On how morphology spreads

Francesco Gardani
University of Zurich

Abstract

A language's grammar can be stratified, due to borrowing processes. While being a well-established term in the linguistic literature, the term 'borrowing' is sometimes used in a non-uniform way, particularly when it applies to bound morphological formatives. A Stratal Effect is hypothesized, which, applying to varying extent, gives rise to at least three distinct, psycholinguistically motivated types of morphological transfer. A typology of morphological spread is proposed, which consists of three main types: strictly compartmentalized co-morphologies, partially compartmentalized co-morphologies, and morphological borrowing. The widespread view that affix borrowing can be either direct or indirect is questioned and it is argued that most likely, morphological borrowing is always an intermediate process, involving the extraction of formatives and their diffusion within the lexicon.

Keywords: grammatical compartmentalization, language change, language contact, morphological borrowing, Stratal Effect

1 Introduction

Language contact and borrowing have traditionally been considered one of the principal sources of language change. Thus the term 'borrowing' is well-established in the linguistic literature, and in some cases, its meaning is pretty straightforward, for example with respect to lexical borrowing, such as English *beauty* from Old French *biauté*. In other cases, however, borrowing is used to refer to phenomena which appear to be identical but, in reality, are not coextensive. The ambiguity of the term is particularly evident when it applies to bound morphological formatives, such as affixes and clitics, and abstract morphological patterns, such as non-concatenative base modification,

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reduplication, and conversion. I will illustrate this point right away, drawing on a set of data from Malinche Nahuatl, an Aztecan language spoken in Mexico. In Malinche Nahuatl, we find the following three Spanish-origin morphemes: the diminutive/affective suffix *-ito*(M) (1a), the nominal plural allomorphs *-s*/*-es* (1b-c), and the agentive suffix *-(t)ero* (1d).

(1) Malinche Nahuatl

a. *chiqu-ito* (González Casanova 1933: 715)
child-DIM
'dear child'

b. *hora-s* (Hill & Hill 1986: 164)
hour-PL
'hours'

c. *chiquihuite-s* (Hill & Hill 1986: 165)
basket-PL
'baskets'

d. *tlahchiqu-ero* (Hill & Hill 1986: 197)
maguey_sap-AG
'person who collects maguey sap to make pulque'

The data in (1b-d) stem from Hill & Hill (1986: 194), who say that these suffixes have been 'borrowed' from Spanish. At a first sight, this claim seems to be correct, for *-ito*, *-s*, and *-ero* are all Spanish morphemes. A closer look, however, reveals that the use of the term borrowing – for the isolated formatives – may be misleading. We observe, first, that the Spanish morphemes apply to lexical bases of different origin. *Chico* and *hora*, to which the diminutive/affective suffix *-ito* and the plural suffix *-s* 'attach' in (1a) and (1b), respectively, are loanwords from Spanish; the plural suffix *-s* occurs also in a Hispanicized form of a Nahuatl noun in (1c), viz. *chiquihuite*.[1] Only *tlahchicqui*,[2] to which the agentive suffix *-(t)ero* 'attaches' (1d), is a native Nahuatl lexeme. Second, the occurrence of the Spanish-origin morphemes *-ito*, *-s*, *-ero* is not limited to the lexical bases in (1a-d). Rather, the data in (1) exemplify how the occurrence of Spanish suffixes in Malinche Nahuatl is constrained in terms of the types of lexical bases they select and point to a differential treatment of foreign formatives. In light of this evidence, is it still correct to treat the occurrence of the Spanish morphemes as 'morphological borrowings' from Spanish in(to) Malinche Nahuatl? Intuitively, one would say that this is the case for *-ero*. But then, how about *-ito*? After all, the occurrence of the string /ito/, in *chiquito*, could be due to the fact that the whole wordform is a lexical borrowing. In this case, the presence of the string /ito/ could be interpreted as an automatism, and /ito/ would not count as a suffix. However, if we were to follow the undiscriminating use of the term

[1] *Chiquihuite* is a Hispanicized variant of *chiquihuitl*.

[2] Nahuatl *tlahchicqui* means 'someone who collects unfermented maguey sap [*tlachique*] as a beverage' (Karttunen 1983: 260). The form *tlachiquero* also occurs in Zacapoaxtla Nahuatl (Puebla, south-eastern Mexico) (Key & de Key 1953: 123, 207).

'borrowing' by Hill & Hill (1986) (and, more recently, by Lucas & Čéplö 2020), the presence of phonetic strings in a recipient language (RL), which correspond to derivational or inflectional formatives in a source language (SL), would constitute morphological borrowing. The relevant question is: Does the presence of foreign morphology in a language per se mean that these morphological formatives have been *borrowed*?

Some readers might find this question trivial, a purely terminological issue. It isn't, in fact. Other readers may object that this issue is not new. Fair enough, but the topic has not yet been settled, as claims made in recently published work have shown. For example, my own proposal that the notion of *morphological* borrowing – as contrasted with *lexical* borrowing – implies the spread of a foreign formative to RL-native bases (Gardani 2008, 2012, 2018, 2020c), has been judged "unduly restrictive" by Evans (2016: 31), who, instead, distinguishes between "the case where SL-origin material is confined to loanword hosts", for which he employs the term 'hosted inflectional borrowing', and the case "where the borrowed material has been extended to native hosts", in which case Evans speaks of 'recombinant inflectional borrowing'. The position advocated by Evans isn't wrong, in descriptive terms, but, as I will show, it fails to capture an important synchronic generalization concerning borrowing, namely the speakers' sensitivity to different lexical and grammatical strata coexisting in one and the same language and their ability to handle them in a differential way.

In general, the topic calls for a careful treatment, not only because borrowing is one of the principal sources of language change, along with sound change and analogy (see, e.g., Anttila 1989; Bybee 2015: 248), but also because cases similar to those observed in Malinche Nahuatl, in (1), are attested crosslinguistically. Therefore, the goal of this paper is to provide a typology of the main ways that morphology spreads due to contact. To attain this goal, I will provide a precise and viable definition of 'morphological borrowing' and distinguish it from other types of contact-induced morphological change. My focus in this paper is on MAT borrowing, that is, the borrowing of morphological formatives (Matras & Sakel 2007; Sakel 2007) rather than on morphological PAT borrowing (for a typology see Gardani 2020b).

The remainder of this article, which opens the thematic issue *Morphology in Contact*, is organized as follows: section 2 proposes a typology of spread consisting of three main types: strictly compartmentalized co-morphologies (§2.1), partially compartmentalized co-morphologies (§2.2), and morphological borrowing (§2.3). Section 3 investigates the issue of the immediacy (vs intermediacy) of the borrowing process. Section 4 concludes the article and surveys the contributions to the thematic issue.

2 Typology of spread

A language can have multiple grammars, that is, rules apply differentially in specific (sub)domains of grammar depending on the infiltration of the contact languages into an RL. This idea is not new. A great deal of research taking this perspective has focused on phonology (e.g., Itô & Mester 1999; Inkelas & Zoll 2007; Calabrese & Wetzels 2009b; Mansfield 2015; Stewart et al. 2018), prosody (Kubozono 2006; Kang 2010; Davis et al. 2012), and also on morphology (e.g., Kiparsky 1982a, 1982b; Booij 2002:

Table 1: Extent of Stratal Effect and resulting phenomena.

	Stratal Effect	Phenomenon
I	no spread: complex lexical borrowing	strictly compartmentalized co-morphologies
II	spread to RL-non-native bases	partially compartmentalized co-morphologies
III	spread to RL-native bases	morphological borrowing

94–101). With respect to the selectional restrictions on the occurrence of foreign material in an RL, Matras (2002: 193) introduced the term 'compartmentalized grammar', based on the observation that in some languages (contextually: Romani) "different sets of grammatical markers are employed with different parts of the vocabulary" (see also Elšík & Matras 2006: 324–333; Friedman 2013; Matras 2015: 66–75).

In this section, I propose a typology of spread by discussing *how far* bound morphology can spread, based on an empirically observable constraint, the 'Stratal Effect',[3] which I define as a restriction on the application domain of non-native morphological formatives in a recipient language to specific etymon-based lexical strata of that language. My hypothesis is that the Stratal Effect produces different degrees of spread resulting in different phenomena of morphological mixing: strictly compartmentalized co-morphologies (§2.1), partially compartmentalized co-morphologies (§2.2), and morphological borrowing (§2.3) (cf. Table 1).

While it is obvious that, in diachronic terms, grammatical stratification is the result of the introduction of grammatical rules from different SLs, at different times, under different contact conditions, the Stratal Effect can be interpreted synchronically as the speakers' knowledge that subsets of grammatical rules apply to subsets of the lexicon, depending on their origin and ultimately, on the speakers' ability to interpret signals (such as acoustic clues) flagging words as non-native (cf. Calabrese & Wetzels 2009a).[4] For example, it can show that speakers have access to borrowed morphology, even when it derives from SLs that no longer are contact languages of an RL.

2.1 Strictly compartmentalized co-morphologies

A strict application of the Stratal Effect results in what I shall label 'strictly compartmentalized co-morphologies':[5] derivational and inflectional forms enter an RL and come to coexist with native paradigms, maintaining the original morphological

[3] I am grateful to Geert Booij for suggesting this term to me (February 13, 2015). See the related coinage "stratal restrictions" in Booij (2002: 94).

[4] While the Stratal Effect is supposed to mainly work subconsciously, contact-induced morphological change can be deliberate as well, as has been shown by Thomason (2015: 38–41) and discussed in this thematic issue by Laakso (2021).

[5] This term is inspired by the work of Friedman (2013) and Matras (2015: 66–75), the latter referring to the borrowing of inflectional morphology along with lexical word forms as an instantiation of 'morphological compartmentalization'.

mechanism of their source. The stock example is the English paradigm sg. *alumnus* pl. *alumni*, a loan-noun that retains the paradigmatic inflections of the SL, Latin, that are relevant to the English morphosyntax: the number values singular and plural. Consider now the following examples from Dutch and German concerning the morphosyntactic features of number (2a) and case (2b), respectively.

(2) a. Dutch

De	*economisch-e*	*cycli*	*word-en*	*kort-er*
DET.PL	economic-PL	cycle(M).PL	become-3PL	short-CMPR

'The economic cycles become shorter.'

b. German

die	*Mutter*	*Jesu*
DET.F.SG	mother(F)	Jesus.GEN.SG

'the mother of Jesus'

Although this phenomenon has long been observed (e.g., Whitney 1881: 17; Jespersen 1922: 213; Haugen 1950: 225), it has not been paid much attention to except for van Coetsem (2000: 90) and especially the detailed empirical and theoretical treatment provided by Kossmann (2008, 2010). Kossmann shows that, while indeed rare, this phenomenon of transfer is, in fact, more widely diffused than is generally assumed (see also Comrie 2008). He labels it 'parallel system borrowing' to describe a process whereby loanwords retain (part of) their original paradigms and, in this way, come to establishing themselves as morphological systems that are parallel to the native paradigms of an RL. Kossmann's analysis is in terms of etymon-related compartmentalization to the effect that "different morphologies occur in different etymological strata" (Kossmann 2008: 18).

Unlike the case of English and Dutch (and to some extent German), which have relatively small paradigmatic morphology, parallel system borrowing can be fairly prominent in languages with (more) elaborated paradigms: it can concern different parts-of-speech such as nouns, adjectives, and verbs (Kossmann 2013: 410–414) and both inflectional and derivational morphology.[6] Based on current knowledge, the case of parallel system borrowing with the largest extension is found in the Northern Berber language spoken in Ghomara, northwestern Morocco. Here, "there are two parallel systems for all parts-of-speech: nouns, adjectives, verbs, pronouns" (Mourigh 2015: 10). This is particularly evident in verbal morphology because about half of the verbs are inflected according to Arabic morphology (Kossmann 2013: 413). Interestingly, in Ghomara Berber parallel system borrowing is found not only with the verbal inflections but also in the verb phrase, in that direct object pronouns are Arabic when they occur with Arabic-morphology verbs and Berber when they occur with Berber-morphology verbs. Compare the paradigms of the direct object suffixed pronouns appearing in the

[6] As concerns derivation, at the outset of this article I referred to the use of Spanish-borrowed diminutives in Malinche Nahuatl. The use of the native formative *-tzīn* and of the Spanish-derived *-ito* and *-ita* appears to be "split between words of the two languages" (Hill & Hill 1986: 195).

3SG and 3PL past forms of the Arabic-borrowed verb *ɛṭəq* 'to help' in (3a), with the corresponding paradigms of the direct object encliticized pronouns appearing in the 3SG and 3PL perfective forms of the Berber verb *šəbbəṛ* 'to grab, catch' in (3b).

(3) a. Ghomara Berber: Loan morphology (Mourigh 2015: 237)

	ɛṭəq	*ɛəṭqu*
	help.PST.3SG	help.PST.3PL
	'he helped [me, you, etc.]'	'they helped [me, you, etc.]'
1SG	*ɛṭəq-ni*	*ɛəṭqu-ni*
2SG	*ɛəṭq-ək*	*ɛəṭquʍʍ-ək*
3SG.M	*ɛəṭq-u*	*ɛəṭquʍʍ-əh*
3SG.F	*ɛəṭq-a*	*ɛəṭqu-ha*
1PL	*ɛṭəq-na*	*ɛəṭqu-na*
2PL	*ɛṭəq-kum*	*ɛəṭqu-kum*
3PL	*ɛəṭq-əm*	*ɛəṭqu-həm* ∼ *-hum*

b. Ghomara Berber: Native morphology (Mourigh 2015: 229)

	i-šəbbṛ	*šəbbṛ-an*
	3SG.M-grab.PFV	grab.PFV-3PL
	'he grabbed [me, you, etc.]'	'they grabbed [me, you, etc.]'
1SG	*i-šəbbṛ=ay*	*šəbbṛ-an=ay*
2SG.M	*i-šəbbṛ=ak*	*šəbbṛ-an=ak*
2SG.F	*i-šəbbṛ=am*	*šəbbṛ-an=am*
3SG.M	*i-šəbbṛ=at*	*šəbbṛ-ən=t*
3SG.F	*i-šəbbṛ=at*	*šəbbṛ-ən=tət* ∼ *tət*
1PL	*i-šəbbṛ=anax*	*šəbbṛ-an=anax*
2PL	*i-šəbbṛ=awən*	*šəbbṛ-an=awən*
3PL	*i-šəbbṛ=ahən*	*šəbbṛ-ən=tən*

Mourigh (2015: 6) states that "[n]ative speakers have consistent judgments about which non-integrated forms belong to Ghomara Berber and which not" and comparing his fieldwork data with texts recorded in 1928 (Colin 1929: 52–55), he concludes that the phenomenon is stable (Mourigh 2015: 7).

2.2 Partially compartmentalized co-morphologies

A less strict application of the Stratal Effect manifests itself when SL-origin formatives occur also on hybrid formations (such as *chiquihuite*, cf. (1c)) or on lexical bases belonging to other non-native etymological strata of an RL. This is not infrequent in languages that have etymologically layered lexical inventories. I refer to this phenomenon as 'partially compartmentalized co-morphologies'. As a case in point, consider some facts of Maltese derivational morphology. Maltese has borrowed from Italo-Romance a good many verbs containing the suffix *-are*, such as Italian *ammirare* 'to admire', *cantare* 'to sing' (Borg & Azzopardi-Alexander 1997: 249–250). This

originally infinitive-marking suffix *-ar*[7] is used in Maltese to derive verbal nouns from Romance nominal bases, such as *sparar* 'firing' from *spara* 'he fired' (cf. Italian *sparare* 'to fire'), *iffullar* 'crowding' from *iffolla* 'he crowded' (cf. Italian *affollare* 'to crowd') (Borg & Azzopardi-Alexander 1997: 251). However, the suffix also applies to English lexical bases such as *iddajvja* 'to dive' in (4) (from Drewes 1994: 92). Other examples include *iwweldjar* 'welding' (cf. *iwweldja* 'he welded'), *issettjar* 'setting' (cf. *issettja* 'he set'), *iddabbjar* 'dubbing' (cf. *iddabbja* 'he dubbed') (Borg & Azzopardi-Alexander 1997: 252).

(4) a. Maltese b. Italian c. English
iddajvjar *il tuffarsi* *diving*
'diving'

Other cases show a process of partial spread that is completed; for example, in varieties of Romani spoken in the Balkans, separate inflectional classes are assigned to native Indo-Aryan vocabulary and borrowed vocabulary, respectively (see Boretzky 1989, 1994; Boretzky & Igla 1991, 1999; Igla 1996; Bakker 1997; Elšík 2000; Matras 2002; Elšík & Matras 2006; Adamou 2012; Friedman 2013).[8] For instance, in the Romani variety of Kalderash, European loans undergo a different morphological treatment from the inherited Indian vocabulary and the pre-European loanwords (Boretzky & Igla 1999: 724). Here, the suffix conglomerates *-urja*, *-ura*, made up of the Romanian plural formative *-uri* and a native suffix *-a*, realize the plural only in nouns that do not belong to the inherited Indo-Aryan vocabulary, such as *kîmpo* 'field' (cf. Romanian *câmp*) (5a); *foro* 'town; market', borrowed from the Medieval Greek *fóros* (Helzle-Drehwald 2004: 191–192) (5b); *čobános* 'shepherd'[9] (cf. Romanian *cioban*, a loan from Ottoman Turkish *çoban*, ultimately from Persian *čupân*) (5c).

(5)	Kalderash Romani	lexical source
a.	*kîmp-urja* field-PL (Boretzky 1994: 38)	Romanian *câmp câmpuri*
b.	*for-urja* town-PL (Boretzky 1994: 38)	Medieval Greek *fóros fóroi*
c.	*čobán-urja* shepherd-PL (Boretzky & Igla 1999: 725)	Romanian *cioban ciobani*

[7] The verbal noun suffix *-ar* is to be distinguished from the homophonous agent noun suffix *-ar* found, e.g., in *arluġġar* 'watch mender' (from *arloġġ* 'watch') (see Borg & Azzopardi-Alexander 1997: 280).

[8] In this respect, Elšík & Matras (2006: 324) label inflectional classes that host the pre-European lexical stratum 'oikoclitic' and those that host the post-European lexical strata 'xenoclitic' (for an overview of the different lexical stratifications in Romani, see Matras 2002: 20–25). The traditional terms for oikoclitic and xenoclitic are 'thematic' and 'athematic', respectively.

[9] The occurrence of *-urja* with a noun denoting an animate entity shows that the formative in Romani is no longer restricted to inanimates (Boretzky 2004: 1650).

We know that the formatives were productive at different synchronic points and that there are no instances of 'backward diffusion', i.e. extension of foreign formatives to the pre-existing native Indo-Aryan etymological stratum.[10]

Unlike cases of strict compartmentalization seen in §2.1, the data from Maltese and Kalderash Romani attest to a higher degree of entrenchment of the once-foreign elements in the respective RLs; they are, to use Mifsud's (1995: *passim*) terminology, less 'undigested'. In a recent paper on Romani, Friedman (2013: 119) incidentally raises the question of whether compartmentalization is a matter of integration or rather of segregation. This issue is hard to judge if one takes a sociolinguistic and language-ideological perspective, as Friedman does. The language facts, however, are unmistakable. The data tell us that non-native formatives have achieved a certain degree of productivity to the effect that speakers use them beyond the threshold of the formatives' SL, to form new words on borrowed bases. This productivity is evidence for a deeper entrenchment of the new formatives in the morphology of the RL.

Thus far, we have seen instances of transfer in which foreign formatives and structures are used with non-SL – but crucially, not with RL-native – lexical bases. The spread of morphological formatives to native lexical bases is discussed in the next section.

2.3 Morphological borrowing

In a weak Stratal Effect, the spread of SL-formatives to the native vocabulary of an RL gives rise to new lexemes in the case of derivational borrowing or to native lexemes inflected by borrowed inflectional formatives. For the sake of clarity, let us now resume and elaborate on the Malinche Nahuatl case we saw in §1.

(6)	a. Malinche Nahuatl	b. Classical Nahuatl	c. Spanish
	tlahchiqu-ero	*tlahchic-qui*	*platan-ero*
	maguey_sap-AG	harvest_magueys-AG	banana-AG
	'person who collects maguey'		'banana grower'

(7)	a. Malinche Nahuatl	b. Classical Nahuatl	c. Spanish
	cuah-tero	*quauhxīn-qui*	*leña-tero*
	wood-AG	do_carpentry.PRET-AG	wood-AG
	'woodcutter, carpenter'		

The lexeme *tlahchiqu-ero* (6) corresponds to Classical Nahuatl *tlahchic-qui* (Karttunen 1983: 260). In Classical Nahuatl, *tlahchic-qui* is derived from the verb *tla(i)hchiqui* 'to scrape, scratch, especially to harvest magueys' (Lockhart 2001: 219) by suffixation with *-qui* (Lockhart 2001: 54), a Classical Nahuatl deverbal agentive formative that also

[10] While the terms 'forward diffusion' and 'backwards diffusion' have become familiar in language contact research since Matras (2009: 209), prior to this, we find a corresponding term pair, 'forward transfer' and 'backward transfer', in a psycholinguistic study by Liu et al. (1992: 454–455).

occurs, e.g., in *ichtecqui* 'thief' (cf. *ichtequi* 'steal' in Carochi 2002: 202) and *tlaxcal-chiuh-qui* 'bread maker, baker' (cf. *chihua* 'to make', *tlaxcal* 'bread' in Lockhart 2001: 54). In (7), I contrast Malinche Nahuatl *cuah-tero* (Hill & Hill 1986: 143, 197) with the correspondent native Nahuatl noun *quauhxīnqui* 'carpenter, woodcutter' (Lockhart 2001: 231), constructed on the preterit stem *quauhxīn-* of the verb *quauhxīma* 'to do carpentry' (cf. *quahu(-itl)* 'wood, tree' and *xīma* 'to shave, dress').[11] For both cases, Spanish formations in *-(t)ero* are provided in (6c) and (7c) (*platanero* is semantically not corresponding, but morphologically possible).[12]

This type of transfer, which I refer to as 'morphological borrowing', differs from the types seen in §2.1 and §2.2, for it implies both a stronger entrenchment of the formatives in the RL and attests to the speakers' willingness to trespass the boundaries between SL and RL. In psycholinguistic terms, morphological borrowing is underlain by the speakers' ability "to reflect on and manipulate the morphemic structure of a word" (Luo et al. 2014: 90). The creation of forms such as *tlahchiquero* and *cuahtero* presupposes a certain degree of computation: first, the identification of both Nahuatl *-qui* and Spanish *-ero* and second, the replacement of the former by the latter.[13] Most likely, this process of replacement occurred synchronically: a scenario in which coiners of *tlahchiquero* had forgotten Nahuatl *-qui* and used *-ero* to fill this gap is to be discarded, based on two reasons: a) forms in *-ero* and forms in *-qui* cooccur synchronically and do not seem to encode different connotations and b) all speakers are Nahuatl-Spanish bilinguals. As a matter of fact, linguistic contacts between Nahuatl and Spanish have lasted nearly five centuries, with evident signs of bilingualism starting from approximately 1640 (Lockhart 1996: 261), and speakers of Malinche Nahuatl are nearly all bilingual with Spanish (Hill & Hill 1986: 1).[14]

We have not yet properly discussed the sociolinguistic dimension of the phenomenon, namely the issue of the diffusion of SL formatives amongst members of a speech community. Morphological borrowing (as well as compartmentalized co-morphologies) can occur as idiolectally or sociolectally established language change. To showcase this, consider the following data sets from Welsh. In the (8a-d) set, we see four nouns, all belonging to the inherited Celtic stratum, on which the plural is realized via a formative *-s* (and its allomorph *-is*), borrowed from English. However, in the parallel set, (8a'-d'), the same nouns inflect for plural via native inflectional means.

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[11] The reference form for Classical Nahuatl nouns is the absolutive singular, e.g. *quahu-itl* 'wood [wood-ABS. SG]' (Lockhart 2001: 230).

[12] American Spanish *leñatero* corresponds to European Spanish *leñador* (Corominas & Pascual 1980–1991, s.v. *leña*).

[13] Note that in Spanish, the suffix *-(t)ero* is productively used to form nouns denoting occupations, such as in *lechero* 'milkman', *zapatero* 'cobbler' (Rainer 1993: 485–492).

[14] According to one of the most widely accepted claims about grammatical borrowing, the higher the degree of bilingualism, the higher the probability that extensive structural borrowing occurs (Thomason & Kaufman 1988: 67). And of course, external factors such as the attitude towards linguistic mixing play a decisive role (cf., e.g., van Coetsem 2000: 68). However, discussing the structural factors and sociological conditions favoring the spread of SL formatives lies beyond the scope of this paper.

Table 2: Actuation domains of morphological borrowing.

{idi}	occurring in non-stabilized or stabilized speech of a single individual
{soc}	occurring across the speech community

(8)

Welsh (idiolectal)	Welsh
a. *taids* (SIARAD - Fusser18) 'grandfathers'	a'. *teidiau*
b. *crancs* (SIARAD – Fusser29) 'crabs'	b'. *crancod*
c. *annwyds* (SIARAD - Fusser18) 'colds'	c'. *anwydau*
d. *enfysys* (SIARAD - Stammers5) 'rainbows'	d'. *enfysau*

What kind of variation are we observing here? The data in (8a–d) stem from the conversational *Siarad Corpus* of Welsh-English bilinguals (*Siarad Corpus*), and the plural forms in *-s/-ys* occur in the speech of single individuals. The data in the parallel set are commonly accepted Welsh plural forms. Now, what is the status of the English plural formative *-s* in Welsh? Does it only occur in idiolectal use found in the bilingual corpus? From a merely linguistic viewpoint (intended as Saussurean *langue*), the case of plural-*s* in Welsh just discussed and the case of French-origin suffixes in English such as *-able* (e.g. in *lovable*) are the same: both are cases of morphological borrowing. However, from the point of view of language norm (*parole*), the data in (8a–d) – taken in isolation – exemplify an instance of borrowing which has occurred at the level of individual speech behavior, and not at the level of language as it exists by means of conventions accepted and adopted across a speech community. Weinreich (1953: 11) taught us that "[i]n speech, interference is like sand carried by a stream; in language, it is the sedimented sand deposited on the bottom of a lake." Thus, we need to bring another dimension into the definition of morphological borrowing: the domain of actuation of borrowed formatives. The domain {idi}iolectal describes the occurrence of borrowed formatives exclusively in individual use, be it occasional or stabilized idiolectal use. The domain {soc}ietal describes the societal dimension of spread, that is, the occurrence of borrowed formatives across a community of speakers (see Table 2).

In psycholinguistic terms, frequency of use (types and tokens) makes a difference, as it can modify underlying representations individual-wise, and "when systematically observed among several members of a given community, sometimes over generations of speakers" (Adamou et al. 2019), community-wise. The more a borrowed morphological formative is used by several speakers and gets diffused within a speech community (instead of remaining confined to individual use), the stronger its self-feeding effect, leading to what Johanson (2002: 298–300) has called habitualization and conventionalization. As a matter of fact, in some Welsh varieties the borrowed English formative *-s* has become an accepted plural formative for some few nouns (Gardani 2008: 76–78). From this perspective, borrowing is a matter of both *full nativization* and *stabilization*.

I therefore propose that the term 'morphological borrowing', when used without further specification, be reserved for cases of spread across the speech community,[15] and defined as the process whereby foreign formatives are routinely used among speakers of a recipient language and occur on native lexical bases of that language.

Summing up, I have proposed a Stratal Effect, showing that SL-formatives apply either selectively, that is, to separate etymological strata, or globally, that is, independently from the different lexical strata. This effect can be interpreted both historically and psycholinguistically: historically, it shows that different rules of an SL enter an RL at different times; psycholinguistically, it shows two things: diachronically, SL-rules can (but need not) progressively extend to other lexical strata, probably as they become more entrenched in an RL; synchronically, speakers make decisions – however conscious they might be – as to whether uphold or trespass the boundaries between SL and RL. Of course, as we have seen, attitude and degree of adherence to linguistic norms play a role, as well.

3 Extraction and extension

In the previous section, I have claimed that a weak application of the Stratal Effect gives rise to morphological borrowing. In this section, I address the issue of the immediacy (vs intermediacy) of the borrowing process, which is intimately related to the dynamics of the spread of formatives. How does morphological borrowing come along, concretely? Is it a mediate or an immediate process? I will argue that morphological borrowing is the result of a process of extraction and extension.

The topic of the directness or indirectness of morphological borrowing has received attention in the literature, but mostly from a descriptive perspective. Quite early in linguistic research, Paul (1920: 399) claimed that words are always borrowed in their entirety, whereas derivational and inflectional suffixes are never borrowed alone. However, – he claimed – given a critical mass of loanwords bearing a certain suffix, this suffix can spread from the borrowed lexical stuff to native lexemes of a recipient language by proportional analogy (Paul 1920: 399).[16] This idea was later formulated by Moravcsik (1978) in terms of constraint #2, in an eminent paper on universals of language contact. Behind a rather obscure formulation, the constraint states that bound formatives cannot be borrowed unless free morphemes that include them, are also borrowed:

> "No member of a constituent class whose members do not serve as domains of accentuation can be included in the class of properties borrowed from a

[15] The suggested distinction comes with a methodological caveat. At times, the data provided in the literature are not accompanied by sufficient information about the practices of elicitation adopted and the exact sociolinguistic context. In such cases, ascertaining whether a described occurrence of borrowing is a case of stabilized morphological change or rather an individual use, is hard, if not sheer impossible.

[16] Note that Bloomfield (1933: 454–455) also discusses the diffusion of foreign derivational formatives in terms of analogical extension, although he seemingly does not mean to set up any constraint.

> particular source language unless some members of another constituent class are also so included which do serve as domains of accentuation and which properly include the same members of the former class." (Moravcsik 1978: 110)

A case in point is the development of the English splinter *-scape* 'view or picture of a scene or scenery on land'. In the 16th century, the Dutch noun *landschap* 'region, tract of land' entered English as a loanword (Nesfield 1898: 31; Durkin 2009: 97) and was rendered as *landscape*. The first element, *land* /lɑnt/, was clearly recognizable thanks to its transparent semantics and morphotactics and because it is a cognate of English *land* /lænd/. Consequently, English speakers were able to identify and isolate the suffixoid *-schap / -scape*. This formative was then extended to native English bases. Remarkably, while in Dutch the formative bearing the meaning of 'view or picture of a scene or scenery on land' was not productive and only occurs in *landschap* (Booij 2002: 129), in English *-scape* has become productive giving rise to several neologisms, including *cityscape*, *dreamscape*, *moonscape*, *seascape*, *soundscape*, *townscape* (Aldrich 1966; Gold 2002; Bauer et al. 2013: 527).

In his seminal monograph, however, Weinreich (1953: 31–33) strictly separated the process of borrowing (in his terms, 'transfer'), in which isolated bound morphemes enter an RL without lexical support, and analogical extension. For example, he considered the Yiddish plural formative *-im* (e.g., *doktójrim* 'doctors') an analogical extension of the plural suffix identified in pairs borrowed from Hebrew, such as *min – mínim* 'sort – sorts', but not an "outright transfer of a highly bound morpheme" (Weinreich 1953: 32). The most recent and detailed treatment of the immediacy of the process of affix borrowing is Seifart (2015). Seifart argues that affix borrowing can be either immediate (in his terms, 'direct') or mediate ('indirect') and proposes three criteria to discern between these two types (Seifart 2015: 513). The first criterion is the existence in a recipient language of a set of morphologically complex loanwords, each of which contains an affix with a common and recognizable semantic component (e.g., *profitable*, *honorable*). The second criterion is the existence in a recipient language of a set of loanword pairs, made up by a borrowed word and a corresponding borrowed derivate with an affix that triggers constant and recognizable semantic changes (e.g., *profit* ∼ *profit-able*, *honor* ∼ *honor-able*). Seifart's third criterion is lower token frequency of borrowed derivates than of the corresponding bases in a recipient language (e.g., the token frequency of *profitable* is lower than that of *profit*).[17] For Seifart, if these three criteria test positive, this is evidence for 'indirect borrowing'. Conversely, if they do not, he speaks of 'direct borrowing'.

Seifart's choice originates from methodological restrictions concerning the available empirical evidence and it is definitely sound from a descriptive point of view. However, it fails to capture the psycholinguistic dimension of borrowing: the lack of loanwords with a

[17] Actually, Seifart (2015) formulates his third criterion in terms of pairs of 'complex' loanwords and corresponding 'simplex' loanwords. This terminology is, however, inappropriate because the base of a derivate need not be a simplex, as it may be itself morphologically complex.

certain affix and of loanword pairs in a given RL does not exclude their existence in a bilingual speaker's mental lexicon. As Calabrese (2009: 67) puts it, "[o]nce the learned word will be uttered publicly *or even silently*, it becomes a loanword" (emphasis added). To make my point clearer, I will refer to a recent case of derivational borrowing in Norwegian discussed in Nilssen (2015). Nilssen (2015) shows that the English suffix *-ish* creating adjectives of similarity or approximation, has recently entered Norwegian in colloquial and informal speech. The first occurrence dates from 1996 and there has been a constant increase since 2000. Crucially, *-ish* occurs with Norwegian bases, such as *sunne* 'healthy', *eventyrlig* 'fabulous', *rutinert*[18] 'organized' in (7), but not with English bases.

(9) Norwegian
  a. *Deilige boller som kan gjøres litt sunne**-ish***
     'Delicious buns that can be made a bit healthy-ish.'
  b. *Se eventyrlig**-ish** Nicki Minaj på BET Awards*
     'See a quite fabulous Nicki Minaj at the BET awards.'
  c. *Prøver fortvilt å være rutinert**-ish** i en ellers kaotisk hverdag.*
     'Desperately trying to stay kind of organized despite chaotic circumstances.'

The data collected by Nilssen (2015) also include forms such as *pukeish*, *shitish*, *waterproofish*, but these only occur in English text chunks, such the following ones.

(10) Norwegian
  a. *random shit**-ish** videoblogg*
  b. *To pjuk or not to puke…kind of puke**-ish***
  c. *outdoor waterproof**-ish** IP-spycam!*

The examples in (10) clearly resemble codeswitching behavior. As such, they are not recorded in dictionaries and do not count as attested loanwords in Norwegian in the sense of Seifart's (2015) first criterion. Thus, if we applied Seifart's (2015) criteria consistently, the cases in (9) would bear witness to a process of direct borrowing for the Norwegian case. On the other hand, it is precisely codeswitching behavior that reflects proficiency in English. As a matter of fact, Norwegians are highly proficient in English, ranking #3 out of 100 countries, as a recent survey has established (cf. http://www.ef.co.uk/epi/spotlights/europe/norway/, accessed on 11 August 2020). In other words, although in Norwegian no English-borrowed words bearing the approximating suffix *-ish* are attested, Norwegian speakers have knowledge of English lexemes with that suffix and use them when speaking English and in codeswitching. Undoubtedly, the mental lexicon of most Norwegian speakers proficient in English hosts both morphologically complex English lexemes and corresponding affix-less lexemes. Nevertheless, English loanwords in *-ish* (with approximating meaning) are not attested in Norwegian. Now, why should we claim that this situation

[18] *Rutinert* is an integrated loanword.

is different from that in which morphologically complex loanwords with a relevant affix are *attested* in an RL? If we assume, as Seifart (2015) does, that affix borrowing is processed in two distinct ways, then we would expect this difference to be psycholinguistically motivated. But is this the case? In my opinion, it is questionable whether the two types of affix borrowing proposed by Seifart and endorsed by Pakendorf (2019) reflect a psycholinguistically real partition. While reasonable from a methodological viewpoint, an analysis based on the mere presence, or absence, of loanwords in an RL seems not entirely adequate to motivate two distinct processes of affix borrowing. Language proficiency levels and codeswitching behavior are probably more revealing about the psycholinguistic reality of the borrowing process: one would have to resort to a sophisticated psycholinguistic experimentation to pin down the relevant facts about a given bilingual's mental lexicon, in addition to a sociolinguistic survey of a speech community concerning the level of bilingual proficiency and the language attitudes.

In sum, there is no convincing evidence that borrowing and analogical extension are mutually exclusive phenomena and that affix borrowing comes in two types. It seems more plausible that affix borrowing always involves a process of extraction of formatives – whether this occurs overtly or silently – and a process of extension within the lexicon.

4 Conclusion and overview of the thematic issue

In this article, I have shown that the term *borrowing*, especially when it refers to bound morphology, is sometimes used indiscriminately in the literature, to cover phenomena that are not coextensive. I have argued for the need to exactly define the notion of morphological borrowing and demarcate it from other types of morphological transfer and hypothesized a Stratal Effect, which, applying to varying extent, gives rise to at least three distinct, psycholinguistically motivated types of morphological transfer. Finally, I have questioned the widespread view that affix borrowing can be either direct or indirect and argued, instead, that it is always an intermediate process, as it involves the extraction of formatives and their diffusion within the lexicon.

This article opens the thematic issue dedicated to *Morphology in Contact*, the central topic staged at the 19th International Morphology Meeting held at WU Vienna in February 2020. This thematic choice is motivated by an upsurge in research activities around the study of contact phenomena occurring in the area of morphology, a tendency testified to by several recent publications (cf. Johanson & Robbeets 2012; Vanhove et al. 2012; Gardani et al. 2015; Gardani 2020a), and by the necessity to provide in-depth studies on the role of language contact in morphological change. The next five papers cover a wide range of topics drawing evidence from typologically diverse language families such as Romance, Slavic, Northwest Caucasian, Finnic, and Chadic.

In "Borrowing non-canonical inverse between Kabardian and Abaza", Peter M. Arkadiev studies an isogloss that Abaza, a polysynthetic ergative Northwest Caucasian language, shares with its neighbor and distant relative Kabardian. The shared phenomenon is the use of the deictic directional prefixes monitoring the relative ranking of the subject and indirect object on the person hierarchy. As the author

demonstrates, this structural parallelism is the result of pattern borrowing from Kabardian into Abaza, which has led to increased paradigmatic and syntagmatic complexity of Abaza verbal morphology.

In "Language contact and morphological competition: Plurals in central Sicily", Silvio Cruschina studies inflection class competition in the central Sicilian dialect of Mussomeli. The data and the statistical analysis show that inflection class choice is positively correlated with the age of the speakers, with plural *-i* classes being more productive amongst young speakers, while the plural *-a* classes being stable and the plural *-ura* classes being gradually disappearing. As clearly indicated by the age variable, the ongoing development is ascribable to the contact of Sicilian with dominant Italian.

In "Plural indefinite quantifier on the Romance-Slavic border", Alberto Giudici & Chiara Zanini study the plural indefinite quantifiers *uni/une* in the Istriot dialect of Sissano, Istria, unique in the Italo-Romance domain, and argue that the existence of these quantifiers was induced by contact with Croatian. A statistical analysis shows that a higher degree of grammaticalization of the quantifier is observable in the younger generation of speakers than in the older ones, thus lending support to the language contact hypothesis.

In "Language contact and typological change: The case of Estonian revisited", Johanna Laakso investigates the typological change from agglutinative morphology towards increasing fusion occurred in Estonian, showing that it is not only internally motivated by sound change, as traditionally assumed, but also the result of contact with German over six centuries, as well as deliberate change in connection with language planning and standardization from the 19th century onwards.

Finally, "Pattern borrowing and hybridization in Mubi (East Chadic): The importance of congruence", by Lameen Souag, is devoted to the plural system of Mubi (East Chadic, Afroasiatic). Souag demonstrates that, while some elements of this root-and-pattern morphology may be conserved from earlier stages of Afroasiatic, others reflect the influence of Chadian Arabic, the regional lingua franca. The process of influence involves not just straightforward pattern borrowing but also the reshaping of inherited patterns, providing support to the hypothesis that the presence of a similar pattern in the recipient language facilitates the spread of morphological patterns.

Abbreviations

The abbreviations used in this paper are based on Lehmann (2004) and the Leipzig Glossing Rules (available at https://www.eva.mpg.de/lingua/resources/glossing-rules.php). In addition, RL stands for Recipient Language and SL stands for Source Language.

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