

THE EMERGENCE OF MARKED STRUCTURES IN THE INTEGRATION OF LOANS IN ITALIAN

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0. Introduction¹

Two trends are frequently noted cross-linguistically in loan integration processes: morphologically, borrowed nouns are often uninflected, and, phonologically, they frequently undergo gemination of the word-final consonant.

In two varieties of Italian (standard Italian and those varieties of Italian spoken in North America, henceforth referred to as American Italian) we observe both processes: in both American Italian and standard Italian borrowed nouns tend to be assigned to the class of uninflected nouns (1a), and in American Italian we find gemination of the word-final consonant (1b).²

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|-----|----|---|--------------------|------------------|
| (1) | a. | assignment to class of uninflected nouns: | | |
| | | i. <i>fellow</i> | [fa'lɔ+] (sg./pl.) | American Italian |
| | | ii. <i>euro</i> | ['ɛwro+] (sg./pl.) | standard Italian |
| | b. | gemination: | | |
| | | <i>bill</i> | ['billo] | American Italian |

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¹ The following abbreviations are used in this paper: *pl.* 'plural', *sg.* 'singular', *fem.* 'feminine', *mas.* 'masculine', *dim.* 'diminutive', *aug.* 'augmentative'. The transcriptions given in this paper do not represent the only attested pronunciations. For example, the tenseness of the mid vowels varies greatly in Italian.

² For loan integration processes in standard Italian see D'Achille & Thornton (2003), Dardano (1986), Dressler & Thornton (1996), Gusmani (1981), Klajn (1972), Repetti (1993a), (1993b), Thornton (2001), (2003), and references therein. In this paper, data on loans in standard Italian are primarily from Dressler & Thornton (1996), Lepschy & Lepschy (1988:111), Thornton (2001), and field research. American Italian was/is spoken by immigrants whose native language was/is a southern Italian dialect (see Haller 1993). Data used in this paper are from Danesi (1985), Di Vita (1931), Menarini (1939), Ortisi (1951), Tropea (1978), Zamboni (1986), and field research. See Danesi (1985), Rabeno & Repetti (1997), Repetti (1993a), and references therein for a discussion of loan integration processes in American varieties of Italian.

The data in (1) are surprising since in Italian nouns tend not to be uninflected, and, universally, geminate consonants are marked phonological structures. Furthermore, in (1a) we see another marked structure resulting from the integration process: final stress. While recent contributions to the literature of loan word phonology have successfully accounted for the "emergence of the unmarked" phenomena common cross-linguistically (Broselow et al. 1998), it is surprising that we find these marked structures resulting from the loan integration process.

In this paper I show that the data in (1) can be accounted for by the *Principle of Morphological Analysis of Borrowed Nouns*: when speakers encounter a foreign noun, they analyze it morphologically as a stem (Repetti 2003). For Italian, this means that the borrowed noun is not analyzed as morphologically complex, even if it ends in a vowel which could be interpreted as an inflectional suffix. (See §4 for a discussion of exceptions.)

- (2) *Principle of Morphological Analysis of Borrowed Nouns*:
foreign noun = Italian stem

The new Italian stem has to be incorporated into one of the noun declension classes. If possible, no additional morphological material (i. e., inflectional morphemes) should be added to the noun. In other words, the right edge of the stem should be aligned with the right edge of the prosodic word. This allows us to account for the data in (1a). Within an Optimality Theoretic model (Prince & Smolensky 1993), we can formalize this process with the morpho-phonological alignment constraint in (3).

- (3) Align-R (Stem, PrWd)
i. e., do not add an inflectional morpheme after the stem

If the new Italian stem cannot be assigned to a morphological class without the addition of an inflectional morpheme, then a vowel suffix (which functions as an inflectional morpheme) is added. However, the stem and suffix are kept prosodically separated through gemination of the final stem consonant. In other words, if the constraint in (3) cannot be satisfied, then the right edge of the stem should be aligned with another prosodic category, a syllable. This allows us to account for the data in (1b).

- (4) Align-R (Stem, σ)
i. e., if a suffix must be added, keep it prosodically distinct from the stem

Both alignment constraints ((3) and (4)) have the effect of containing the stem within a prosodic unit separate from any other morphemes.

In this paper we will see that certain phonological changes that loans undergo (gemination and stress shift) may be driven by morphological considerations (Principle (2) and the structure of noun inflection classes). We will see how the principle in (2) and the constraints in (3) and (4) allow us to account for all the patterns in (1). The processes investigated in this paper have to do with the ways in which Italian speakers analyze foreign nouns morphologically (2) and then integrate them into the morphological and phonological system of Italian ((3) and (4)). Once the foreign nouns are assigned to one of the inflection classes, they are treated as

regular Italian nouns. In other words, the constraints in (3) and (4) are part of the loan integration process and do not affect native words.

This paper is organized as follows. First I briefly discuss the system of Italian noun inflectional morphology that I adopt in this paper (§1). Then I propose a unified account of the morphological and morpho-phonological integration and adaptation of borrowed nouns (§2 and §3). In §4 I analyze the treatment of *a*-final fem. nouns, and in §5 I discuss loan integration processes in older varieties of Italian. I conclude the paper in §6.

1. Italian Noun Morphology

Three declension classes are traditionally identified for Italian nouns: mas. nouns ending in /o/, fem. nouns ending in /a/, and mas. or fem. nouns ending in /e/, along with long lists of "irregular" nouns. Recently, however, morphologists have suggested a more detailed organization of Italian noun inflection classes (D'Achille & Thornton 2003, Dressler & Thornton 1996, Thornton 2001). The criterion used in classifying nouns is the one suggested by Aronoff (1994): an inflection class shares the same set of inflectional realizations. As seen in (5) and (6) for each inflection class of Italian nouns, the same singular and plural suffixes are used, regardless of gender (D'Achille & Thornton 2003, Thornton 2001).³ (In (5) and (6) the main gender is also indicated.)

(5) inflection classes I-V (inflected nouns)

class I	class II	class III	class IV	class V
sg. /o/-pl. /i/	sg. /a/-pl. /e/	sg. /e/-pl. /i/	sg. /a/-pl. /i/	sg. /o/-pl. /a/
m: palo f: mano	m: Ø f: pala	m: cane f: chiave	m: problema f: arma	m: dito f: dita
main gender: mas.	main gender: fem.	main gender: mas./fem.	main gender: mas.	main gender: mas.sg./fem.pl.

(6) inflection class VI (uninflected nouns)

class VIA (final C)	class VIB (final stressed vowel)				
C/C	à/à	è/è	ì/ì	ò/ò	ù/ù
m: gas f: gang	m: sofà f: metà	m: bebè f: matinée	m: martedì f: pipì	m: casinò f: squaw	m: ragù f: virtù
main gen: mas.	main gen: fem.	main gen: mas.	main gen: mas.	main gen: mas.	main gen: fem.

class VIC (final unstressed vowel)				
a/a	e/e	i/i	o/o	u/u
m: delta f: Ø	m: golpe f: carie	m: kiwi f: analisi	m: euro f: flebo	m: guru f: bantu
main gen: mas.	main gen: mas.	main gen: mas.	main gen: fem.	main gen: mas.

³ Harris (1985, 1991, 1992) shows that the Spanish suffixes /o/ and /a/ are exponents of inflection class and should not be considered as gender marking suffixes.

The only classes that are fully productive are I, II, and VI. D'Achille & Thornton (2003) and Thornton (2001) suggest that class III is no longer productive in standard Italian; however, Thornton (2001) notes at least one exception (*consolle/consolli* (fem.)), and, as we see in (11c) below, it is still fully productive in North American varieties of Italian. Similarly, at least one neologism is noted for class IV: *pigiama/pigiama* (mas.).

The "uninflected" nouns in category VI consist of a bare stem with no inflectional suffixes (6). In standard Italian, this class is divided into three subcategories: uninflected nouns ending in a consonant (VIA), a stressed vowel (VIB), or an unstressed vowel (VIC).⁴ In American Italian, the only class of uninflected nouns is VIB, those ending in a stressed vowel. Speakers of American Italian usually have a southern Italian dialect as a native language, and in many conservative southern dialects, like older varieties of Italian (see §5), classes VIA and VIC are not productive or present.

The "uninflected" nouns in class VI consist of a bare stem, so that the singular form is identical to the plural form, and derivational suffixes are added directly to the stem.

(7) Class VIA (final consonant)

bar+	‘bar’ (mas.)	jeep+	‘jeep’ (fem.)
bar+	‘(pl.)’	jeep+	‘(pl.)’
bar+etto	‘(dim.)’	[dʒip:]	+one ‘(aug.)’

(8) Class VIB (final stressed vowel)

papà+	‘Dad’ (mas.)	città+	‘city’ (fem.)
papà+	‘(pl.)’	città+	‘(pl.)’
papa+rino	‘(dim.)’	citta+dina	‘(dim.)’

(9) Class VIC (final unstressed vowel)

a. final vowel is deleted when a derivational suffix is added

cinema+	‘movie theater’ (mas.)	diocesi+	‘diocese’ (fem.)
cinema+	‘(pl.)’	diocesi+	‘(pl.)’
cinem+etto	‘(dim.)’	dioces+ano	‘diocesan’

b. final vowel is retained when a derivational suffix is added

cine+	‘movie theater’ (mas.)	radio+	‘radio’ (fem.)
cine+	‘(pl.)’	radio+	‘(pl.)’
cine+asta	‘worker in film industry’	radio+lina	‘(dim.)’

Note that among class VIB nouns (8), the final vowel of the stem may be adjacent to the initial vowel of the suffix (*judo+ista*), and sometimes an epenthetic consonant separates the two vowels (*papa+rino*). We find a similar situation with class VIC nouns (9): the stem and derivational suffix can be adjacent (*cine+asta*) or separated by a consonant (*radio+lina*). (The

⁴ Dressler & Thornton (1996) note that in standard Italian, some recent mas. nouns ending in *o* are assigned to class I (*embargo, tango, mango, torero, macaco, gazebo, gaucho, gringo*) while others are assigned to class VIC (*euro, contralto, soprano, kimono, shampo, avocado, lazo, jumbo, auto* ‘bus’, and the ‘accorciamento’ *frigo* < *frigorifero* ‘refrigerator’). See Thornton (1996) for a discussion of ‘accorciamenti’.

latter form is alternatively analyzed as consisting of two suffixes: radio+olo+ino. Thanks to Anna Thornton for pointing this out.) Note also that there are two groups of uninflected nouns ending in an unstressed vowel (class VIC): those that lose their final vowel when a derivational suffix is added (9a), and those that retain the final vowel when a derivational suffix is added (9b). I will not discuss the different behavior of the final vowel in (9a) vs (9b) except to note that the nouns in (9a) are more common than the nouns in (9b).

2. Morphological Integration of Borrowed Nouns

In this section we discuss the ways in which borrowed nouns are assigned to one of the inflection classes identified in §1.⁵ (Fem. *a*-final nouns are discussed in §4.) We noted above (§0) that cross-linguistically borrowed nouns may remain uninflected in the borrowing language. This has been claimed for Russian (Corbett 1991:72), Lelemi (Corbetti 1991:79), and many Bantu languages (Corbett 1991:72-73, Byarushengo 1975:82). We will see that the same holds for Italian.⁶

In standard Italian, consonant-final loans tend to retain their segmental structure and become class VIA mas. or fem. nouns.⁷

(10) standard Italian (class VIA)

French:	<i>bazar</i>	[bad'dzar]	mas.
	<i>boutique</i>	[bu'tik]	fem.
English:	<i>basket</i>	['basket]	mas.
	<i>miss</i>	[mis]	fem.

⁵ I will only discuss loan words ending in a consonant or an unstressed vowel in the loaning language, but not loan words ending in a stressed vowel in the loaning language. The latter usually retain their original metrical structure and become class VIB nouns.

(i) final stressed vowel retained

Spanish:	<i>baccalà</i>	[bakka'la]	'dried codfish'
French:	<i>sofà</i>	[so'fa]	'sofa'
	<i>bidè</i>	[bi'dɛ]	'bidet'
	<i>tassì</i>	[tas'si]	'taxi'
	<i>bureau</i>	[bu'ro]	'bureau'

However, in some cases a loan word ending in a stressed vowel may undergo stress shift, and the final unstressed vowel is interpreted as a vocalic suffix (inflectional morpheme).

(ii) stress shifted to penult

English:	<i>shampoo</i>	[ʃamp+o] (pl. [ʃamp+i])
	<i>kangaroo</i>	[kaŋ'gur+o] (pl. [kaŋ'gur+i])

⁶ Very little work has been done on the assignment of loan words to declension classes, but much work has been done on the assignment of gender to loan words (Corbett 1991, Fisiak 1975, Gregor 1983, Poplack, Pousada & Sankoff 1982, Rabeno & Repetti 1997, SurrIDGE 1982, Thornton 2003, Weřna 1980, Wissemann 1966). Thornton (2003) shows that, in Italian, gender is assigned to loan words on the basis of "semantic rules" (the meaning of the noun determines its gender) and "phonological rules" (the phonological form of the noun determines its gender), but not "morphological rules" (the morphological class of the noun determines its gender).

⁷ The loaning language is the one with which Italian had contact. For example, *bazar* is a Persian word, but it was introduced into Italian from French, so it is listed as a French loan.

In conservative North American varieties of Italian, consonant-final English loans are integrated as follows: the final consonant is lengthened, a suffix is added (*o*, *a*, *e*), and the noun becomes a class I, II or III noun, respectively.

(11) North American varieties of Italian (class I, II, III)

a. noun becomes class I noun (mas.)

bill ['bill+o]

brick ['brikk+o]

b. noun becomes class II noun (fem.)

rug ['ragg+a]

tip ['tipp+a]

c. noun becomes class III noun (mas. or fem.)

ham ['amm+e] mas.

street ['stritt+e] fem.

Nouns ending in an unstressed vowel are assigned to class VIC in standard Italian.

(12) standard Italian (class VIC)

-i	mas.	bikini, body, city, harakiri, jockey, jolly, lady, safari, yeti
	fem.	(‘accorciamento’: bici < bicicletta ‘bicycle’)
-e	mas.	golpe, coyote, kamikaze, pope ‘orthodox priest’
	fem.	consolle
-u	mas.	guru, bantu ‘Bantu man’
	fem.	bantu ‘Bantu woman’
-o	mas.	euro, soprano, kimono, shampo, avocado (see footnote 4)
	fem.	Gestapo, Tipo ‘type of car’, Ritmo ‘type of car’
-a	mas.	panda, lama (‘llama’, ‘Buddhist monk’), koala, yoga, pigiama
	fem.	Ø (see §4)

In American varieties of Italian, nouns ending in an unstressed vowel in the loaning language undergo stress shift and are assigned to class VIB.

(13) North American varieties of Italian (class VIB)

a. common nouns:

<i>aunty</i>	[en'ti]	<i>country</i>	[kun'tri]
<i>dago</i>	[di'gɔ]	<i>fellow</i>	[fa'lɔ]/[fa'lu]
<i>money</i>	[mu'ni]	<i>nephew</i>	[ni'fju]
<i>party</i>	[pa'ri]	<i>pussy</i>	[pu'si]
<i>welfare</i> ⁸	[wo'fe]	<i>window</i>	[win'dɔ]

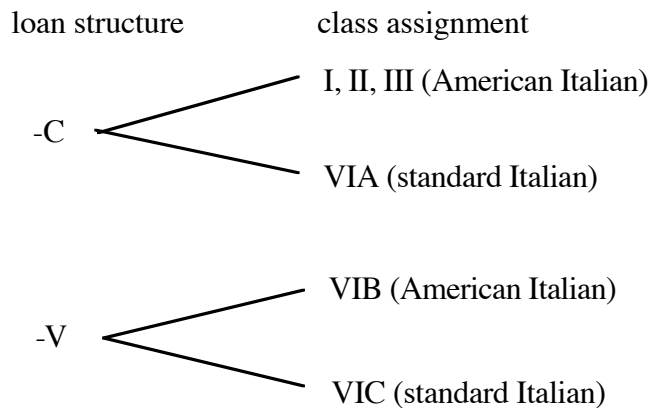
⁸ See footnote 17.

b. proper names:

<i>Josey</i>	[dʒo'si]	<i>Louie</i>	[lu'i]
<i>Mary/Marie</i>	[me'ri]	<i>Patsy</i>	[pat'tsi]
<i>Polly</i>	[pa'li]	<i>Sadie</i>	[se'ri]
<i>Teddy</i>	[te'ri]	<i>Tommy</i>	[to'mi]

The patterns of morphological integration of loans described above are summarized in (14).

(14) assignment of loans to inflection classes

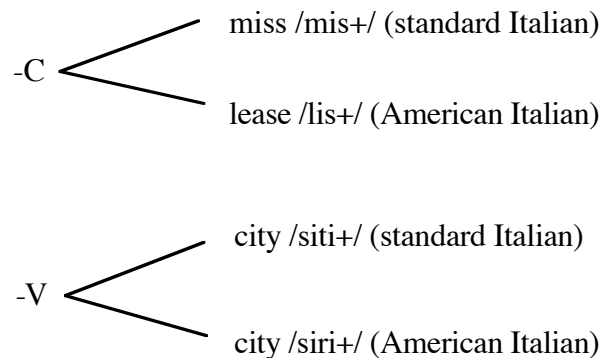


We can see that most nouns are assigned to one of the "uninflected" classes (VI): standard Italian uses class VIA and VIC productively, while in American Italian only class VIB is available, and it is used productively.

These facts, along with the fact that in older varieties of Italian loans were never assigned to inflection class VI (see §5 below), support and further refine the findings of D'Achille & Thornton (2003) who note that the most significant historical change in Italian noun morphology is the increased productivity of class VI. While in the 13th century 2.7% of the nouns belonged to class VI, today 9.5% of nouns are assigned to this class. And the distribution of nouns within the three subgroups of class VI has also changed. While nouns ending in a stressed vowel (VIB) are present from the earliest stages of the history of Italian, other types of uninflected nouns — those ending in an unstressed vowel (VIC) and those ending in a consonant (VIA) — appear much later: the former make their debut in the Renaissance period, and the latter only in the 20th century.

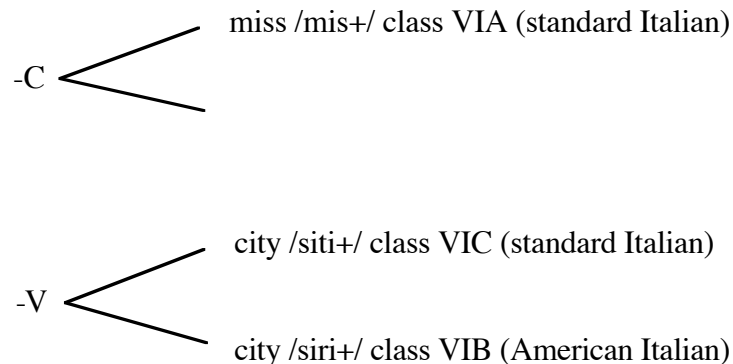
According to the Principle in (2), Italian speakers morphologically analyze a foreign noun as equivalent to an Italian stem. This stem is a bare stem and does not have an inflectional suffix associated with it, so foreign nouns are analyzed morphologically as shown in (15).

(15) morphological analysis of loans according to Principle (2)



Ideally, no additional morphological material (i. e., a suffix) should be added. In this way, the alignment constraint (3) requiring the right edge of the stem to be aligned with the right edge of the prosodic word is satisfied. Therefore, we would expect all loans to be assigned to class VI: consonant-final loans to class VIA, and vowel-final loans to class VIC. This is precisely what we find in standard Italian which has both classes VIA and VIC available. However, in American Italian, classes VIA and VIC are unavailable, so certain phonological changes take place so that loans can be incorporated into the one available "uninflected" class (VIB): vowel-final nouns are incorporated into this class by undergoing stress shift.

(16) assignment of loans to inflection class VI



Support for the proposal that stress shift in American Italian is driven by morphological rather than phonological constraints comes from the fact that final stress is a highly marked phonological structure cross-linguistically, and we would not expect phonological constraints to select this structure. Furthermore, the borrowing language usually attempts to maintain the stress of the source word (Kenstowicz ms), and in the cases examined here, final stress is non-etymological.

The only loans that cannot be assigned to one of the "uninflected" classes are consonant-final nouns in American Italian. Instead, these nouns have a suffix added and are incorporated

into one of the "inflected" classes. We will see in the next section that a phonological change (i. e., gemination) takes place so that the stem is kept prosodically separate from the suffix.

3. Phonological Integration of Borrowed Nouns

3.1 Consonant-Final Nouns

I have shown above that the morphological interpretation of foreign nouns is driven by the principle in (2): the foreign noun is interpreted as an Italian stem. Given the constraint in (3), consonant-final nouns are categorized in class VIA in standard Italian with few or no metrical changes. If class VIA is not present (as in American Italian), a vowel suffix which functions as an inflectional morpheme is added, and the final consonant is geminated.

Consonant gemination in loans is common cross-linguistically. For example, it is found in Kannada (Sridhar 1990), Cantonese (Silverman 1992, Yip 1993), Japanese (Katayama 1998, Shinohara ms), and Italian (Repetti 1993a), and there are a number of proposals in the literature regarding the motivation for gemination in loans. (See also Abraham ms.)

One analysis of gemination in loans has been proposed by Katayama (1998) who uses the framework of Sympathy Theory and suggests that consonant gemination serves to preserve the moraicity of coda consonants. Repetti (1993a), Silverman (1992), and Yip (1993) argue that gemination in loans is a means of satisfying metrical requirements. Shinohara (ms), following a proposal by Tsuchida, claims that gemination in French and English loan words in Japanese is a strategy for satisfying an alignment constraint: the right edge of the stem must be aligned with a syllable, as in (4).

Following Shinohara, I suggest that gemination takes place in order to keep the stem prosodically distinct from the suffix. (In Japanese, as in Italian, "Align R is a constraint observed specifically in the adaptation process, not in the other parts of Japanese lexicon" (Shinohara ms:21)).⁹

⁹ Another analysis is to consider gemination in loans as due to an Output-Output Faithfulness constraint whereby the foreign form, for example, *lock*, is compared with possible adapted forms, [ˈlo.ko] and [ˈlok.ko]. The latter form with the geminate consonant is selected because its moraic structure (the /k/ in [ˈlok.ko] is moraic) better corresponds to the moraic structure of the foreign form (the /k/ in *lock* is moraic). This analysis seems to hold for other areas of Italian grammar as well. For example, in standard Italian, when a derivational suffix is added to a consonant-final loan, the final consonant is lengthened: /dʒip/ + /one/ > [dʒipˈpoːne] ‘jeep (aug.)’; and when a consonant-final word is followed by a vowel-initial word, the final consonant lengthens: /dʒip/ + /amerikano/ > [dʒippameriˈkaːno] ‘American jeep’ (see Chierchia 1986). In both cases we can account for the gemination in the output forms using an Output-Output Faithfulness constraint: the moraic (geminate) /p/ in [dʒipˈpoːne] and [dʒippameriˈkaːno] corresponds to the moraic /p/ in the base form [dʒip]. However, this analysis does not hold for the data presented in §5. In older varieties of Italian we find gemination in loans even when there is no other output form that has a corresponding moraic consonant. For example, Spanish *bellaco* is adapted as *vigliacco* ‘coward’: the geminate /k/ in the Italian form does not correspond to a moraic consonant in the Spanish form or any other output form.

- (17) a. *lease* ['lis:+a] b. *lease* ['li.s+a]



The final consonant of the stem in (17b) is resyllabified with the suffix, whereas the stem in (17a) is fully contained within a syllable, satisfying the constraint in (4). Since (17a) is the actual form in American Italian, we can conclude that the constraint in (4) is more highly ranked than markedness constraints barring codas and geminate consonants, and constraints banning epenthesis of morphological material.

In the tableau in (18) we see the way in which a consonant-final foreign noun is adapted to the morpho-phonological structure of Italian. Since the Align-R(Stem, PrWd) constraint (3) is highly ranked, we expect candidate (18a) to be the output. This is in fact what we find in standard Italian. However, in American Italian nouns cannot end in a consonant, suggesting that the constraint *C# is ranked even higher than Align-R(Stem, PrWd), i. e., class VIA is not present. Therefore, candidate (18a) cannot be selected. So the next best candidate, (18c), is selected despite the violations of the lower-ranked markedness and faithfulness constraints. (The epenthetic suffix is underlined.)

(18) CVC	Align-R(Stem, PrWd)	Align-R(Stem, σ)	DEP	NoCoda	*C:
(a) CVC ₊				*	
(b) CV.C+ <u>v</u>	*	*	*		
(c) CVC:+ <u>v</u>	*		*	*	*

We will now consider nouns which end in consonant clusters. When an illicit cluster is found, standard Italian may assimilate the cluster (if word-internal, /kb/ > /[bb]) or ignore it ([ks]) (19a), and the noun is assigned to class VIA. American Italian is less tolerant of consonant clusters, and may insert an epenthetic to break up the illicit cluster (/ks/ > [k_is]) (19b) before assigning the noun to one of the inflected classes (I, II, or III).

- (19) a. standard Italian: *juke-box* [dʒub'bɔks]
 b. American Italian: *box* ['bɔk_isə]

The American Italian data which undergo epenthesis are particularly interesting when the interaction between epenthesis and stress assignment is considered. Although a detailed study of this phenomenon is beyond the scope of this paper, some observations are relevant.

If possible, stress is retained on the original stressed vowel (Kenstowicz ms).

- (20) *clams* ['klɛm_is_i]
fix ['fik_is_i]

However, if, after epenthesis, the original stressed vowel is not in penultimate or antepenultimate position (the preferred positions for the stressed vowel), stress may be shifted. Crucially, the position of the newly stressed syllable depends on the location of the epenthetic vowels since stress may not fall on an epenthetic vowel. (See Alderete 1999 for a discussion of Head-DEP, a constraint banning stress assignment on epenthetic vowels, and Broselow ms.) If the penult contains an epenthetic vowel, stress is assigned to the antepenult (21a). If, alternatively, the antepenult contains an epenthetic vowel, stress falls on the penult (21b).

- (21) a. antepenultimate stress
tulips *['tulip*isi*] / [tu'lip*isi*]
 b. penultimate stress
business *['bisin*isi*] / [bisin'i*isi*]
picnic *['pikkin*iki*] / [pikk'i'n*iki*]

One final observation regarding the American Italian data in (19)-(21) has to do with gemination. Observe that in the words with antepenultimate stress, gemination is not found. Remember that we had claimed that gemination was a means of keeping the stem separate from the suffix. (The final *s* in the nouns in (20) and (21) is interpreted as part of the stem.) So why is gemination not found in cases like *clams* *['klɛmm*isi*] or *['klɛm*isi*]. Here again, Optimality Theory provides some insight. While it is important for the stem to remain prosodically separate from the suffix (i. e., because of the high ranking Align-R(Stem, σ) constraint), Head-DEP and the metrical rules of the language requiring the stressed syllable to be followed by light syllables (abbreviated here as WSP, Weight-to-Stress-Principle) are more highly ranked.

As seen in the following tableau (22), candidates (c) and (d) respect the Align-R(Stem, σ) constraint, but are not selected as the output because they violate one of the higher ranked metrical constraints. Candidates (a) and (b) respect the high ranking metrical constraints, but violate Align-R(Stem, σ). Candidate (b), the form with unnecessary gemination, is eliminated because of a fatal violation of *C:/NoCoda, leaving candidate (a) as the winner.

(22) <i>clams</i>	Head-DEP	WSP	Align-R(Stem, σ)	*C:/NoCoda
(a) 'klɛ.mi.s+i ←			*	
(b) 'klɛm:i.s+i			*	*!
(c) 'klɛ.mɪs:+i		*!		*
(d) klɛ.'mɪs:+i	*!			*

These facts can also be used to argue against an analysis of gemination as a means of satisfying metrical requirements on stressed syllables (i. e., stressed syllables must be closed). If gemination served that purpose we would expect candidate (b) or (d) to be selected.

3.2 *Vowel-Final Nouns*

In standard Italian, vowel-final loans are adapted with few or no metrical changes. We have seen that in North American varieties of Italian, borrowed nouns ending in an unstressed vowel undergo stress shift so that the final vowel becomes stressed. In §2 I suggest that stress

shift is a way of incorporating foreign nouns into class VI, and specifically class VIB, the only "uninflected" category available in this variety of Italian. Membership in this class requires the final vowel to be stressed, so stress is shifted to the final vowel.

(23)	foreign noun <i>penny</i>	morphological analysis /peni+/ 	phonological adaptation [pe'ni]
------	------------------------------	---------------------------------------	------------------------------------

This analysis of stress shift in American Italian also allows us to account for the curious difference in treatment of nouns vs. non-nouns. As seen in (24), non-nouns never undergo stress shift. This is because only nouns need to be categorized into morphological class VI, and specifically VIB which requires final stress.¹⁰

(24) American Italian non-nouns do not undergo stress shift

<i>easy</i>	[ˈisi]	<i>crazy</i>	[ˈkɾezi]
<i>funny</i>	[ˈfani]	<i>lazy</i>	[ˈlɛsi]
<i>never</i>	[ˈnɛva]	<i>merry</i>	[ˈmɛrri] (see 'Mary, Marie' (13b))
<i>skinny</i>	[ˈskini]	<i>stingy</i>	[ˈstintʃi]
<i>tomorrow</i>	[tuˈmarro]	<i>yellow</i>	[ˈjɛllu]

Other analyses of stress shift in American Italian loans have been presented in the literature. One proposal is that the words with final /i/ in (13) undergo stress shift for phonological reasons: word-final [i] in English is inherently long and attracts stress (Menarini 1939:155). Even if we extend Menarini's (1939) analysis to include other English word-final tense vowels, his explanation does not hold since we find stress shift only with nouns; non-nouns ending in /i/ (or any other vowel) do not undergo stress shift (24).

Stress shift in recently borrowed nouns is also found sporadically in standard Italian (25). (See also footnote 18.)

(25) final stress in recent (19th and 20th century) loans in standard Italian

<i>judo</i>	[dʒuˈdɔ]
<i>kapo</i>	[kaˈpɔ] ‘prisoner in charge of Nazi barracks (< Ka(marad) Po(lizei))’
<i>karate</i>	[karaˈtɛ]
<i>iglù</i>	[igˈlu] (also [ˈiglu] (Migliorini 1940))
<i>Indù</i>	[inˈdu] (also [ˈindu] (Prati 1940))
<i>tabù</i>	[taˈbu] (also [ˈtabu] (Prati 1940))
<i>yo-yo</i>	[joˈjo]

¹⁰ Not all nouns undergo stress shift. Di Vita (1931) lists the following proper names with penultimate stress: *Mikey* [ˈmakki], *Frankie* [ˈfrɛŋki], *Sammy* [ˈsemi]; Ortisi (1951) includes some nouns with penultimate stress: *city* [ˈsiri], *penny* [ˈpeni], *baby* [ˈbebi], *daddy* [ˈderi], *candy* [ˈkenti], as does Danesi (1985): *gravy* [ˈgrevi]. Furthermore, one reviewer notes variation among adjectives as well: [ˈskini]/[skiˈni].

These data have been analyzed as having final stress because of the influence of French pronunciation, and Prati (1940) claims specifically that the examples with final stressed *ù* are due to French influence. However, this explanation is problematic for a number of reasons. Why, for example, would French prosody influence the pronunciation of *u*-final Sardinian surnames by non-Sardinian Italians (Migliorini 1940) (26a), the pronunciation of Biblical names (26b), and the pronunciation of a handful of Latin fourth declension nouns which have undergone a stress shift (26c)? Clearly French influence cannot be invoked to account for the stress patterns in these cases.¹¹

(26) stress shift in *u*-final nouns

a. pronunciation of Sardinian surnames by non-Sardinian Italians

Porcu [por'ku]

b. Biblical names

Esau [esa'u]

Belzebu [beldze'bu]

c. Latin fourth declension nouns

tribus > [tri'bu]

Jesus > [dze'su]

While the stress shift in (25) might be due to French influence, the stress shift in (26) must have another explanation. I propose that it is a way of marking these "foreign" nouns as bare stems, i. e., as uninflected class VIB nouns (rather than VIC nouns which are less common or absent in certain varieties of Italian; see also §5).

In the tableau in (27) we see the way in which a vowel-final foreign noun is adapted to Italian grammar. Since the Align-R(Stem, PrWd) constraint (3) is the most highly ranked, we expect candidate (27a) to be the output. This is in fact what we find in standard Italian. However, since in American Italian uninflected nouns cannot end in an unstressed vowel (i. e., class VIC is not present), candidate (27a) cannot be selected. So the next best candidate, (27b), is selected despite the violation of the lower-ranked markedness constraint, NonFinality (as well as constraints favoring faithfulness to the stress pattern of the source word (Kenstowicz ms)).

(27) CVCV	Align-R(Stem, PrWd)	Align-R(Stem, σ)	NonFin	*C:
(a) 'CVCV ₊				
(b) CV'CV ₊			*	
(c) 'CV.C+V	*	*		
(d) 'CVC:+V	*			*

¹¹ A few vowel-final loans from Tigrinya also have final stress.

carcadè [karka'de] 'medicinal drink'

ghezzi [gedz'dzi] 'in Abyssinian law, an injunction'

These nouns might also be categorized with the nouns in (25). However, final stress in these cases might be due to the pronunciation of the word in Tigrinya. Kogan (1997:429) notes that "[s]tress in Tigrinya has no phonological value and easily shifts from one syllable to another. Dynamic stress is very weak and sometimes almost imperceptible. In many cases it falls on the last syllable...".

There is another motivation for final stress shift in loans: if the foreign word ends in a falling diphthong, stress invariably falls on the final syllable (see Repetti 1993a, 1993b): American Italian: *goodbye* [gub'baɪ], *subway* [sob'weɪ]; standard Italian: *D. J.* [di'dʒɛj], *playboy* [ple'bɔj], *Samurai* [samu'raj]; foreign toponyms: *Hawaii* [a'waɪ], *Shanghai* [ʃaŋ'gaj]. Harris (1983) notes that Spanish words ending in a glide must have final stress. The same appears to hold for Italian as evidenced by the following facts. First, verb forms ending in a glide invariably have final stress: *cantai* [kan'taj] 'I sang', *canterai* [kante'raj] 'you will sing', *canterei* [kante'reɪ] 'I would sing'. Second, the singular forms of the verb *disfare* 'to undo' can be pronounced with stress on the first or second syllable in the first person sg. (*disfo* ['disfo]/[dis'fo]) and third person sg. (*disfa* ['disfa]/[dis'fa]), but in the second person sg., which has a final glide, only final stress is possible: *disfai* *['disfaj]/[dis'faj]. Third, nouns ending in unstressed /eo/ are pluralized with heterosyllabic /ei/: *contemporaneo/contemporanei* 'contemporary (mas. sg./mas. pl.)' [kon.tem.po.'ra.ne.i] thereby avoiding a structure with penultimate stress and a final glide: *[kon.tem.po.'ra.nej] (however, some speakers do not reject this pronunciation). Finally, certain possessive adjectives undergo stress shift when a final /i/ is added, possibly to avoid penultimate stress when there is a final glide: *mio/miei* ['mio]/['mjeɪ] 'my (mas. sg./mas. pl.)', *tuo/tuoi* ['tuo]/['twɔj] 'your (mas. sg./mas. pl.)', *suo/suoi* ['suo]/['swɔj] 'his/her (mas. sg./mas. pl.)'. (I am unaware of any explanation in the literature regarding the (synchronic) retention of the /ɔ/ in the second and third person sg. forms, or the insertion of /ɛ/ in the first person sg. form.)

3.3 *An Aside on Latin Fourth Declension Nouns*

In (26c) we see that some Latin fourth declension nouns undergo stress shift. The Latin fourth declension is unusual because many fourth declension nouns are fem. nouns ending in /us/, such as *tribus*, which have a mismatch between the gender of the noun (fem.) and the final morpheme /us/ which is usually associated with mas. gender. (Other fourth declension nouns are mas., *Jesus*, or neuter, *cornu* 'horn'.) There are four types of processes observed in the evolution of fourth declension nouns from Latin to Italian.

One possibility is for the noun to retain its mismatched structure, so that the noun remains fem. but ends in /o/. In standard Italian, the only noun that followed this conservative evolution is the noun meaning 'hand' (28a), although in conservative southern Italian dialects, we find many more examples of this process: Calabrian *acus* (fem.) > [aku] (fem.) 'needle' (Rohlf's 1968:66). Most fourth declension fem. nouns ending in /us/ either underwent a change in gender so that the final vowel was interpreted as a marker of mas. gender (28b), or the final vowel was changed to /a/ to better reflect the fem. gender of the noun (28c).¹² Another possibility was to categorize the noun as an invariable class VI noun. This could be accomplished two ways: by classifying the noun as a class VIB noun with a final stressed vowel (28d), or by assigning it to

¹² In standard Italian, the process illustrated in (28c) is only attested with nouns referring to females. However, there are other examples of this type of change in Tuscan dialects: *manus* (fem.) > [mana] 'hand', *acus* (fem.) > [aga] 'needle' (Rohlf's 1968:66). On the other hand, Old Italian *suoro* 'sister' became *suora*, but the truncated form *suor* before a name (*Suor Maria* 'Sister Mary') is the last vestige of the earlier form *suoro*.

class VIC with a final unstressed vowel. This latter option is attested for Old Tuscan as well as in some southern Italian dialects: *la suoro/le suoro* ‘the sister/(pl.)’ (Rohlf 1968:18).¹³

(28)	a.	<i>manus</i> (fem.)	>	man+o (fem.)	‘hand’
	b.	<i>domus</i> (fem.)	>	duom+o (mas.)	‘cathedral’
		<i>ficus</i> (fem.)	>	fic+o (mas.)	‘fig’
		<i>acus</i> (fem.)	>	ag+o (mas.)	‘needle’
	c.	<i>nurus</i> (fem.)	>	nuor+a (fem.)	‘daughter-in-law’
		<i>surus</i> (fem.)	>	suor+a (fem.)	‘nun’
	d.	<i>tribus</i> (fem.)	>	tribù+ (fem.)	‘tribe’
		<i>Jesus</i> (mas.)	>	Gesù+ (mas.)	‘Jesus’

The analysis proposed above (§3.2) can be extended to the examples in (28d): stress shift is a means of classifying these nouns as uninflected class VIB nouns.

4. Fem. *a*-Final Nouns

We will now deal with fem. nouns ending in *a*.¹⁴ These nouns are treated differently from other vowel-final loans: they are not assigned to class VIC in standard Italian, and they are not assigned to class VIB in American Italian. Instead, these nouns are interpreted as morphologically complex class II fem. nouns with an /a/ suffix functioning as an inflectional morpheme, and they do not undergo gemination.¹⁵

(29) fem. *a*-final nouns treated as class II nouns¹⁶

a. standard Italian

<i>coca-cola</i>	<i>Panda</i> ‘type of car’
<i>corrida</i>	<i>papaia</i>
<i>dacia</i>	<i>rumba</i>
<i>geisha</i>	<i>sauna</i>
<i>gincana</i>	<i>siesta</i>

¹³ In the earliest Italian documents we often find doublets like [tri'bu]/['tribo] (attested as both mas. and fem.) < *tribus* and [dʒe'su]/['dʒeso] < *Jesus*, with the oxytonic form winning out definitively only in the 16th century (Cortelazzo & Zolli 1992).

¹⁴ The analysis used to account for fem. nouns ending in *a* also holds, in part, for those mas. nouns ending in *o* that are assigned to class I. (See footnote 4.)

¹⁵ Dressler & Thornton (1996) show that some *a*-final fem. nouns may not be canonical class II nouns: *rumba*, *samba*, *Fiesta* ‘type of car’.

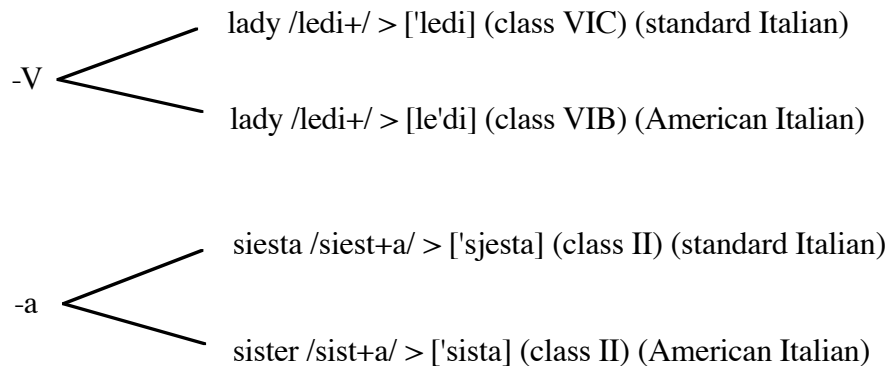
¹⁶ In some varieties of Spanish spoken in New York, we find a similar phenomenon. For example, while automobiles are generally mas. in Spanish (*el Buick*, *el Volvo*), a type of car whose name ends in *a* is considered fem. (*la Mazda*) (Margo Delli Carpini, p. c.). See also Poplack, et al. (1982) for a discussion of similar data involving the adaptation of English nouns in Puerto Rican Spanish.

b. American varieties of Italian¹⁷

<i>daughter</i>	['dɔra]	<i>sister</i>	['sista]
<i>freezer</i>	['frisa]	<i>sweater</i>	['skwɛra]
<i>Laura</i>	['lɔra]	<i>soda</i>	['sɔra]
<i>lover</i>	['lɔva]	<i>water</i>	['vwɔra]

In the tableaux in (18) and (27) we see how the integration of consonant-final and vowel-final foreign nouns can be accounted for using the alignment constraints in (3) and (4). The data in (29) cannot be accounted for in the same way. First, they seem to represent a violation of the Principle in (2) since they are not analyzed as an Italian stem. Why are they analyzed as morphologically complex? Why aren't they analyzed as an Italian stem and categorized as class VIC nouns in standard Italian? Why don't they undergo stress shift in order to be classified as VIB nouns in American Italian?

(30) morphological analysis and phonological integration of vowel-final loans



Second, fem. *a*-final loans are special in yet another way. We saw in §3.1 that consonant-final nouns borrowed into American Italian undergo gemination when a vowel suffix is added: an English CVC noun may be integrated into American Italian by epenthesizing an /a/ suffix and geminating the final consonant (CVC:a). However, an English noun with a CVCa structure is interpreted as having an /a/ suffix, but the preceding consonant is not geminated. In other words, the *a*-final loans are not subject to the Align-R(Stem, σ) constraint which would result in gemination, but are directly assigned to class II with no metrical changes.

(31) American Italian class II loans

<u>CVC (with gemination)</u>		<u>CVCa (no gemination)</u>	
<i>jar</i>	['dʒarr+a]	<i>daughter</i>	['dɔr+a]
<i>lease</i>	['liss+a]	<i>freezer</i>	['fris+a]

¹⁷ This pattern is particularly well-attested in the American varieties of Italian spoken in New York and other *r*-dropping areas of the United States. In these areas, English words ending in [ɚ] are pronounced with final [ə], and the schwa is interpreted as a suffix, /a/.

Why are *a*-final fem. loans treated differently from all other loans? Thornton (2001:486) observes that class II is special in that it is the only inflectional class that contains nouns of one gender only (fem.), and she speculates that this might be the reason for the patterns observed. Notice also that within the "uninflected" categories (see (6)), there is only one group that contains nouns of one gender only: class VIC *a*-final nouns are all mas. So, it is only with *a*-final loans that we find an unequivocal correlation between suffix and gender/class assignment: among recent loans, all *a*-final mas. nouns are assigned to class VIC, and all *a*-final class VIC nouns are mas.; all *a*-final fem. nouns are assigned to class II, and all *a*-final class II nouns are fem.

The special status of fem. *a*-final loans (i. e., they are exempt from the usual integration process driven by the Principle in (2) and the constraints in (3) and (4)) is part of a larger pattern of special treatment of *a*-final words found in Italian grammar. First, while *a*-final fem. personal names and place names can readily be pluralized, *o*-final mas. names are more likely to remain uninflected ((32a) and (32b)). Other *a*-fem./*o*-mas. pairs show similar patterns: the word for Sunday, *domenica*, is regularly pluralized, while the word for Saturday, *sabato*, may remain unchanged in the plural (32c); letters of the alphabet ending in *a* (such as *acca* 'h') may be treated as regular class II nouns, while letters ending in *e* (such as *effe* 'f') are uninflected (32d) (see Lepschy & Lepschy 1988:111). Also, the inflected plural of abbreviations ending in *a* is less marked than the inflected plural of abbreviations ending in *o* (32e). Finally, unstressed word-final *a* tends not to be found in "uninflected" categories such as prepositions and adverbs. In fact, while prepositions and adverbs frequently end in unstressed *e* and *o*, they rarely end in unstressed *a*. Interestingly, when we do find unstressed *a* in this context, it behaves (phonologically) differently from other vowels in that it triggers *raddoppiamento sintattico* (RS) which is usually triggered by a final stressed vowel (Repetti 1991). Compare the examples in the second column of (32f) which behave as expected (unstressed final vowel does not trigger RS) with the examples in the first column which behave exceptionally (unstressed final vowel does trigger RS). (There is a handful of words ending in an unstressed vowel other than *a* which also triggers RS: *come* 'as', *dove* 'where', *qualche* 'some', *ogni* 'each'.)

(32) special status of *a*-final fem. nouns (sg./pl.)

	<i>/a/-final</i>		<i>other vowels in final position</i>
a. personal names:	Maria/Marie	vs.	Marco/*Marchi
b. place names:	Venezia/Venezie	vs.	Milano/*Milani
c. days of the week:	domenica/domeniche	vs.	sabato/*sabati
d. letters of the alphabet:	acca/acche	vs.	effe/*effi
e. abbreviations:	CIA/(?)cie	vs.	UFO/*ufi
f. uninflected categories:	da [rr]oma 'fom Rome'	vs.	di [r]oma 'of Rome'
	sopra[tt]utto 'aboveall'	vs.	sotto [t]utto 'below all'

Given the facts outlined above showing the special status of final *a*, it is not surprising that fem. *a*-final loans are treated specially.

5. Pre-Modern Italian

In older varieties of Italian (pre-19th century) borrowed nouns were treated differently than in the modern varieties. Consonant-final loans were adapted by having a suffix added, the final consonant was lengthened, and the noun became a class I, II, or III noun (similar to American Italian).

(33) consonant-final loans

a. loan became class I noun (mas.)

Spanish:	<i>caracol</i>	caracoll+o	‘movement of a horse’
Arabic:	<i>kaff</i>	caff+o	‘odd number’

b. loan became class II noun (fem.)

English:	<i>beef-steak</i>	bistecc+a	‘steak’
Longobard:	<i>zan</i>	zann+a	‘fang’

c. loan became class III noun

Arabic:	<i>ḡulāb</i>	giulebb+e	‘syrup’
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Vowel-final loans were analyzed as morphologically complex, consisting of a stem + suffix. A noun ending in *o* was interpreted as a class I mas. noun, and a loan ending in *a* was interpreted as a class II fem. noun. The prediction is that nouns ending in *e* would be interpreted as class III nouns, however, data are difficult to find. The only case I have found is the Spanish term *Don Quixote* which may be treated either as a regular class III noun, or as an uninflected class VIC noun.

(34) vowel-final loans

a. loan became class I noun (mas.)

Spanish:	<i>tabaco</i>	tabacc+o	‘tobacco’
Venetian:	<i>gheto</i>	ghett+o	‘ghetto’

b. loan became class II noun (fem.)

Spanish:	<i>resaca</i>	risac+a	‘surf’
Arabic:	<i>zarāfa</i>	giraff+a	‘giraffe’

c. loan became class III noun

Spanish:	<i>Don Quixote</i>	donchisciott+e	‘Don Quixote’
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Morphologically, all loans were assigned to inflection classes I, II, or III, and none were assigned to class VI (of which only VIB was available).¹⁸

(35) assignment of loans to inflection classes in pre-modern Italian

loan structure	class assignment
-C	I, II, III
-V	I, II, III

¹⁸ However, there are some cases in which vowel-final loans were assigned to class VIB in older varieties of Italian: Arabic *qādī* [ka'di] ‘Islamic judge’, *mufī* [mufti] ‘Muslim jurist’, *Torah* [to'ra], Port. *sagu* [sa'gu] ‘type of flour’, as well as the cases in (26b-c).

Phonologically, all loans underwent gemination in older varieties of Italian. This is in sharp contrast to what we see for the modern varieties in which vowel-final loans are never subject to gemination: in standard Italian no metrical changes take place, and in American Italian vowel-final nouns undergo stress shift (except *a*-final nouns). Consonant-final nouns are metrically unchanged in standard Italian, but they undergo gemination and suffixation in American Italian.

A summary of the morphological and phonological treatment of borrowed nouns in these three varieties of Italian is given in (36). Categories of loans that are treated morphologically and phonologically similarly in different varieties are shaded.

(36)	final-C	final-V	final- <i>a</i>
standard Italian	<i>miss</i> [mis+] (VIA)	<i>euro</i> [ˈɛwro+] (VIC)	<i>yoga</i> [ˈjɔg+a] (II)
American Italian	<i>lease</i> [ˈliss+a] (I/II/III)	<i>window</i> [wiˈdɔ+] (VIB)	<i>daughter</i> [ˈdɔr+a] (II)
pre-mod. Italian	<i>zan</i> [ˈtsann+a] (I/II/III)	<i>tabaco</i> [taˈbakk+o] (I/II/III)	<i>resaca</i> [riˈsakk+a] (II)

In the borrowing process, the main morphological difference between older varieties of Italian and the modern varieties is that new nouns were not assigned to class VI in pre-modern Italian, while they preferably are in the modern varieties. In older varieties of Italian only class VIB was available, but it was not used productively in the loan integration process. (However, see footnote 18.) Why? In §2 we analyzed the productivity of class VI in the modern varieties as being driven by the Principle in (2), namely, that native speakers of Italian analyze foreign nouns as Italian stems. In older varieties of Italian this Principle was not in effect: Italian speakers did not analyze foreign nouns as equivalent to Italian stems. Instead, vowel-final nouns were analyzed as having internal morphological structure and assigned to classes I, II, or III, and consonant-final nouns had a vowel suffix added and were similarly assigned to one of the "inflected" classes.¹⁹

(37)	pre-modern Italian <i>principle (2) not active</i>	≠	modern varieties <i>principle (2) active</i>
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The next question to be addressed is why all loans underwent consonant gemination in pre-modern Italian. In the modern varieties, fem. *a*-final nouns are analyzed as morphologically complex, but the final consonant is not geminated. In fact, the only time we find gemination in the modern varieties is with consonant-final nouns in American Italian. I claim that the motivation for gemination in older varieties of Italian (all loans) is the same as the motivation for gemination in American Italian consonant-final loans: gemination is a means of satisfying the alignment constraint in (4) which requires the suffix to be kept prosodically distinct from the

¹⁹ If Principle (2) is not active, we would not expect to see the effects of constraint (3): Align-R(Stem, PrWd).

stem: Align-R (Stem, σ). (As noted in the Introduction (§0), this constraint is part of the integration process. Once the noun is integrated, it is treated as a regular Italian noun.)

(38)	pre-modern Italian	=	modern varieties
	<i>constraint (4) active</i>		

Notice the curious difference in the treatment of *a*-final loans in pre-modern Italian and in the modern varieties. In pre-modern Italian these nouns underwent gemination, while in the modern varieties they do not.

(39)	foreign noun	morph. analysis	integrated form
standard It.	<i>sauna</i>	<i>saun + a</i>	<i>saun<u>n</u> + a</i>
Amer. It.	<i>soda</i>	<i>sod + a</i>	<i>sod<u>d</u> + a</i>
pre-mod. It.	<i>garrāfa</i>	<i>garrāf + a</i>	<i>caraff<u>f</u> + a</i>

In §4 we argued that *a*-final loans in the modern varieties are not subject to constraint (4) because of the unique correlation between final /a/ and gender/class assignment. The fact that *a*-final loans were subject to constraint (4) in older varieties of Italian suggests that the correlation between suffix and gender/class was weaker in pre-modern Italian than in the modern varieties. As a result, the "special status" that these nouns enjoy in the modern varieties was not in effect in the older varieties.

(40)	pre-modern Italian	≠	modern varieties
	<i>a-final fem. loans</i> do not have a "special status"		<i>a-final fem. loans</i> have a "special status"

Notice that the differences between the earlier varieties and the modern varieties of Italian ((37) and (40)), are differences in *morphology* which have profound effects on the *phonological* treatment of loans. Since the Principle of Morphological Analysis (2) was not active in pre-modern Italian, nouns were generally not assigned to class VI and did not undergo stress shift. And since in pre-modern Italian *a*-final fem. nouns were not more "special" than other nouns, *a*-final nouns were treated like all other nouns and were subject to gemination. In the modern varieties *a*-final nouns have a special status and are not subject to gemination or stress shift. In each of these cases, the morphology determines the types of phonological processes that borrowed nouns undergo.

6. Conclusions

In this paper, we saw that phonological processes may be driven by morphological considerations. We accounted for highly marked phonological changes that borrowed nouns undergo (consonant gemination and stress shift to the final syllable) as being due to the Principle of Morphological Analysis of Borrowed Nouns (2) and two morpho-phonological Alignment Constraints (3) and (4). We also saw that slight differences in the morphological structures of three varieties of Italian result in major differences in the types of phonological changes that loans undergo.

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