natural gender	male	female	Ø or male/female
Ending vowel	-s	-a	-o
		-i	-i
		-u	-a
			Non declinable

Table 1: Prototypical Standard Modern Greek gender system

Poplack et al (1982:11) elaborate on the factors responsible for gender assignment in borrowed nouns. They claim that these factors include:

- (i) The physiological sex of (animate) referent, in other words the natural gender divided in masculine and feminine;
- (ii) The phonological gender, depending on the qualities of word endings (e.g. in Greek, nouns ending in -a are prototypically feminine; for a detailed account of gender prototypicality in Greek see Anastassiadis-Symeonidis & Markopoulou-Chila (2003));
- (iii) The analogical gender, which relates the gender assigned to the borrowing with the gender of a semantically equivalent word or a hyperonym in the recipient language (e.g. *járða*_[fem] / *avlí*_[fem] ‘yard’, *argó*_[fem] / *the language*_[fem] *argó* ‘slang’);
- (iv) Homophony, in other words the gender assigned to words having a homophone suffix (e.g. *gazolíni* ‘gasoline’, *grosaría* ‘grocery’);
- (v) Suffixal analogy.

Anastassiadis (1994: 94) on her part, builds on Poplack et al. (1982) and proposes five general rules for gender assignment to borrowings, considering two basic criteria, [-/+ animate] and [-/+ adapted]:

- 1st rule:** A [+animate] noun in the donor language will be included in the equivalent gender in the recipient language irrespectively of its degree of adaptation, e.g. *metr*_[masc] ‘master chef’, *mazoréta*_[fem] ‘cheerleader’;
- 2nd rule:** A [-animate] [-/+adapted] noun will be assigned in recipient language the gender that this element has in donor language under certain conditions (marked gender in L1 and L2, sociolinguistic parameters, etc.), e.g. *kuáf*_[fem] (Fr. la coiffe) ‘coiffe’, *agráfa*_[fem] (Fr. L’agraffe) ‘buckle’ (interlinguistic analogy);
- 3rd rule:** If the conditions of the 2nd rule are not fulfilled, the [-animate] [-/+adapted] noun will be assigned in neuter gender, e.g. *test*_[neut] ‘test’, *tsekáp*_[neut] ‘checkup’, *Ji*_[neut] ‘mistletoe’;
- 4th rule:** The [-animate] [+adapted] nouns comply with the gender of the items of the inflectional class in which they are included, e.g. *bufés*_[masc] ‘buffet’ (morphological analogy);
- 5th rule:** The [-animate] [-adapted] nouns can be assigned the gender of a quasi-synonym or hyperonym in the recipient language.

Gender instability in inanimate adapted loanwords (e.g. *kolié*_[neut]/*koliés*_[masc], *sinemá*_[neut]/*sinemás*_[masc], *stiló*_[neut]/*stilós*_[masc]) is the result of a two-stage morphological adaptation: at the first stage, loanwords enter Greek as neuter indeclinable nouns, while at the second they are fully adapted to the morphological system (Anastassiadis 1994).

According to Poplack et al. (1982), the unmarked or default gender is attributed to borrowings. With the exception of Anastassiadis (1994), no previous research has investigated gender assignment mechanisms or the unmarked gender hypothesis in Greek borrowings in general or in Greek loanblends.

6 Classification of loanblends in Semantic fields

Tadmor (2009) maintains that the semantic field to which a word belongs affects the probability for that word to be borrowed. In other words, certain semantic fields are better candidates for borrowing than others. For instance, semantic fields like ‘Religion and belief’, ‘Social and political relations’, ‘Clothing’ or ‘The house’ correspond to domains which have been affected by intercultural influences (Tadmor 2009: 64). These fields are more prone to borrowing. On the other hand, semantic fields like ‘Sense perception’ or ‘Spatial relations’ are least amenable to borrowing since practically every language is expected to have indigenous words for such concepts.

In order to compile a comparable sample with crosslinguistic data on lexical borrowing, Haspelmath & Tadmor (2009) in their study *Loanwords in the languages around the world* compiled a fixed list of 1460 lexical meanings assigned in the following 24 semantic fields: ‘The Physical world’, ‘Kinship’, ‘Animals’, ‘The body’, ‘Food and drink’, ‘Clothing and grooming’, ‘The house’, ‘Agriculture and vegetation’, ‘Basic actions and technology’, ‘Motion’, ‘Possession’, ‘Spatial relations’, ‘Quantity’, ‘Time’, ‘Sense perception’, ‘Emotions and values’, ‘Cognition’, ‘Speech and language’, ‘Social and political relations’, ‘Warfare and hunting’, ‘Law’, ‘Religion and belief’, ‘Modern world’, ‘Miscellaneous function

words’.

Gavriilidou (2018) investigated the distribution of Russian borrowings in Greek into the above-mentioned semantic fields. With the exception of that study, no other research up to date has been conducted on how borrowings, in general, or loanblends, in particular, are classified into different semantic fields.

7 Aims and hypotheses

Taking into consideration the gaps in previous literature, as shown in the literature review, in this paper we investigate:

- i) whether the borrowability scale (hierarchy) constraint is supported by our data. In line with the literature on borrowability scales and hierarchies (Matras 2007, Haspelmath 2008), we expect that nominal loanblends from our corpus will exceed in numbers the verbal ones;
- ii) how strategies of morphological adaptation of loanblends are attested in our sample. Based on the literature on morphological adaptation of borrowings, we investigate whether the four different adaptation strategies proposed in Pakerys (2016) concern loanblends. Given that loanblends are combinations of an English stem with a Greek affix, we expect to find three different types in our sample: a) a combination of an English stem and an inflectional affix, b) a combination of an English stem and a derivational affix, c) a combination of an English stem and a class marker;
- iii) how our data are distributed in grammatical genders and whether the unmarked gender hypothesis for borrowings is validated by the data. Taking into consideration Anastassiadis (1994), we expect to find more neuter nouns. We also expect that our data belong to prototypical inflectional classes of each gender.
- iv) which gender assignment factors operate with loanblends found in our corpus;
- v) how data are distributed in the fixed list of semantic fields of Haspelmath & Tadmor (2009).

8 Methods

8.1 Data

Fifty (50) loanblends were extracted from the Greek Heritage Language Corpus (GHLC) and more precisely from the Chicago sub-corpus. GHLC is a speech corpus developed at Democritus University of Thrace, Greece within the frame of the project *Varieties of Greek as Heritage Language* (HEGREEK, MIS 5006199) and is available at <http://synmorphose.gr/index.php/el/projects-gr/ghlv-gr/corpus-gr>. It is one of the very few corpora containing heritage language data.

It consists of 1st, 2nd, and 3rd generation Greek Heritage Language Speakers’ oral productions, elicited from the interviews of 37 GHLSs from Russia (Moscow and Saint Petersburg) with Russian as their dominant language, and 32 GHLSs from the US (Chicago) with L1 English. In particular, the GHLC includes approximately 130,000 words (20,000 from Moscow, 25,000 from Saint Petersburg, and 85,000 from Chicago) and approximately 90 hours of recordings (30h from Moscow, 30h from Saint Petersburg, and 30h from Chicago). It contains: (a) audio recordings, (b) transcriptions of the recordings with metadata.

Considering issues raised in previous literature (Matras 2007) about the comparison of frequency-based hierarchies drawn from conversational data like the ones in GHLC, we chose not to study loanblends in terms of token or type frequency but in absolute numbers. This is the reason our study is based on the above mentioned 50 loanblends extracted from the corpus.

Data were extracted from the corpus and ordered according to linguistic information, specifically gender (masculine, feminine, neuter), grammatical category (noun vs. verb), declination code (we used the codes adopted in the Dictionary of Standard Modern Greek), mode of construction (stem+addition of inflectional affix vs. stem+addition of class marker), ending vowel, semantic information, gender assignment procedure (see 5 above), meaning in Greek and English.

8.2 Results and discussion

Data analysis provided answers to the working hypotheses set in 6, based on a detailed literature review. In this section of the paper, we present our findings and discuss them with respect to the results found in previous studies.

The Borrowability scale constraint

Out of 50 loanblends, only three (3) were verbs (1,5%) and the rest forty-seven 47 (98,5%) were nouns. This finding confirms our hypothesis that nominal loanblends of our corpus would exceed in number the verbal ones and offers a strong argument about the borrowability scale constraint (Matras 2007, Haspelmath 2008), which predicts that nouns are borrowed before verbs (temporal interpretation), are more likely to be borrowed than verbs (probabilistic interpretation), are more frequently borrowed than verbs (quantitative interpretation), and that their borrowing is a precondition for the borrowing of verbs (implicational interpretation) Haspelmath (2008). In our data no adjectival loanblends have been attested.

According to (Van Hout and Muysken 1994: 42), nouns exceed verbs in number because of the referential role they play

in comparison with verbs or adjectives and given that “one of the primary motivations for lexical borrowing is to extend the referential potential of a language”.

Strategies of morphological adaptation

According to this criterion, two strategies of morphological adaptation and consequently two types of loanblends were attested in our sample:

- i) those constructed by the addition of an inflectional affix to a borrowed lexical root as in *tráci* ‘truck’, *bóksi* ‘box’, *karpéta* ‘carpet’, *rífi* ‘roof’, *sáina* ‘sign’, *járða* ‘yard’ (Class 1), and
- ii) those created by the addition to a borrowed root of a derivational suffix-like ending as in *farmaðóros* ‘farmer’, *grosaría* ‘grocery’, *musikános* ‘mucisian’, *ruffjános* ‘roof-maker’, *muváro* ‘move’, *frízzázo* ‘freeze’ (Class 2). These nouns have a complex structure without a compositional meaning, in the sense that only the borrowed lexical root contributes to meaning formation, while the suffix-like ending is a pseudo-suffix without any semantic instruction, functioning exclusively as a class marker or paradigmatic integrator (Corbin 1987, 1991). It is important to note here that class markers copy the form and the intrinsic properties of a derivational suffix and their selection is not arbitrary.

From the 50 items of our corpus, 38 (76%) belonged to class 1 and only 12 (24%) to class 2, suggesting that morphological adaptation of loanblends demonstrates a strong preference for the inflectional and not the derivational procedure. However, all verbal loanblends belonged to class 2 and were constructed with the class marker was *-áro* (e.g. *muváro* ‘move’). Standard Modern Greek has only two verb inflectional affixes: *-o* [o] (basic class) and *-ó* [o] (reduced class). Borrowed verbs enter Greek morphological system exclusively with the addition of a class marker (mainly *-áro* and marginally *-iázo*). As put by Anastassiadis & Masoura (2012), class marking regulates both diachronically and synchronically the Modern Greek verbal system.

As expected, no cases of zero morphological adaptation or truncation of a derivational suffix were attested in our sample. However, no cases of addition of a derivational suffix were found either, contrary to what was initially predicted. This probably happens because the role of the suffix used in loanblends is to assign the loanwords into a grammatical category and referential class or, in other words, to permit the borrowing to conform morphologically to a certain word-class and function as a member of a certain lexico-morphological subgroup and not to convey a specific semantic information. On the other hand, derivational suffixes are semantically transparent for gender since they provide semantic information (combined with formal indications) which is not needed in the case of loanblends. This finding needs to be validated with more data.

The Unmarked gender hypothesis for borrowings

Fifty-two percent (52%) of our data are neuter, 26% feminine and 16% masculine. Taking into consideration the fact that the unmarked or default gender of a language is attributed to borrowings (Poplack et al 1982), the high frequency of neuter in loanblends provides evidence for supporting that neuter is the default/unmarked gender in Greek.

Furthermore, the study of our sample showed that gender assignment in loanblends of Greek heritage speakers seems to operate according to whether the loanblend is animate or inanimate. In case of animate referents, the natural gender (masculine vs. feminine) is marked, e.g. *bósis* ‘boss’ vs. *bosína* ‘female boss’, *musikános* ‘musician’ vs. *musikána* ‘female musician’. In case of inanimate nouns, gender is attributed to the loanblends:

- i) in analogy with the gender of a host language semantic equivalent (analogical gender), e.g. *kéci* ‘cake’/kéik_[neut] ‘cake’, *kontráto/simvóleo*_[neut] ‘contract’, *káro/aftocínito*_[neut] ‘car’,
- ii) in phonological analogy, e.g. *bíli* ‘bill’, *sáina* ‘sign’,
- iii) in suffixal analogy, e.g. *gasolini* ‘gasoline’, *grosaría* ‘grocery’, *markéta* ‘market’ where the suffixes *-ini*, *-aría*, *-éta* are feminine in Greek,
- iv) in combination of (i) and (iii) e.g. *karpéto* ‘carpet’, *marcéta* ‘market’. In this last word both the suffix *-éta* and the gender of the host language semantic equivalent *ayorá* ‘market’ condition the feminine gender.

The frequency of cases of each gender-assigning factor attested in our sample is presented in Table 2 below.

Type of adaptation	Frequency of cases %
Natural gender	21,5
Analogical gender	40
Phonological analogy	21,5
Suffixal analogy	8,5
Combination	8,5
TOTAL	100

Table 2: Factors of gender assignment in Greek loanblends

From Table 2 it becomes obvious that the most frequent factor for gender assignment in Greek loanblends is the analogical gender of a semantic equivalent in the recipient language. This finding is in line with Poplack et al. (1982:24) who found that the analogical gender has a “large and pervasive effect” in gender assignment in Puerto-Rican Spanish and French and has to be verified with psycholinguistic experiments investigating data from other borrowing categories as well.

The prototypicality-based analysis of our data revealed that, without exceptions, all loanblends fell within the prototypical Standard Modern Greek gender system as described in Anastassiadis & Chila (2003) (see table 1). More specifically, all masculine nouns were animate in -s (*bósis* ‘boss’, *séfis* ‘chef’, *farmadóros* ‘farmer’), and all inanimate nouns were neuter ending in -i, e.g. *fláti* ‘flat’, *tikéto* ‘ticket’, *xadóci* ‘hot dog’ (18 cases) or in -o, e.g. *káro* ‘car’, *karpéto* ‘carpet’ (5 cases). As far as feminine loanblends are concerned, feminine inanimate nouns ended in -a, e.g. *fríza* ‘freezer’, *stófa* ‘stove’, *basíkla* ‘bicycle’ (10 cases) and only in one case in -eta, (Η,η) (*γκαζολίνη* ‘gasoline’), while there were two cases of feminine animate blends (*musikána* ‘female musician’, *bosína* ‘female boss’). This finding provides strong support to Anastassiadis & Chila’s (2003) prototypicality principle in gender assignment and their model of masculine, feminine and neuter prototypical gender specification in Greek and suggests that the prototypicality principle operated also in borrowing and specifically in loanblends.

Finally, no cases of gender instability between neuter, on the one hand, and masculine and feminine, on the other, were found in our sample, indicating that neuter loanblends do not undergo morphological pressure towards masculine or feminine gender and consequently there is no gender change in progress in this restricted subset of vocabulary. This finding is a supplementary argument for claiming that neuter is prototypically the default gender in borrowings. In other words, the prototypicality and unmarkedness of neuter in loanblends ensures gender stability.

Distribution of loanblends in semantic fields

Given that loanblends found in our sample are commonly used in everyday communication between GHSs, we deemed necessary to investigate the most frequent semantic fields in which the sample is classified in order to test whether the borrowing rate by semantic field hypothesis by Tadmor (2009) can be validated by our data and check whether Greek loanblends used by GHSs fall within the semantic fields more affected by borrowing. To do so, we adopted the Haspelmath & Tadmor (2009) 24-item semantic fields classification scheme and classified our sample semantically in the following of the 24 categories. The results are presented in Table 3.

Semantic Field	Borrowing rate in the present sample %	Borrowing rate in World Loanword Database % (Tadmor 2009: 63)
Modern World	61	42,5
The house	22	37,2
Food and drink	15	29,3
Agriculture and vegetation	2	30
TOTAL	100	-

Table 3: Loanblend borrowing by semantic field

As shown in Table 3, the distribution of loanblends over semantic fields is analogical with data found in World Loanword Database to a high degree. Furthermore, the semantic fields of “Modern World”, “The house”, “Food and Drink”, and “Agriculture and Vegetation” to which our sample belongs are included in the list of the most affected by borrowing semantic fields in the Loanword Typology project. More specifically, a comparison between the hierarchy based on the contribution of each semantic field to the total number of loanblends in our corpus with the hierarchy of semantic fields found by Tadmor (2009) showed that the two hierarchies correlate.

These data verify our initial observation that loanblends used by GHSs refer to everyday objects, places or food and this is strongly supported by the sociolinguistic instances in which loanblends are used. Furthermore, they provide supplementary support for the claim that, cross-linguistically, certain semantic fields are more likely to be borrowed.

9 The mini-dictionary of loanblends used by GHSs

The detailed lexicological analysis of loanblends held so far provided data for the compilation of a mini-dictionary for loanblends. The mini-dictionary of loanblends used by GHSs is a multilingual online dictionary, addressed both to:

- a) the Greek-speaking community, whether it be heritage speakers around the world or native speakers, and
- b) the academia who wishes to study loanblends used by GHS as innovations in the vocabulary of heritage speakers.

It complements the Greek Heritage Language Corpus (GHLC) and is available at <http://synmorphose.gr/index.php/el/#>. The metalanguage of the dictionary is Greek. For the moment, the dictionary macrostructure includes data from bilingual English-Greek heritage speakers extracted from the Chicago-sub corpus of GHLC, but this initial wordlist will be complemented with the inclusion of more data: a) extracted from Russian-Greek heritage speakers’ oral productions included in the Russian sub-corpus of GHLC, or b) from manually collecting all examples presented in previous research investigating such formations (see relevant literature in 2).

The components included in each entry are the following:

1. **Headword**, in the form of nominative singular, in the case of nouns, and in 1st person singular in the present tense of indicative mode, in the case of verbs.
2. **Pronunciation**, both in I.P.A. transcription and as a wag file to facilitate access to blind people.
3. **Grammatical information**, and more specifically the grammatical category (noun or verb), the gender (masculine, feminine and neuter), the inflectional paradigm in which the lemma is classified according to Inflectional Category codes used in the Dictionary of Standard Modern Greek and gender assignment procedure (analogical gender, phonological gender, suffixal analogy, combination).
4. **Etymological information**: the etymological component includes information about the construction procedure of each loanblend.
5. **Semantic fields**: each loanblend is classified according to the classification scheme of Haspelmath & Tadmor (2009) (see 6).
6. **Meaning**: Each entry provides the equivalent word in the recipient language (in our case Greek) and the loanblend translation in the donor language (English, German, Russian, etc.)

The interface is user-friendly, with the alphabetical list displayed above the entry list, with the added option to sort entries according to different criteria. The search function offers the possibility to search by headword, definition, keyword or synonyms with additional search modes: “Begins with”, “Contains”, “Exact term”, “Sounds like”. The functionality of the mini dictionary of loanblends will be further developed so as to link each entry with the exact point in GHLC where the loanblend-lemma is found. Other future plans include the enrichment of the mini-dictionary macrostructure with loanblends used by heritage speakers of other languages, in order to transform it into a useful, for heritage languages research, database with cross-linguistic data.

10 Concluding remarks

Given that, from a lexicological point of view, the nature of language contact is a complex phenomenon, this study offers some insights into the complexity of borrowing attested in the speech of Greek HSs with English as their dominant language. The investigation of 50 loanblends, mainly nouns, created and used by Greek HSs from the Greek Community of Chicago:

- (i) provided arguments about the borrowability scale constraint,
- (ii) highlighted two main modes of construction of loanblends, one more frequent operating with the addition of an inflection affix and a marginal one operating with the addition of a class marker to an English stem,
- (iii) offered strong support to the claim that neuter is the default gender in Greek,
- (iv) showed that analogical gender is the most frequent strategy employed for gender assignment in loanblends used by Greek heritage speakers
- (v) provided cues for supporting that, cross-linguistically, certain semantic fields are more likely to be borrowed.

From a lexicographic perspective, making dictionaries like the one described in this paper goes beyond pure lexicographical work. It is an attempt of preservation and documentation of Greek as heritage language and of the culture of heritage speakers.

Finally, this area of study is of increasing interest, since collecting cross-linguistic data about contact-induced borrowing in cases of heritage speakers is important for understanding universals in HSs' neological lexical creations and vocabulary acquisition and use.

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