Remarks on the morpho-syntax of code-switching

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1 Introduction

The term code-switching (CS) refers to the process of alternating between two or more languages (or dialects). An example of CS is given in (1) which illustrates a Greek-English alternation based on the data collection from Greek-Cypriots in London (Garnder-Chloros 2009: 51):

(1) *Bori* *ke* *na* *diavazi* *ke* *na* *grafi* *ala* *ohi*
can-3SG and SUBJ read-3SG and SUBJ write-3SG but not
ke *a* *hundred percent.*
and a hundred percent
'She can read and write but not quite a hundred percent.'

Here, I use the term CS to refer to the utterance-internal juxtaposition of overt linguistic elements from two languages, with no necessary change of interlocutor or topic, following Poplack (2004). For the theoretical linguist, the main question is whether this juxtaposition of the two languages can be explained in the same way as monolingual language structure, i.e. by appealing to general principles and parameters as e.g. proposed in MacSwan (1999).

In this paper, I limit myself to the study of noun and verb 'loans'/transfer in German-Greek CS data. First, I identify the patterns of transfer in the data from the point of view of integration of embedded L (German) into matrix L (Greek)[1] which will be compared to what is known about other cases of CS involving Greek and English. At first sight, it seems that there is a sharp contrast between nominal transfer as opposed to verbal transfer in the sense that nominal categories show a higher degree of integration. However, I show that this is not the case. The behavior of verbal transfer is subject to certain morpho-phonological as well as syntactic constraints. The overall analysis will provide support for MacSwan's idea that all kinds of CS are allowed as long as the grammar of the two languages involved is respected. In other words, there is no mixed grammar in CS. Moreover, my analysis supports the particular grammar architecture assumed in Distributed Morphology.

[1] In all the examples, I take it that the matrix language in the sense of Myers-Scotton 1993 (i.e. the one determining the morpho-syntactic structure) is Greek.

2 A note on the data collection

My data are drawn from Fotopoulou's (2004) study. These data were collected on the basis of questionnaires and tape recordings. Fotopoulou was more interested in what the attitude towards CS was and what the types of these switches were.[2] The only constraint for the 95 participants in the study was that they had to have acquired both Greek and German prior to the end of the critical period. Fotopoulou interviewed people from different areas of Germany (Stuttgart, Frankfurt, Munich, and Bochum). The participants (both male and female) were of different age groups (between 11–36 years old). I refer to the German-Greek data as *Greekish*.

3 Two patterns of transfer

Examples (2) and (3) are cases of nominal and verbal transfer in Greekish respectively:

(2) *Simera piga stin Krankenkáss-a.*
today went-1SG to-the health insurance (office)
'Today I went to the health insurance office.'

(3) *Kséris posa Platten ekane i Muskuri verkaufen?*
know-2SG many records did-3SG the-Muscuri-NOM sell-INF
'Do you know how many records Muskuri sold?'

In (2), the German noun is fully integrated within the Greek nominal inflection system, while in (3) a Greek light verb combines with a German infinitive. (2) seems to violate the constraint in (4), formulated by Poplack (1980):

(4) **The free morpheme constraint**
A switch may not occur between a bound morpheme and a lexical item, unless the latter has been phonologically integrated into the language of the bound morpheme.

The above contrast suggests that the nominal domain is characterized by a greater amount of integration. In what follows, I examine the two patterns of transfer in some more detail.

3.1 Nominal transfer

Examples of the type in (2) are very common. Consider also the ones in (5), from Fotopoulou (2004):

[2] For instance, she noted that younger participants seem to have problems with Greek vocabulary and orthography. These tend to switch to German more. The participants seem to prefer intra-sentential switches.

(5)	*Greekish*	*German*	*Greek*
a.	to matrátz-i the-mattress-NEUT	die Matratze-FEM	to strom-a the-mattress-NEUT
b.	to regál-i the-shelf-NEUT	das Regal-NEUT	to raf-i the-shelf-NEUT
c.	o vetrét-as the-representative-MASC	der-Vertreter-MASC	o andiprosopos the-representative-MASC
d.	i káss-a the-cashpoint-FEM	die-Kasse-FEM	to tami-o the-cashpoint-NEUT
e.	i kél-a the-cellar-FEM	der-Keller-MASC	to kelar-i the-cellar-NEUT

Similar data have been reported for English noun loans by British-born Cypriots (BBC)-Greeks, as Gardner-Chloros (2009: 50) reports, whose English is referred to as *Grenglish*:

(6)	*BBC Grenglish*	*English*	*Greek*
	marketa-FEM	market	agora-FEM
	hoteli-NEUT	hotel	ksenodohio-NEUT
	kuka-FEM	cooker	furnos-MASC
	fishiatiko-NEUT	fish and chip shop	--
	kitsi-NEUT	kitchen	kuzina-FEM
	ketlos-MASC	kettle	--
	haspas-MASC	husband	andras-MASC

The three languages under discussion crucially differ in terms of phi-features of nouns. English lacks grammatical gender and declension classes (and in this sense it can be described as less transparent). As we see in (6), however, all English nominal borrowings are assigned Greek inflectional classes.

German, like Greek, has three genders and a large number of inflection classes. Still, all German borrowings are assigned a Greek declension class, but we *do* observe gender interference. This suggests that principle (7) is at work:

(7) *All* loanwords must be assigned to declinable noun classes, since the matrix language (Greek) has declension classes.

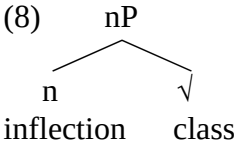
This means that the borrowed nouns have become active members of the speakers' vocabulary, because they are assigned one of the Greek declension classes, as determined by the overall sentence context.

3.2 An analysis of nominal transfer

I assume that gender and declension class are not represented in the extended functional structure of the noun phrase (Alexiadou; Haegeman & Stavrou 2007;

Alexiadou & Müller 2008). Such features are realized on the noun; in fact, they are inserted under n at PF as in (8). The structure in (8) adopts the main intuition in Distributed Morphology that roots are categorized in the syntax and they lack all sorts of diacritics/features. Declension class features and gender are realized on n, assuming *late insertion,* following Halle & Marantz (1993) and others:

(8)



CS provides evidence for the view that such features cannot be a property of the root, as they get re-assigned depending on the linguistic context. Let us consider how.

Both Greek and German have been argued to have 8 inflection classes each (Ralli 1994; Wurzel 1998; Alexiadou & Müller 2008 among others). When it comes to CS, we can observe certain preferences. German stems are either incorporated into the VII class of Greek nouns whose members are all neuter nouns (i.e. the *spiti* 'house') or into one of the S-classes (ending in $-as_{MASC}$ and $-a_{FEM}$). This is expected in the sense that some of the other classes can be characterized as archaic.

In the Greekish data, we generally find determiner-noun gender/class matching (contra Cantone & Müller 2008).[3] We can distinguish the following categories: (i) the borrowed noun bears the same gender in both languages as in (5b–c). (ii) The borrowed noun bears the gender of its Greek equivalent, although it does not belong to the same declension class as in (5a). (iii) The borrowed noun seems to preserve its gender as in (5d). However, these cases seem to be formed on analogy with the S-principle examples, e.g. the *thalassa* 'sea' nouns. (iv) Finally, the gender of the borrowed noun does not match L1 or L2 gender; here, gender seems to be determined by the affix, which belongs to the Greek declension class system as in (5e).

How does a German noun become Greek? Borrowed nouns whose phonological form remains unaltered in Greek, see (9), join the class of indeclinables. Their gender can be seen from the article that accompanies them. In this case, no Greek well-formed noun can be formed by adding any kind of affix; the noun is simply borrowed as such (cf. Repetti to appear on English-Italian transfer):

(9) *Tu* *pira* *ti* *Vorfahrt*-FEM.
him took-1SG the right of way-FEM
'I took his right of way.'

[3] This probably has to do with the age of the participants in Fotopoulou's study who were older than 11 years.

Most nouns, however, do not behave in this way, as just explained above and shown in (5). In all these cases, a suffix is added. The reason seems to be that consonant-final nouns tend not to be phonotactically acceptable in Greek; hence, the available strategy for loan integration is to supply an ending belonging to one of the Greek declension classes.

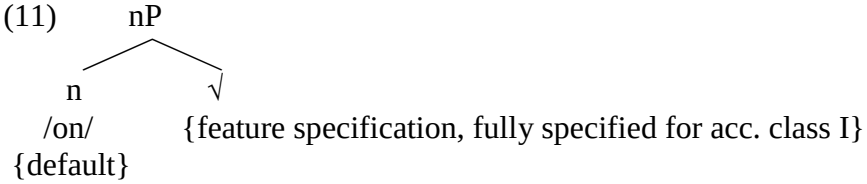
The reason why the CS grammar adopts the Greek declension pattern is that the noun is inserted in a 'Greek' syntax, thus, it has to bear Greek morphological features. The local context determines the shape of the noun, which suggests that the lexicon of both languages is active. In case the noun is inserted in a 'German' environment, no adaptation takes place as in (10):

(10) *Thelo* *na* *vgo* *mit* *meinem Freund*.
want-1SG SUBJ go-out-1SG with my-boyfriend-DAT
'I want to go out with my boyfriend.'

The above behavior supports the view on class/case and other phi-features, according to which these are late-inserted at the PF branch of the grammar.

Within the framework of Distributed Morphology it is assumed that phonological information is inserted into syntactic structure only after all syntactic operations have applied. The framework makes a distinction between the notion of a *morpheme*, which refers to a syntactic terminal element, and that of a **Vocabulary item**, which is defined as a relation between a string of phonological information and the context in which this string may be inserted.

Late insertion applies to so-called f-morphemes (functional morphemes). In our case, n is the syntactic node, and class features are part of what is being late-inserted at PF (11), see Galani (2007) for verbal morphosyntax. The overall combination has then to respect the phonotactic constraints of Greek:

(11)


3.3 Verbal transfer

Turning to verbs, we expect that since Greek has verbal conjugations as well, the same logic will apply. In other words, all German verbs have to become Greek by joining one (the default?) conjugation. Two main patterns of verbal transfer can be identified in *Greekish*, illustrated in (12) and (13) respectively:

(12) *kano* *abschalten* *do + infinitive*
do-1SG kick-back-INF
(13) *skann-ar-o* *stem+ar-Agr*
scan-AFF-1SG

Both of these have been reported to exist in several diasporic Greek-English contexts as well, for instance, BBC Grenglish, Montreal, Chicago, and Victoria Greek (Gardner-Chloros 2009: 50–51), see (14–15).

(14)	*kamno respect*	*kamno developed*	*kamno improve*
	respect-1SG	develop-1SG	improve-1SG
(15)	*muv-ar-o*	*kansel-ar-o*	
	move-AFF-1SG	cancel-AFF-1SG	

These represent only two of the four sub-types of verb loan patterns identified in the literature (Wichmann & Wohlgemuth 2005). Example (12) corresponds to the **light verb strategy** which most often involves a verb meaning 'do' from one language and an infinitive or a nominalized form from the other language (see also Bhatia & Ritchie 2001). Example (13) corresponds to the so-called **indirect insertion** where an affix is added to the stem of the loan word and then the normal inflectional patterns can be applied.[4]

Wichmann & Wohlgemuth (2005) point out that the **lowest** degree of integration is the light verb strategy followed by indirect insertion. From this perspective, two questions arise: first, why do we find a high degree of integration in the nominal system, but a lower degree of integration in the verbal system? Second, why do we find only patterns (i) and (ii) in Greekish CS? Let us consider the two patterns in some more detail.

Beginning with indirect insertion, note that the addition of the affix *-ar-* triggers stress shift (to the penultimate syllable).[5] Unlike other affixes (such as *-iz-*, *-ev*, *-on-*, and *-on-*), *-ar-* is used less frequently and selects a narrow range of bases. Originally, as stated in Mackridge (1987), it was used for Romance loans (*derapáro* from déraper 'skid'); the affix itself has its source in the Italian affix *-are*. Clearly, it now applies to Germanic stems as well.[6]

Turning to the light verb strategy, Stavrakaki (1999) notes that the light verb *kano* appears in a number of environments in Greek:

(16)	a.	*Kano*	*to spiti.*				*V+nominal*
		do-1SG	the-house-ACC				
		'I clean/build/construct the house.'					
	b.	*Ekana*	*jatros*	*/ekana*	*pos*	*ime*	*eksipnos.*	*V+ clause*
		did-1SG	doctor	/did-1SG	that	am	clever	

[4] The other two patterns are: (a) **direct insertion** where the loan word is directly plugged into the grammar of the other language with no accommodation, and (b) **paradigm transfer** where the word is borrowed with significant parts of the donor language's morphology. We do not seem to have direct insertion in Greekish, but this is possible in Grenglish (see Gardner-Chloros 2009: 52).

[5] In fact, all Greek verbalizing affixes trigger stress shift.

[6] In Italian, *-a-* is the default theme vowel, i.e. all new verbs enter the pattern of conjugation I verbs having the theme vowel *-a-* (Ippolito 1999).

'I used to be a doctor/I pretended to be clever.'

c. *Ekana na figo.* *V +subjunctive*
did-1SG SUBJ go-1SG
'I tried to leave.'

Stavrakaki observes that the above combinations receive a rather different interpretation, e.g. pretend, try etc. This is not the reading the German-Greek CS strings have; their meaning equals that of the simple German verbs.

Before I proceed to an analysis of the two patterns, one note is in order here concerning the relationship between (13) and strings of the type in (17) below. (17) is an example of colloquial (and dialectal) German and involves the German light verb *tun* 'do':

(17) *Tust du pflügen?* *Schwabian*
do-2SG you ploughing
'Are you ploughing?'

Could it be the case that Greek speakers borrow this pattern? The answer to this question is clearly negative. First, the semantics of the *tun*-periphrasis differs from that of the CS patterns. Second, the CS pattern is far too general. For instance, we also find it in the Grenglish data. English does not have something comparable to the German *tun*-periphrasis. In fact, the only cases of *do*-periphrasis in English are found in child English. Roeper (1991) noted that *do* in the examples (18) and (19) was not invoked by any of the usual triggers:

(18) I did wear Bea's helmet.
(19) I do have juice in my cup.

If child English shows such patterns as well, we are probably dealing with an unmarked pattern available to language learners (see Bhatia & Ritchie 2001).

Third, it has been pointed out in the literature that the *tun*-periphrasis cannot support positive polarity licensing (PP). However, the CS data are not subject to this constraint (21):

(20) **Finanziell sieht es für den Verlag nicht ziemlich*
financially looks it for the publishing house NEG fairly
dunkel aus
dim out

(21) *Ekana volle Kanne drauffahren.*
did-1SG full throttle run-into-INF
'I run into (something) full throttle.'

Finally, the *kano*+infinitive string always involves V-raising of the light verb, hence the overall syntax is Greek which has generalized V-raising-to-T, and not German (which is V-final in subordinate clauses and V2 in main clauses):

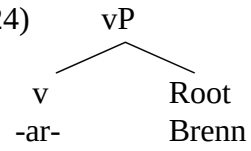
(22) *De hriazete na to kani lessen.*
NEG need-3SG SUBJ it do-3SG read-INF
'He does not need to read it.'

3.4 Towards an analysis of verbal transfer

A closer look at the data suggests that the distribution of the two patterns is conditioned:

(23) a. *brenn-ar-o* *skann-ar-o*
burn-AFF-1SG scan-AFF-1SG
b. *kano abschalten* *kano anrufen*
do-1SG kick-back-INF do-1SG call-INF

Example (23a) contains mono-syllabic stems. As was the case in (8), and see also Wichmann & Wohlgemuth (2005), we can assume that in (23a) we have roots not marked for category; these become verbal via affixation (the default verbalizer here being *-ar-*), see (24) and also Giannakidou & Merchant (1999), Alexiadou (2001, 2009), Charitonidis (2005), though the perspectives differ:

(24)


After a verb is formed, this undergoes V-to-T movement. It can even undergo further word formation processes, e.g. produce derived nominals such as *brennarisma* 'burning'.

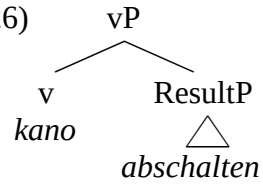
But not everything goes with -ar-:

(25) a. *Na kanun kämpfen.*
SUBJ do-3PL fight-INF
'They should fight.'
b. *Kano abschalten*
do-1SG kick-back-INF
'I am kicking back.'

While (25b) involves a particle verb, (25a) involves a case where the morpho-phonology would not, in principle, allow the *-ar-* affix.

Abschalten is a so-called complex predicate (particle verbs). Without getting into the details of the proper analysis of such constructions and the debate surrounding them, I take the following structure to re-present them:

(26)

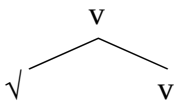


In order for the ResultP to be incorporated into Greek syntax, *kano* 'do' must be inserted. Indirect insertion/affixation is impossible with complex predicates, as it would violate the final three-syllable window for stress that characterizes Greek. As mentioned, the affix triggers stress shift, but the particle itself requires stress hence a conflict arises, leaving the light verb strategy as the only option. It is also not available for those stems that cannot be easily incorporated into Greek phonotactics. Thus, the use of the light verb strategy is not suggestive of low integration.

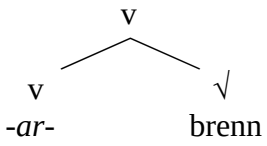
A final note concerns the use of the German infinitive in the CS examples. As mentioned, all inflectional marking goes on *kano*. In German, the form that acts as the default is the infinitive. That is, this form, being underspecified for finiteness, person, and number features, can be inserted in positions that are otherwise characterized by root insertion (also unspecified for all of the above).

Thus we have two patterns of verbal CS transfer which correspond to the two patterns of root insertion discussed in Embick's (2004) work:

(27) a. modifiers of v, *direct Merge*



b. complements of v



The structure in (27a) can license secondary resultative predication. In that case the element that appears in the complement of v cannot be a bare root (Embick 2004), see (26).

In conclusion, the insertion of a light verb or an affix seems to be sensitive to the phonological properties of the root/complement of v. This makes sense only in a theory that relies on late insertion of functional material.

4 Conclusions

In both the nominal and the verbal domain, general principles regulating the shape of loans seem to be at work. CS is thus grammatically constrained. This provides support for MacSwan's idea that all kinds of CS are allowed as long as the grammar of two languages involved is respected. The implication of this analysis

is that both grammars are activated. The CS data examined here provide support for the theory of *late insertion* of functional material, which is sensitive to the properties of the stem/'lexical' element in the derivation.

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