

CRYPTO-VARIATION IN ITALIAN VELAR PALATALISATION*

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Abstract

In this paper, I present new data from a nonce-word test that give us further insight into the synchronic status of the phonological process of velar palatalisation in Standard Italian. Velar palatalisation applies in the plural forms of some nouns and in some it does not. When confronted with novel words and the task to produce plural forms speakers split into two groups, those that apply palatalisation to all new forms and those that do not apply the process. The conclusion drawn from these results is that a uniform but ambiguous surface pattern is analysed in different ways by individual speakers, hence, showing crypto-variation. The results give evidence supporting Pater's (2006) proposal that exceptional application of a process is due to lexical indexation of markedness constraints and exceptional underapplication is due to lexical indexation of faithfulness constraints in Optimality Theory.

1 Introduction

Palatalisation is a wide-spread process or family of processes in Romance languages which is most often analysed from a historical perspective (see e.g. the outstanding contribution by Calabrese 1993). Palatalisation showing synchronic alternations can be observed in slightly distinct incarnations in the inflectional morphology in different lexical categories in present-day Standard Italian. Velar palatalisation applies in some Italian nouns in the masculine plural. Velar or dorsal stops are realised as palatal affricates before the high front vowel /i/ in the plural, as in (1)a. Nouns with a palatal affricate in the singular never show an alternation, as illustrated in (1)b. If palatalisation applies to velar stops has to be learned item by item, since some nouns do not show the alternation in the plural, as shown in (1)b'. There is a small number of nouns which vacillate, i.e., they can be realised with or without palatalisation, as in (1)c (Celata & Bertinetto (2005)).¹

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¹ Celata & Bertinetto (2005) note that each of the few vacillating nouns actually has a preferred plural form. Since palatalisation and blocking of the process are indicated in the Italian orthography (an *h* is written between *c* or *g* and the letter representing the triggering vowels *e*

(1) Italian velar palatalisation in nouns

- | | | |
|-----|--------------------------|--------------------------|
| a. | amíko, amítʃi, amíke | ‘friend/pl./fem.pl.’ |
| b. | bróntʃo, bróntʃi | ‘sad face/pl.’ |
| b’. | kwóko, kwóki | ‘cook _N /pl.’ |
| c. | mániko, mánitʃi / mániki | ‘door handle/pl.’ |

In 2nd conjugation verbs the process applies without any exception before inflectional affixes starting in /i/ and /e/, as shown in (2). The data in (3) illustrate the exceptionless lack of application of the process in 1st conjugation verbs.²

(2) Italian velar palatalisation in 2nd conjugation verbs

- | | | |
|-----|-------------------------------------|-------------------------------------|
| a. | dirídʒere, dirígo, dirídʒi, dirídʒe | ‘direct _V inf./1/2/3sg.’ |
| b. | kwótʃere, kwótʃo, kwótʃi, kwótʃe | ‘cook _V inf./1/2/3sg.’ |
| b’. | *tokere, toko, toki, toke | unattested |

(3) Italian velar palatalisation in 1st conjugation verbs

- | | | |
|----|--|------------------------------------|
| a. | legáre, légi, léga, légo | ‘tie _V inf./1/2/3sg.’ |
| b. | komintʃáre, komíntʃo, komíntʃi, komíntʃa | ‘begin _V inf./1/2/3sg.’ |
| c. | *grukáre, grúko, grútʃi, grúka | unattested |

The questions I will be dealing with in this paper are the following. Looking at the behaviour of nouns (and adjectives) one can arrive at either of two conclusions, A the process is synchronically active and the nouns that do not show it have to be regarded as lexical exceptions or B the process is synchronically inactive and the nouns displaying the alternation have to be listed as exceptions. I will give evidence from a nonce word test that speakers face the same dilemma as linguists in such a case and some speakers choose option A while others choose option B. This result conflicts with the conclusions drawn by Celata & Bertinetto (2005) from a lexical decision task, who maintain that all plural forms of nouns ending in velars are lexically stored while nouns ending in non-velars are produced compositionally.

A further question that is relevant here is to explain the systematic absence of exceptions in the verbal paradigms in the face of a mixed paradigm, that of

and *i* if the consonant is intended to be interpreted as a dorsal. If the *h* is missing a reader will produce an affricate) it was possible to test the frequency of the competing forms of the vacillating stems by running them through an internet search engine (www.google.it). The result was that the frequency of the dispreferred form for each stem is negligible. I will ignore these stems in this paper. For a more detailed discussion see Krämer (in preparation).

² 3rd conjugation verbs behave like nouns. Some verbs show palatalisation, others don’t. The verbs that block palatalisation, though, mostly seem to be derived from other word classes, such as *imboschire* [imboskíre] ‘to afforest’ (from non-palatalising *bosco* ‘forrest’). Thus, in the following account the analysis of 3rd conjugation verbs is by and large parallel to that of masculine nouns. If the generalisation holds true that all 3rd conjugation verbs which block palatalisation are derived from adjectives (or nouns) this could as well be regarded as a case of faithfulness to an output (e.g., *bosco* in the example above) as the base of derivation.

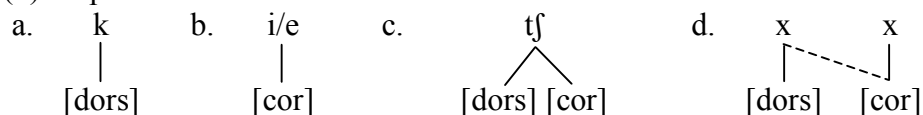
nouns, which allows exceptions. Different grammatical behaviour in (lexical) subcomponents of a single language have been accounted for in a variety of ways, including idiosyncratic lexical marking or pre-specification of features, co-phonologies or morpheme-specific rankings (Inkelas 1999, Anttila 2002) and lexical indexation of lexical items that triggers the activity of lexically indexed constraints (Pater 2000, in press). I analyse the Italian patterns here with lexically indexed constraints and Base-Output faithfulness constraints (Kenstowicz 1996, Benua 1997, Burzio 2000, 2004). Speakers who treat palatalisation in nouns as the exception have a grammar that generally blocks palatalisation and a lexically indexed markedness constraint triggers exceptional application. Speakers who have palatalisation generalised block the process in individual items by a lexically indexed faithfulness constraint. The general blocking and complete lack of exceptions in 1st conjugation verbs is due to high ranking paradigm uniformity constraints.

The paper is organised as follows. Section 2 outlines the basic analysis of velar palatalisation in Italian, taking the 2nd conjugation as the default and blocking in 1st conjugation as the exception, emergent through lexically indexed BO-faithfulness in this paradigm. This core grammar will be used in section 3.2 to explain the behaviour of existing and nonce nouns. Section 3 introduces the methodology and the results of the nonce word experiment (3.1) and integrates these into the grammar developed in section 2 (3.2). Section 4 concludes.

2 Verbs and palatalisation

All 2nd conjugation verbs show palatalisation of dorsal stops at the morpheme boundary before inflectional affixes beginning with an /i/ or /e/. In this class the process has to be regarded as automatic. In terms of representations I assume palatalisation to be the spreading of the place feature [coronal] from these vowels to a preceding [dorsal]. The resulting segment with a complex place feature is realised as an affricate (i.e., [tʃ] or [dʒ]). This is illustrated in (4). All irrelevant nodes and features, for instance those differentiating between /i/ and /e/ are left out of the representation for matters of clarity.

(4) Representation



The analysis exploits Clements & Hume's (1995) and Morén's (2003) assumption that vowels and consonants have the same place features, just attached to different mother nodes. For a more elaborate representation of velar palatalisation in the Parallel Structures Model (Morén 2003) see Morén (2006).

On the constraint-based side of the analysis a constraint triggering spreading has to outrank the relevant faithfulness constraint that blocks spreading.

Since the process applies in morphologically derived environments only there must be some additional faithfulness constraint blocking palatalisation inside morphemes. Krämer (2003, 2005) has argued for an analysis of derived environment effects invoking CONTIGUITY constraints (McCarthy & Prince 1995). A contiguity constraint is violated only if a segment embedded between two other segments in input and output is unfaithful.

(5) CONTIGUITY » PAL » IO-IDENT[place]

The tableau in (6) exemplifies application of the process in 2nd conjugation verbs.

(6) Exceptionless application

	/dirig -i/	CONTIGUITY	PAL	IO-IDENT
☞ a.	diridʒi			*
b.	dirigi		*!	

In the 1st conjugation class we do not find a single verb stem that shows the alternation. Dorsal stops in the stem surface faithfully in the palatalisation environment. I follow Burzio (2000, 2004) in assuming that generalised blocking and the absence of idiosyncratic behaviour is owed to high ranking BO-faithfulness that punishes any deviation from a surface base form. The application context is given in 2nd person singular forms, with the affixation of /-i/. Thus, these forms have to be faithful to some other form, the 3rd person singular or the infinitive, which don't show palatalisation either (if only because of lack of a trigger). This paradigmatic constraint, then, outranks the palatalisation constraint. Since there is regular application in the 2nd conjugation, this faithfulness constraint has to be lexically indexed to 1st conjugation verbs, indicated with a subscript '1' attached to the constraint. The assumption of an additional constraint that is activated only in the evaluation of 1st conjugation verbs saves us from stipulating different rankings for the two verb classes.

(7) *-are* verbs exceptionless non-application:

CONTIGUITY, BO-IDENT[place]₁ » PAL » IO-IDENT[place]

As tableau (8) shows the highly ranked BO-faithfulness constraint issues a protest against the otherwise preferred candidate with a palatalised root-final consonant, since this candidate differs from the base.

(8) Potential exceptional palatalisation in *-are* paradigm

	/leg/ /-i/	BO-IDENT ₁	PAL	IO-IDENT
a.	ledʒi	*!		*
☞ b.	legi		*	
base:	legare / lega			

With one ranking which includes one lexically indexed constraint we account for the absence of a paradigm like hypothetical $\{tokere, toko, toki\}$ as well as for impossible $\{tokare, toko, tof\}$. This is all that is needed to account for the behaviour of verbs and I move on to the discussion of nouns (and adjectives).³

3 Nouns and palatalisation

If we simply proceed with the analysis on the basis of the grammar established for verbs the most important choice regarding nouns seems to be made already. The default established above was application of palatalisation. Thus, nouns that display the alternation can just be fed into the grammar and the correct output will be generated. All the nouns that are immune can be treated in the same fashion as 1st conjugation verbs, they receive a lexical index tied to the activation of a BO-faithfulness constraint with the same index. However, a nonce word experiment shows that the situation is slightly more complex. A further aspect that has to be integrated is the lack of triggering behaviour of /e/.

3.1 How active is velar palatalisation as a process in nouns?

To find out if native speakers of Italian spontaneously palatalise dorsals in plural formation I created a list of nonce words. These words had to comply with Italian phonotactics, not be too similar to any existing words and should be easily readable, because they were intended for presentation in written form. All words were judged by a native speaker. Furthermore they were all checked for inexistence in a dictionary and run through an internet search engine. Only words with zero hits in the dictionary and the internet were included. The items of interest were masculine nouns, indicated by their ending in the letter *o* and had a stem ending in the letter *c* or a double *c* preceded by all five Italian orthographic vowels. The list also contained filler words.⁴

(9) Nonce word list including fillers

1 <i>frunaco</i>	10 <i>flempile</i>	19 <i>giompicco</i>
2 <i>brombulo</i>	11 <i>tapirco</i>	20 <i>rocapado</i>
3 <i>frampeco</i>	12 <i>chiateppo</i>	21 <i>plontico</i>
4 <i>plantico</i>	13 <i>svappa</i>	22 <i>frudalo</i>
5 <i>chiatteno</i>	14 <i>nalico</i>	23 <i>ancico</i>
6 <i>sbancito</i>	15 <i>fiesova</i>	24 <i>picutopa</i>
7 <i>gico</i>	16 <i>smeco</i>	25 <i>gionsicco</i>
8 <i>cincuco</i>	17 <i>cruvacco</i>	26 <i>conchico</i>
9 <i>praco</i>	18 <i>grotulfo</i>	

³ There are though several very interesting issues here which I will not discuss for reasons of space, as for example the alternation between /sk/ and /ʃ:/ or the deletion / coalescence in 1st person plural forms, such as /leg: -iamo/ → [ledʒamo], *[ledʒjamo] etc.

⁴ The test posed a double challenge for the subjects since it is also not clear where Italian places default stress. The data generated in this test were also used to shed light on this issue, see Krämer (in prep., to appear)

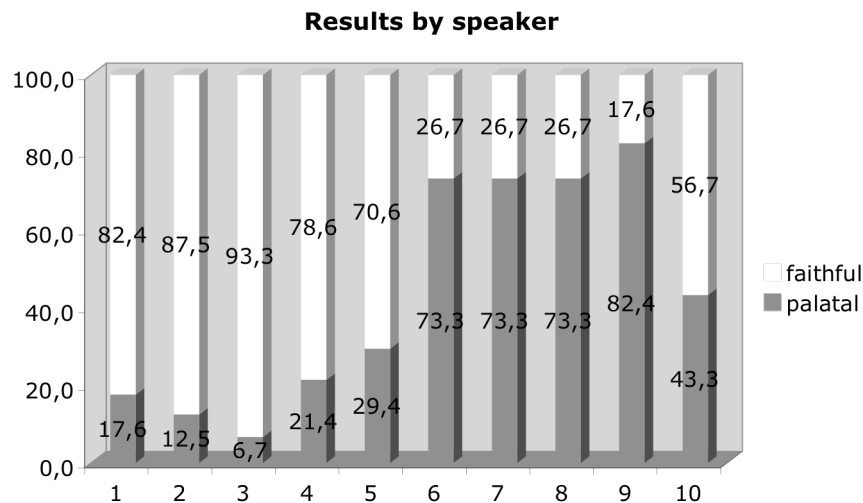
In the test, speakers had to read each word from a list (they did not get an auditory stimulus) and then use it in a plural context using always the same carrier sentence. For the latter they neither got a visual input, since orthography would have told them what to do (depending on whether they encounter, e.g., *smeci* or *smechi*). This corresponds largely to Gleason's (1958) wug test procedure (with the difference that his subjects couldn't read yet). Several of the test words were fillers, they did not contain a root-final dorsal or they were feminine or both. 11 adult subjects were tested of which 3 had to be excluded later for several reasons.⁵

(10) *Carrier sentence:*

Ieri ho visto due _____ .
 Yesterday have-1sg see-past.part two _____ .
 Yesterday, I have seen two _____ .

The chart in (11) displays how many percent of masculine plural forms of stems ending in 'c' each speaker produced with palatalisation (e.g., [pratʃi]) and without (e.g., [praki]). Each bar represents a speaker, except for the last bar, which shows respective percentages of all realisations of all plural forms by all speakers together. Looking at the average one gets the impression that the process is applied or suppressed randomly, i.e., that palatalisation happens at chance level. Thus, the premature conclusion here would be that the grammar is non-deterministic with respect to palatalisation. However, a look at the individuals (bars 1-9) reveals that each speaker has a preference.

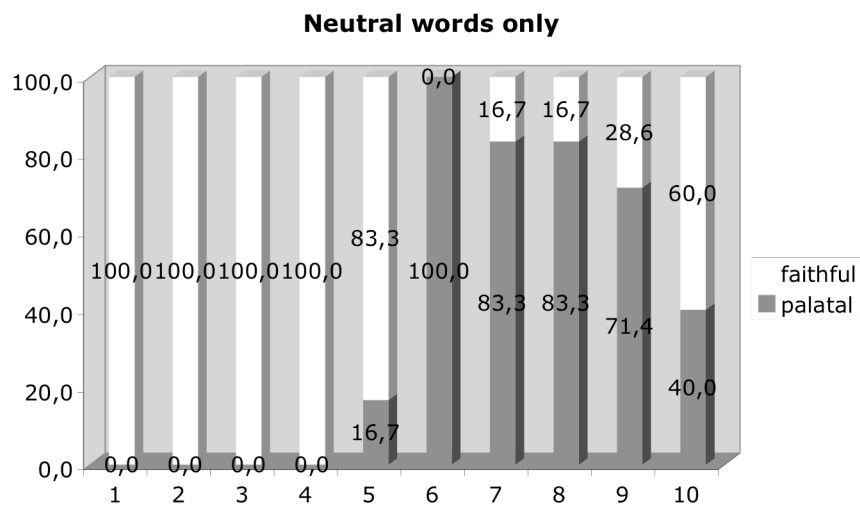
(11)



⁵ One subject did not understand the task properly and did not produce the desired plural forms. The other two were aware of the problem (productivity of palatalisation) and started a discussion of the topic.

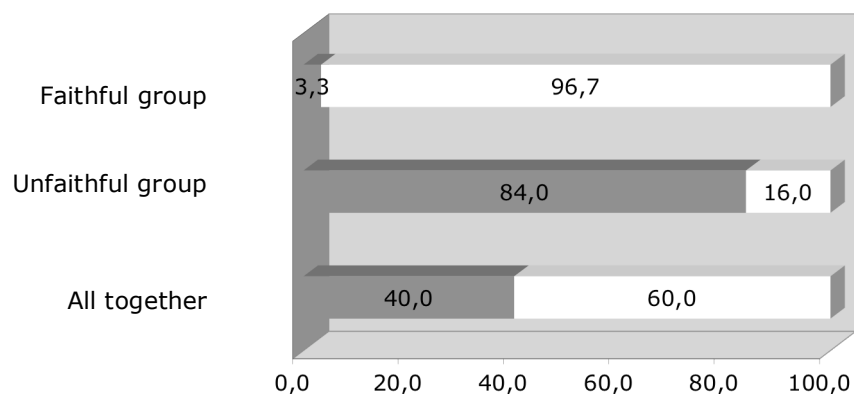
However, the phonological make-up of the test words might have an impact too. For example, geminates could prove to be resistant or a coronal vowel preceding the target consonant could constitute a factor that favours palatalisation. Indeed, it turns out that one of the subjects (represented in bar 6) who favours palatalisation never palatalises geminates and that the latter factor, a preceding coronal vowel (especially 'i') prompts even subjects who consistently do not palatalise to apply the process (speakers represented by bars 1-5). In the next chart the words with geminates and with an 'i' preceding stem-final 'c' are removed and we get an even clearer picture of the subjects' preferences (12). Bar 10 represents the whole group again.

(12)



The chart in (13) has divided the subjects into two groups according to their preference in palatalisation matters.

(13) Non-problematic words only, by group



A further factor that could have played a role here is stress. Dressler (1985) diagnoses a connection between stress placement and palatalisation. Dressler conducted a very similar nonce word test, but provided the written

stimuli with stress marks. He records 85% (nouns) and 95% palatalisation rates in words with antepenultimate stress, but only 55% / 57% palatalised forms in words with penultimate stress. However, this is all he reports and he does not break down his results by candidate as was done here. My subjects, however, placed stress on the penultimate syllable in the majority of the relevant test words and I could not find any significant correlation between stress and palatalisation. The speakers' reactions to geminates and forms ending in the sequence 'ico' is interesting for a more detailed analysis of palatalisation and the role of morphological decomposition (Italian has a derivational suffix *-iko*, which undergoes palatalisation in plural formation and which might have had an influence on performance here). What is important for our current question is that no speaker has a non-deterministic grammar, i.e., we do not find free variation. Instead, each speaker opts for one strategy and sticks to it. The results are quite clear in this respect and I don't regard any further statistical tests necessary to underpin this result.

It has to be noted, finally, that these results are in conflict with the conclusions drawn by Celata & Bertinetto (2005) from an experiment involving a lexical decision task. They concluded from reaction times of participants when judging forms presented as visual stimuli as grammatical or ungrammatical that Italians store all plural forms of nouns with stems ending in dorsals as allomorphs, i.e., in the same way as suppletive forms, while all other plurals are computed online.

3.2 OT analysis of nouns

As said above, two groups of speakers emerged, those that applied palatalisation and those that didn't. I assume that those speakers who palatalise novel words have to have all the non-palatalising items in the existing lexicon marked as exceptions, since one would not expect a competent speaker to treat a novel word automatically as an exception. The same holds vice versa for the other group. For these people all palatalising known items have to carry a lexical mark that identifies them as exceptions. Following the technical strategy applied above in the analysis of verbs the lexical mark or index in the exceptional items points to or activates a highly ranked constraint that blocks palatalisation (for the first group) or one that triggers palatalisation (for the other group).

Before going through the technical implementation of this analysis I first turn to an aspect of the nominal pattern that is known from the existing lexicon. Female nouns and female forms of adjectives never palatalise - like 1st conjugation verbs. As noted above in the verbal paradigm of 2nd conjugation verbs (and 3rd conjugation) affixal /e/ is a trigger of palatalisation. There are two conceivable ways to capture the different behaviour of /e/ in the two lexical classes. Either the /e/ marking feminine gender is represented differently from other mid front vowels that trigger the process, which introduces additional abstractness in the representational component, or palatalisation is blocked in feminine forms because these obey Base-Output faithfulness, just as 1st conjug-

ation verbs do. The latter approach follows the line pursued already to capture blocking in verbs and thus is the preferred choice. The new faithfulness constraint is added to the hierarchy developed for verbs.

(14) Velar palatalisation grammar continued

BO-IDENT[plc]_{fem}, BO-IDENT[plc]_{-are} » PAL » IO-IDENT[plc] » *COMPLEXPLC

The tableau in (15) shows how the BO-faithfulness constraint selects the candidate without palatalisation.

(15) Blocking in female forms

	/amik/ /-e/	BO-IDENT _{fem}	PAL	IO-IDENT
☞ a.	amike		*	
b.	amitʃe	*!		*
base:	amika			

If the same noun is used as a masculine form we get palatalisation now as shown by tableau (16).

(16) Palatalisation default in nouns

	/amik/ /-i/	BO-IDENT _{fem}	PAL	IO-IDENT
a.	amiki		*!	
☞ b.	amitʃi			*
base:	amiko			

This grammar generates the wrong output for nouns and adjectives like *cuoco* ‘chef’. Masculine noun/adjective stems that don't palatalise have to be saved now. Pursuing the same argument as before we can add an indexed BO-faithfulness constraint sensitive to nouns carrying a lexical index. Nouns exceptional to palatalisation get a lexical index that links them to this constraint.

(17) Velar palatalisation grammar

BO-IDENT[plc]_{fem}, BO-IDENT[plc]_{Nx} » PAL » IO-IDENT[plc]

(18) Non-application

	/kwok- _x /-i/	BO-IDENT _{Nx}	PAL	IO-IDENT
☞ a.	kwoki		*	
b.	kwotʃi	*!		*
base:	kwoko			

Participants 6-9 spontaneously palatalise novel masculine words in the plural. This is exactly what is expected if they adhere to this grammar, since new words are of course not lexically indexed. This is illustrated with the evaluation of a nonce noun in tableau (19).

(19) Participants 6-9

	/frampek/ /-i/	BO-IDENT _{Nx}	PAL	IO-IDENT
a.	frampeki		*!	
☞ b.	frampetʃi			*
base:	frampeko			

How does the grammar look like that drives the other group? The indexed constraint on nouns, which causes blocking to emerge is indexed to all nominals in parallel with the constraint indexed to feminine forms. Any stem that palatalises is lexically indexed in this grammar and this index links to an indexed markedness constraint that triggers palatalisation. The index links to a highly ranked copy of PAL. This alternative grammar is given in (20).

(20) Velar-palatalisation-as-exception grammar

BO-IDENT_{fem}, BO-IDENT_{-are} » PAL_y » BO-IDENT_N » PAL » IO-IDENT

The three tableaux in (21) show this grammar in action. Palatalising stem /amik/ has a lexical index which activates the copy of the palatalisation constraint PAL that outranks the BO-faithfulness constraint that causes blocking in un-indexed nouns (compare tableaux i and iii). However, the BO-faithfulness constraint activated by feminine forms is ranked higher than indexed PAL, thus, palatalisation cannot apply to lexically indexed stems when they are used in the feminine form (tableau ii and iv). Again the nominal grammar is an add-on to the hierarchy developed for verbs rather than a co-phonology.

(21) The effect of lexical indexation

i.	/amik/ _y /-i/	BO-IDENT _{fem}	PAL _y	BO-IDENT _N	PAL	IO-IDENT
a.	amiki		*!		*	
☞ b.	amitʃi			*		*
base:	amiko					

ii.	/amik/ _y /-e/	BO-IDENT _{fem}	PAL _y	BO-IDENT _N	PAL	IO-IDENT
☞ a.	amike		*		*	
b.	amitʃe	*!		*		*
base:	amika					

iii.	/kwək/ /-i/	BO-IDENT _{fem}	PAL _y	BO-IDENT _N	PAL	IO-IDENT
☞ a.	kwəki				*	
b.	kwətʃi			*!		*
base:	kwəko					

iv.	/kwək/ /-e/	BO-IDENT _{fem}	PAL _y	BO-IDENT _N	PAL	IO-IDENT
☞ a.	kwəke				*	
b.	kwətʃe	*!		*		*
base:	kwəka					

The grammar looks a bit baroque but the number of indexed constraints is necessary to avoid application of idiosyncratic palatalisation in feminine forms.

Speakers with this grammar treat novel words as not bearing an idiosyncratic index and thus they will follow the pattern exemplified by /kwək/. Since they are nouns the BO-faithfulness constraint indexed to nouns is activated in their evaluation and blocks palatalisation. The higher ranked indexed PAL is very unlikely to get activated since at this stage (the word is new) the speaker has no reason to assume that it has the index that would activate the constraint.

(22) Blocking in novel words

	/frampek/ /-i/	BO-IDENT _{fem}	PAL _y	BO-IDENT _N	PAL	IO-IDENT
☞ a.	frampeki				*	
b.	frampetʃi			*!		*
base:	frampeko					

This second grammar (palatalisation as exception) relies on indexed markedness to generate palatalisation as the exceptional pattern, while the first nominal grammar developed utilised indexed faithfulness to generate under-application as the exception. This analysis follows Pater's (2006) proposal to analyse exceptional application as indexed markedness and exceptional blocking as indexed faithfulness.

To summarise, we have established two grammars, differing in the constraints that are lexically indexed (23). The first grammar (23)a represents the speakers that palatalise nonce or novel words and it has an indexed faithfulness constraint that selects the candidate without palatalisation when a lexically indexed noun stem is in the input. Accordingly, for these speakers, all nouns that block palatalisation carry the lexical index that activates the respective constraint. The second grammar (23)b represents speakers which do not apply palatalisation to novel forms. Palatalisation is blocked in all nouns (in parallel with the treatment of feminine forms as well as 1st conjugation verbs) by a high ranking faithfulness constraint connected via indexation to all nouns. Exceptional application is triggered by a markedness constraint carrying an arbitrary index. This constraint has to rank below the blocking faithfulness constraints indexed to feminine forms and 1st conjugation verbs to exclude idiosyncratic application in these classes. Accordingly, all nouns that do palatalise in the plural carry the index in their lexical representation.

(23) The two grammars

a. Spontaneous palatalisation

BO-IDENT_I, BO-IDENT_{fem}, BO-IDENT_{Nx} » PAL » IO-IDENT

b. Generalised blocking of palatalisation

BO-IDENT_I, BO-IDENT_{fem} » PAL_y » BO-IDENT_N » PAL » IO-IDENT

The data generated in the experiment show that this account is on the right track. Anttila's (2002) proposal of co-phonologies stipulates that co-phonologies arise only in cases where the general grammar has no ranking imposed on the crucial constraints. Thus, we would expect that each Italian noun has either one ranking or the other via lexical co-phonology membership, while novel words are not affiliated to any class or fixed ranking. Coupled with Anttila's (2003) view on how unranked constraints behave, i.e., that they randomly assume a ranking in each evaluation, we expect all our subjects to behave like the group as a whole apparently behaved, i.e., to show free variation. In this hypothetical account the two crucial constraints that are generally unranked are PAL and IO-IDENT. The rest does not play a role except for BO-faithfulness for feminine forms. For the *amico*-type words PAL outranks faithfulness. For *cuoco*-type words the ranking is reversed. When novel words are pluralised the two constraints can assume any ranking, that is in 50% of all cases PAL will outrank faithfulness and in 50% of cases faithfulness will outrank PAL. The predicted surface effect is free variation in each speaker. Since this is not the case the lexical indexation account has to be preferred.

4 Conclusions

The goal of this paper was not to give a full account of the pattern of velar palatalisation in Italian. Rather I had a limited aim: I established an analysis of the basic facts and showed that speakers have two choices when it comes to nominal forms and that speakers actually differ in which choice they make. Thus, there is no point in a discussion to figure out which of the two choices - palatalisation as synchronically active in nouns or palatalisation as the exception - is the better analysis for Italian. They are both adequate.

An alternative account, working along the lines of, e.g., Anttila's theories of lexical idiosyncrasy and variation and following the conclusions drawn by Celata & Bertinetto, could regard all plural forms of all masculine nouns and adjectives with a stem ending in a /k/ or /g/ as lexically stored. This account predicts that speakers don't possess a grammar that can handle novel forms in a straightforward fashion, i.e., they should show free variation between palatalisation and faithfulness when they pluralise novel forms. This was not the case.

Finally, the experiment shows a kind of variation, crypto-variation, that is not directly observable in existing surface forms. The speakers differ in their grammars in a way that is not trivial but has no direct consequences on surface patterns in the existing lexicon. From the analysts point of view the Italian data invite speculation on different alternatives. The choice made here to regard

features as unary valued, precludes choices which we face when dealing with binary features in the sense of Inkelas (1994, 2000), Inkelas, Orgun & Zoll (1997). Inkelas (1994) argues for binary features (i.e., [$\pm F$]) with a third choice, the absence of a value. In this account only lexical items with an underspecified feature undergo a change. However, we would expect the same kind of choice in verbs and feminine nouns. Hence, the approach overgenerates lexical idiosyncrasy. Celata & Bertinetto (2005) give three hypothetical choices for the source of lexical idiosyncrasy in nouns, first palatalisation is fully regular and the blocking forms are the exceptions, second, if palatalisation is unpredictable one might conclude that a) the plural forms of all nouns ending in a dorsal have to be lexicalised and accessed directly rather than being generated online, or that b) all non-palatalising plurals are generated productively (including the non-palatalising stems ending in a dorsal) and the palatalising plurals are stored. As was discussed above the theories of lexical idiosyncrasy and of variation proposed by Anttila within the OT framework give us just one choice. The two groups of masculine nouns fall into two different co-phonologies (i.e., constraint rankings) that are established on the basis of constraints unranked in the general grammar.

The result that several grammars converge on the same output is not uncommon. Having a look at the constraint inventory developed for the typology of stress placement in OT for example it is easy to see that the same surface pattern can be modeled with several rankings. Apoussidou (2007) has shown this in the context of learning. The learning algorithms used by her (Boersma's 1998, 2000 Gradual Learning Algorithm and Tesar's 1998 Error-Driven Constraint Demotion) converge on several grammars that produce the same output pattern rather than to always converge on the same ranking when fed with the same data. Usually, it is difficult to test if this has any correlate in real speakers' behaviour, since the different grammars are simply co-extensional, i.e., they generate the same surface forms under all circumstances. In this paper it was shown that different grammars in different speakers faced with the same data are real. Hence, a theory that has several ways to account for the same set of data does not necessarily vacuously overgenerate grammars and does not have to be regarded as inferior to one that has only one way of explaining a given pattern.

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