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VOWEL ELISION IN TWO VARIETIES OF SPOKEN ITALIAN IS CONSTRAINED BY MORPHOLOGY

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Introduction

This paper investigates the functioning of Vowel Elision (from now on VE) or *elisione,* which consists in the deletion of the final vowel belonging to certain Italian Function Words (Fnc) when followed by vowel-initial Lexical Words (Lex). More in detail, we will try to give an account of the underlying system which governs VE in [Fnc Lex] sequences in two varieties of spoken Italian: Florentine Italian (spoken in Tuscany, central Italy) and Standard Italian as spoken in Lecco (spoken in Lombardy, northern Italy).

Although VE across word boundaries has already been studied in the literature, it has not been adequately described and no proposals have been put forward to account for obligatory, optional and impossible VE in Modern Standard Italian. Our aim is to show that VE applies productively in spoken Italian [Fnc Lex] sequences and that it is not random; rather, it is a morphologically driven phonological process.

The results of this study, based on the data of the C-Oral-Rom corpus by Cresti & Moneglia (2005) and on those elicited from one informant, suggest that the type and number of morphological specifications of the four Fnc word-final vowels/affixes are responsible for highly frequent, optional and rare/impossible VE.

We will account for our findings by an analysis cast in the framework of Optimality Theory (Prince & Smolensky 1993; McCarthy & Prince 1995) and of the Co-phonology Approach (cf., among others, Anttila & Cho 1998; Anttila 2002). Our claim is that the different frequency of occurrence of VE in the two varieties under analysis can be seen as a consequence of the selection of one or the other of two 'available' co-phonologies in deriving an output from an input containing a vowel sequence across word boundaries. Actually, speakers of Florentine Italian tend to select the Co-phonology which favours VE (we will term it *Co-phonology 1*) while speakers of Italian as spoken in Lecco tend to select the other Co-phonology which militates against VE (we will term it *Co-phonology 2*).

The paper is organized in 9 sections. In Section 1 we introduce VE in Italian and we present a report of the results achieved in previous studies on VE. In Section 2 we outline the three types of Fnc under analysis. Section 3 describes the sources of our data as well as the design of our production experiment and the data treatment. In Section 4 we present our results: first we illustrate the functioning of VE in Florentine Italian (4.1) and then in Italian as spoken in Lecco (4.2). Then we compare the results achieved for the two varieties of Modern Standard Italian under observation (4.3). Section 5 offers a general discussion. It consists of three main sub-sections which deal respectively with the morphological specifications of Italian Fnc (5.1), preferred vs optional vs impossible VE (5.2) and exceptionality and variation (5.3). In Section 6 we put forward our proposal for the prosodization of [Fnc Lex] sequences while in Section 7 we interpret our results by means of Optimality Theory together with the Co-phonology Approach. Section 8 deals with some residual issues while Section 9 states the conclusions.

1. Vowel Elision in Italian: the Point of Departure

In Romance languages heterosyllabic vowel sequences (V1V2) across word boundaries can be realized as a hiatus or can be resolved in a variety of ways. One of them is VE: the final vowel (V1) of a word undergoes VE if the following word begins with a vowel (V2), (see, among others, Vogel et al. 1983, Vanvolsem 1983, Finizio 1983, Agostiniani 1989, Nespor 1987 and 1990 and Rosati 2001 for Italian; Bisol 2003 for Brazilian Portuguese; Cabré & Prieto 2003, 2005 for Catalan; Coetzee (forthcoming) for Faialense Portuguese; Tranel 1996 for French and Casali 1997 for a cross-linguistic study)[1].

First of all we want to draw attention to the fact that VE in Italian is reflected in the orthography and it is obligatorily marked by an apostrophe replacing the dropped word-final vowel/affix, as in *lo uomo → l'uomo* 'the man', *una amica →un'amica* 'a female friend' (see, e.g. Regula & Jerney 1975:24-25; Dardano & Trifone 1988:421-422). The only Fnc which refuses the apostrophe is *uno* 'a', it follows that you will never find **un'uomo* as orthographic form, since it would be ungrammatical[2]. It is worth remembering that word-finally there are only four vowel phonemes in Standard Italian: /a, e, i, o/ and they are unstressed (see Bertinetto & Loporcaro 2005:138; De Dominicis 1999:136-139)[3].

Why should speakers apply VE or other anti-hiatus strategies? The answer to this question does not appear straightforward, especially if we think that speakers tend to apply VE also in languages where heterosyllabic vowel sequences across word boundaries are perfectly allowed (as in Italian, among others). From a typological point of view, there is a general tendency for syllables to have onsets and CV may be considered as the unmarked form of syllables (see Tranel 1996, Kenstowicz 1994:250-309 Nespor & Vogel 1986:61-83).

If you take a look at Descriptive Grammars of Modern Standard Italian, you will see that all of them (see Serianni 1988, Regula & Jerney 1975 and Dardano & Trifone 1988, among others) usually say that VE is obligatory with the masculine singular determiners *lo* 'the' and *uno* 'a' while the other Fnc are said to be more or less likely to undergo VE.

VE in Italian has been studied by Vogel et al. (1983), Vanvolsem (1983), Finizio (1983), Agostiniani (1989), Nespor (1987), (1990) and Rosati (2001). The main claim of these studies is that, except for the masculine singular determiners *lo* 'the' and *uno* 'a', the other Fnc can be more or less likely to undergo VE because of inter-speaker and intra-speaker variation. Therefore, the situation concerning VE seems chaotic and no

[1] For studies on VE in languages which do not belong to the Romance family, see Lapointe & Feinstein 1982 (on the Yawelmani dialect of the Amerindian language Yokuts and in Klamath); Kager 1997 (on *Macushi Carib*, a Carib language spoken in Guyana and Brazil, and on *South-Eastern Tepehuan*, an Uto-Aztecan language spoken in Durango, Mexico); Ola & Pulleyblank 2002 (on *Yoruba*, a language spoken in Niger-Congo); Dehé 2006 (on *Icelandic*) and Kabak in press (on *Turkish*).

[2] It is still unclear in literature whether *un* is a *forma elisa* 'elided form' or a a *forma tronca* 'truncated form'. Some authors (see, e.g. Leone 1963) treat *un* as an elided form while others consider it as a truncated form since it refuses the apostrophe (see, among others, Regula & Jerney 1975:111 and Dardano & Trifone 1988:95). Throughout this article we will state that *uno* undergoes VE obligatorily without specifing whether *un* is an elided form or a truncated one.

[3] We know from literature that word-final /e/ can be pronounced as [e] or as [ɛ]. It is generally accepted that in Florentine Italian word-final /e/ is always pronounced as [e] while in Lombardic Italian word-internal /e/ is tendentially lowered to [e̯] or [ɛ̯] but nothing particular is said for word-final /e/ (Loporcaro & Bertinetto 2005).

proposals have been put forward to account either for the underlying system governing VE or for obligatory, optional and impossible VE.

In this paper we will try to give an account of the underlying system which governs VE in spoken Italian [Fnc Lex] sequences. Moreover, we will show that VE is not random; rather, it can be derived from morphological constraints interacting with phonological ones.

2. The Function Words under analysis

As mentioned above, we decided to focus on VE in Spoken Italian [Fnc Lex] sequences. The Fnc (determiners, pronouns and prepositions) under analysis are those listed in *Table 1*[4]:

Table 1 – **Fnc under analysis**	
Determiners	***Lo, La, Gli, Le*** 'the' (m.s., f.s., m.p., f.p.) ***Uno, Una*** 'a' (m.s., f.s) ***Questo/a/i/e*** 'this/these' (adj.) (m.s., f.s., m.p., f.p.) ***Questo/a/i/e*** 'this / these' (pron.) (m.s., f.s., m.p., f.p.) ***Quello/a, Quegli, Quelle*** 'that/those' (adj.) (m.s., f.s., m.p., f.p.) ***Quello/a/i/e*** 'that/those' (pron.) (m.s., f.s., m.p., f.p.)
Pronouns	***Lo, La*** 'it' (m.s., f.s.) ***Li, Le*** 'them' (m.p., f.p.)
	Glielo/a 'it to him/it to her' (m.s., f.s.) ***Glieli/e*** 'them to him/them to her' (m.p., f.p.)
	Mi 'me/to me', ***Si*** 'you' (impersonal), himself/herself, themselves', ***Ci*** 'us/to us', ***Ti*** 'you/to you', ***Gli*** 'him/to him', ***Le*** 'her/to her'
	Ne 'of it/them'
Prepositions	**Prepositional articles** ***Allo/a, Agli, Alle*** 'at/to (the)' (m.s., f.s., m.p., f.p.) ***Dallo/a, Dagli, Dalle*** 'from (the)' (m.s., f.s., m.p., f.p.) ***Dello/a, Degli, Delle*** 'of (the)' (m.s., f.s., m.p., f.p.) ***Nello/a, Negli, Nelle*** 'in (the)' (m.s., f.s., m.p., f.p.) ***Sullo/a, Sugli, Sulle*** 'on/upon (the)' (m.s., f.s., m.p., f.p.)
	Simple prepositions ***da*** 'from' ***di*** 'of'

Some examples of the Fnc given in *Table 1* which undergo or do not undergo VE are given in (1a)-(1h) for determiners, in (2a)-(2k) for pronouns and in (3a)-(3f) for prepositions:

(1a) **Lo, Uno**
l'amico, l'invito, un amico, un invito, etc.
'the friend', 'the invitation', 'a male friend', 'an invitation', etc.

(1b) **La, Una**
l'elezione, l'organizzazione, un'elezione, un'organizzazione, etc.
'the election', 'the organization', 'an election', 'an organization', etc.

[4] In *Table 1* (and also occasionally in the remainder of this paper) we use the following abbreviations: *m.* for 'masculine', *f.* for 'feminine', *s.* for 'singular', *p.* for 'plural', *adj.* for 'adjective(s)' and *pron.* for 'pronoun(s)'.

(1c) **Gli** (determiner)
gli amici, gli occhiali, gl'uomini, gl'album, etc.
'the male friends', 'the glasses', 'the men', 'the albums', etc.

(1d) **Le** (determiner)
le analisi, le amicizie, l'elezioni, etc.
'the analyses', 'the friendships', 'the elections', etc.

(1e) **Questo** / **Quello**
(adj.) quest'anno, quell'incarico, questo appezzamento, etc.
'this year', 'that task', 'this piece of ground', etc.
(pron.) Questo è il babbo, Quello aveva ragione, etc.
'This is Dad', 'He was right', etc.

(1f) **Questa** / **Quella**
(adj.) quest'offerta, quell'esperienza, questa accessibilità, etc.
'this offer', 'this experience', 'this accessibility', etc.
(pron.) Questa ha una struttura rigida, Quella era migliore, etc.
'This has a rigid structure', 'That was better', etc.

(1g) **Questi** / **Quelli** / **Quegli**
(adj.) questi ultimi cinque anni, quegli arnesi, quegl'americani, quest'articoli, etc.
'these last five years', 'those tools', 'those American people', 'these articles', etc.
(pron.) questi arrivavano, quelli eran della mamma, etc.
These arrived:3PL, Those were:3PL of-the mamy, etc.
'These people are arriving', 'They belonged to mum', etc.

(1h) **Queste** / **Quelle**
(adj.) quelle esplosioni, queste attività, quest'altre, quell'applicazioni, etc.
'these explosions', 'these activities', 'these others', 'those applications', etc.
(pron.) queste odiano chiunque, quelle erano belle, etc.
These hate:3PL whoever, Those were:3PL nice, etc.
'These people hate whoever', 'Those were nice', etc.

(2a) **Lo** / **Glielo**
l'hanno saputo, l'ho bevuto, lo immaginavo, lo ho detto, etc.
it have: 3PL known, it have:1SG drunk, it imagined:1SG, it have:1SG said, etc.
'They have known it', 'I have drunk it', 'I imagined it', 'I have said it', etc.
gliel'hai fatto, gliel'ho detto, glielo abbiamo fatto capire, etc.
it-to-him/her have:2SG done, it-to-him/her have:1SG said, it-to-him/her have:1PL made understand, etc.
'You have done it to him/her', 'I have told him/her', 'We have made him/her understand', etc.

(2b) **La** / **Gliela**
l'ho vista, l'avevo incontrata, la integriamo, la odio, etc.
it/her have:1SG seen, her had:1SG met, integrate:1PL her, her hate:1SG, etc.
'I have seen it/her', 'I had met her', 'We integrate her/it', 'I hate her', etc.
gliel'ho prestata, gliela ha aperta, etc.
it-to-him/her have:1SG have lent, it-to-him/her has:3SG opened, etc.
'I have lent it to him/her', 'She/He has opened it for him/her', etc.

(2c) **Li** / **Glieli**
li uso, li ho trovati, l'hai presi, etc.
them use:1SG, them have:1SG found, them have:2SG taken, etc.
'I use them', 'I have found them', 'You have taken them', etc.
glieli ho visti, glieli ho detti, gliel'hanno proibiti, etc.
them-to-him/her have:1SG seen, them-to-him/her have:1SG said, them-to-him/her have:3PL forbidden, etc.
'I have seen them to him/her', 'I have told him/her about them', 'They have forbidden them to him/her', etc.

(2d) **Le** / **Gliele**
le hai fatte, le osservo, l'ho viste, etc.
them have:2SG have done, them observe:1SG, them have:1SG seen, etc.
'You have done them', 'I observe them', 'I have seen them', etc.
gliele ho date, gliel'ho comprate, etc.
them-to-him/her have:1SG given, them-to-him/her have:1SG bought, etc.
'I have given them to him/her', 'I have bought them to him/her', etc.

(2e) **Mi**
m'hanno detto, m'ha aiutato, mi ha dato, mi era sfuggito, etc.
me:DAT-SG have:3PL said, me:ACC-SG has:3SG helped, me:DAT-SG has given, me:DAT-SG had:3SG escaped to me, etc.
'They have told me', 'He/She has helped me', 'He/She has given to me', 'It had escaped to me', etc.

(2f) **Ti**
t'ho detto, t'inventi, ti amo, ti ho chiamata, etc.
you:DAT-SG have:1SG said, you: ACC-SG invent:2SG, you: ACC-SG love:1SG, you ACC-SG have:1SG called: FEM-SG, etc.
'I have told you', 'You invent', 'I love you', 'I have called you', etc.

(2g) **Si**
s'era pensato, s'era detto, s'arrabbiano, si arriva, si impressionano, etc.
you were:2SG thought, you were:2SG told, get:3PL angry, you arrive:'SG, get:3PL upset, etc.
'We had thought', 'You had said', 'They get angry', 'You arrive', 'They get upset', etc.

(2h) **Ci**
ci arrabbiamo, c'aveva raccontato, etc.
ourselves get:1PL angry, us:ACC-PL had told, etc.
'We get angry', 'He had told us', etc.

(2i) **Gli** (dativo)
gli è preso un infarto, gli ho detto, gl'ho comprato, etc.
him:DAT-SG is taken an heart attack, him:ACC-SG have:1SG said, him:DAT-SG have:1SG bought, etc.
'He had a heart attack', 'I have told him', 'I have bought him', etc.

(2j) **Le** (dativo)
le avevo detto, le ho chiesto, etc.
her:DAT-SG had:1SG said, her:DAT-SG had:1SG asked, etc.
'I had told her', 'I had asked her', etc.

(2k) **Ne**
ce n'ho ventuno, ne andiamo fieri, etc.
of-them have:1SG twenty-one, of-it/them are:1PL proud, etc.
'I have twenty-one of them', 'We are proud of them/it', etc.

(3a) **Allo, Dallo, Dello, Nello, Sullo**
all'inizio, dall'accesso, dell'uomo, sull'uso, nell'interno, etc.
'at the beginning', 'from the access', 'of the man', 'about/concerning the use', 'inside', etc.

(3b) **Alla, Dalla, Della, Nella, Sulla**
all'essenza, dall'esperienza, dell'uva, nell'acqua, sull'evoluzione, etc.
'at the essence', 'from (the) experience', 'of the grapes', 'in (the) water', 'about/concerning the evolution', etc.

(3c) **Agli, Dagli, Degli, Negli, Sugli**
agli amici, dagli anni, degli occhi, negli anni, sugli animali, etc.
'at/to the friends', 'from the years', 'of the eyes', 'in/during the years', 'about/concerning the animals', etc.

(3d) **Alle, Dalle, Delle, Nelle, Sulle**
alle amiche, dalle agenzie, delle inserzioni, nelle agenzie, sulle inquietudini, etc.
'at/to the female friends', 'from the agencies', 'of the advertisements', 'in the agencies', 'about/concerning the worries', etc.

(3e) **Da**
viene da Ascoli, mandato da Eugenio, da allora, etc.
'He/She comes from Ascoli', 'sent from Eugenio', 'since then', etc.
d'ora in poi, d'altra parte, etc.
'from now on', 'on the other hand', etc.

(3f) **Di**
delusione d'amore, sono d'accordo, etc.
'love disappointment', 'I agree'
prima di arrivare, milioni di indiani, stato di emergenza, etc.
'before arriving', 'millions of Indians', 'emergency state', etc.

After having given some examples of the Fnc which tend to undergo VE and of those which tend to preserve their full form, we will now turn to the description of our data and methods.

3. Data and Methods

3.1 The sources of the data and the instruments

The data reported in this article come from two different sources. A first source of data is represented by the speech files belonging to the C-Oral-Rom Corpus by Cresti & Moneglia (2005) and representative of Italian as spoken in Florence (Tuscany, central Italy). The second source of the data we analysed comes from a production experiment (based on a questionnaire) and from 10 minutes of free speech (in total 75 minutes

recording). The questionnaire had been prepared to test VE and is made of 211 utterances containing 240 stimuli, i.e. 240 [Fnc Lex] sequences where VE was likely to take place. The experiment was conducted at the University of Konstanz (Germany) and the informant was a female, 24 year old native speaker of Italian as spoken in Rogeno (a variety of Lombardic Italian spoken in the province of Lecco, Lombardy, northern Italy).

All utterances produced by the informant were recorded by means of an *Edirol 24 bit digital R-1 wave/mp3 recorder* (Sampling Rate 44.100 Hz) using a *Sony ECM-MS 957 stereo condensator microphone (50-18.000 Hz), 600 Ohm Impendance,* fixed on a base and positioned at a distance of about 10 cm from the speaker mouth, so as to avoid the reverberation as well as the saturation of the sound.

3.2 The C-Oral-Rom Corpus

The C-Oral-Rom corpus by Cresti & Moneglia (2005) consists of four corpora (French, Italian, Portuguese and Spanish) of spontaneous spoken speech; it is made of 772 spoken texts and 121:43:07 hours of recording. This resource is stored in a DVD and it is integrated with 2 tools: the *WinPitch Corpus* (which allows the direct exploitation of the acoustic information) and *Contextes* (which enables the user to access to the textual information). The four corpora are orthographically transcribed in standard textual format (CHAT format, MacWinney 1994) and are integrated by prosodic tagging.

The Italian Corpus is taken from the LABLITA Corpus, kept by the Linguistic Laboratory of the Italian Department in Florence. The collection of the corpus began in 1970s and it is continually updated (that's why this corpus can be considered an 'open' diachronic corpus). The texts were (and are) mainly recorded in Florence and surrounding Tuscany (Western Tuscany, historically considered the source of the Italian language) and the majority of the speakers has Tuscan origins (see Cresti & Moneglia 2005:1-13; 71-75).

We have been carefully listening to a sample of 11 speech files and we compared the recordings to their transcription (through the option: text-to-speech alignment), so as to be sure that they conformed to each other. We compared the results found in the 11 speech files to those found searching in the whole corpus through *Contextes*, a tool which enables the user to access the textual information without listening to the speech files. It must be pointed out that VE is reflected in the transcription of the C-Oral-Rom corpus by means of an apostrophe for all Fnc with the only exception of *uno* (see §1.).

3.3 A production experiment for Italian as spoken in Lecco

3.3.1 The Questionnaire

The questionnaire used to test VE is made of 240 stimuli, i.e. 240 [Fnc Lex] sequences where VE is likely to take place. Each [Fnc Lex] sequence contains a target V1V2 sequence and the 240 [Fnc Lex] sequences are embedded in 210 utterances.

The 240 stimuli can be divided into 2 groups. A first group of stimuli, was designed to test elision of dorsal vowels, for this reason V1 is always a dorsal vowel

[a,o], as you can see in the examples in (4a)-(4b)[5] (target vowels are boldfaced and underlined):

(4a)	all(**o)** **u**ltimo momento	'at the last moment'
	quell(**o)** **u**omo	'that man'
	un(**o)** **a**mico	'a friend'
	nell(**o)** **a**rmadio	'in the wardrobe'
	quest**o** **e**lefante	'this elephant'
	l**o** **i**nviterò	'I will invite him'
(4b)	nell**a** **o**scurità	'in the darkness'
	l**a** **o**dio	'I hate her'
	l(**a)** **u**nica cosa	'the only thing'
	d**a** **u**n amico	'from a friend'
	quell(**a)** **i**dea	'that idea'
	quest**a** **e**sperienza	'this experience'

Our prediction is that dorsal vowels tend to be deleted nearly regularly in Standard Italian, because they generally express the feature [singular] (*-o*: [masc.sing.], *-a*: [fem.sing.]), which is morphologically less marked than the feature [plural].

A second group of stimuli was designed to test VE of coronal vowels, therefore in each V1V2 sequence V1 is always a coronal vowel [i,e], as you can see in the examples listed in (5a)-(5b):

(5a)	c**i** **e**vitano	'they avoid us'
	l**i** h**o** visti	'I have seen them'
	negl**i** **o**spedali	'in the hospitals'
	gl**i** **a**mici	'the friends'
	m**i** h**a** insegnato molto	'He/She has taught a lot to me'
	quest**i** **i**ndividui	'these people'
(5b)	dall**e** **a**genzie	'from the agencies'
	l**e** **a**vevo chiesto	'I had asked her'
	l**e** **o**sservo	'I observe them'
	l**e** **e**ssenze speziate	'the spiced essences'
	non n**e** **e**ro sicura	'I was not sure of it'
	quest**e** **i**dee	'these ideas'

Our prediction is that coronal vowels tend not to delete in Modern Standard Italian, since they generally express the feature [plural] (*-i*: [masc.plur.], *-e*: [fem.plur.]), which, in contrast to the feature [singular], is morphologically more marked.

3.3.2 Design of the experiment and procedure

The informant was tested in a quiet, closed room. To start with, the informant was asked to choose a topic and to speak freely for about 10 minutes. She chose to speak about her coming in Germany for the first time. This first part of the experiment

[5] Whenever a Fnc final vowel is put between parenthesis, it means that it is impossible to hear the Fnc which it belongs to in its full form in natural speech provided that following word begins with a vowel.

was also recorded and the data we present in the following sections come not only from the results of the questionnaire, but they also take into consideration the utterances produced during this free speech.

The experiment was conducted as follows: first the interviewer pronounced each utterance in the 2nd person singular and then the informant had to repeat the statement in the 1st person singular, as if it was her own statement. I am native speaker of Italian as spoken in central Salento (in Apulia, southern Italy) and I used this variety to ask the informant to produce all the stimuli. Some examples of the statements uttered by me are listed in (6a), (7a), (8a), (9a) while some examples of those uttered by the informant are given in (6b), (7b), (8b), (9b)[6]:

(6a) Dimmi che hai lavorato molto nell**'** **u**ltimo periodo. (nello)
'Tell me that you have been working hard in the last period.'
(6b) Ho lavorato molto nell**'** **u**ltimo periodo. (nello)
'I have been working hard in the last period.'

(7a) Ti chiedo: chi è quell'uomo? Tu mi rispondi che quell**o** **è** tuo padre.
'I ask you: who is that man? You tell me that he is your father.'
(7b) Quell**o** **è** mio padre.
'That is my father.'

(8a) Dimmi che domani all**e** **u**ndici hai un **a**ppuntamento.
'Tell me that tomorrow at eleven (o' clock) you have an appointment.'
(8b) Domani all**e** **u**ndici ho un **a**ppuntamento.
'Tomorrow at eleven (o' clock) I have an appointment.'

(9a) Dimmi che l**'** **a**ssemblea si riunisce una volta a settimana. (la)
'Tell me that the assembly has a meeting once a week.'
(9b) L**'** **a**ssemblea si riunisce una volta a settimana. (la)
'The assembly has a meeting once a week.'

It is improbable that my variety of Standard Italian as spoken in central Salento (in the province of Lecce, southern Italy) influenced the informant to drop all the word-final vowels/affixes I dropped or to preserve all word-final vowels/affixes that I retained, for two reasons. First, the informant was totally unaware of the aim of the experiment, she only knew that she had to produce some utterances, but she had no idea what I was interested to hear from her. Second, as a speaker of Standard Italian as spoken in central Salento, I tend to drop dorsal vowels nearly regularly but I retain coronal ones nearly always. By contrast, the informant dropped dorsal vowels nearly regularly as you can see in (6b), (8b)??, (9b) but she also dropped some coronal vowels (mainly [i]) as you can see in (10b), (11b), (12b), (13b), (14):

(10a) Dimmi che non bisogna mai accettare nulla dagl**i** **e**stranei.
'Tell me that you must never accept nothing from strangers.'
(10b) Non bisogna mai accettare nulla dagl**'** **e**stranei. (dagli)
'Not you must never accept nothing from strangers.'

(11a) Dimmi che gl**i** **u**omini mentono più delle donne.
'Tell me that men lie more than women.'

[6] In the examples given in (6a)-(14) whenever the Fnc undergo VE their full form is given in parenthesis at the end of the corresponding example.

(11b) Gl**'** **u**omini mentono piu' delle donne. (gli)
'Men lie more than women.'

(12a) Dimmi che nulla s**i** **i**nventa all**'** **i**mprovviso. (allo)
'Tell me that nothing you invent suddenly.'
(12b) Nulla s**'** **i**nventa all**'** **i**mprovviso. (si; allo)
'Nothing you invent suddenly.'

(13a) Dimmi che non gliel**e** h**a**i ancora date.
'Tell me that (you) not them to her have yet given.'
(13b) Non gliel**'** h**o** ancora date. (gliele)
'I haven't given them to her yet.'

(14) Allora m**'** h**a**nno detto, se vuole andare da qualche parte, vada a Osnabrueck. (free speech). (mi)
'Then they told me, if you want to go somewhere, you can go to Osnabrueck.'

The informant was free to reformulate the statements proposed by the interviewer if she felt that she could not perform it in her own variety of Standard Italian. All the utterances were recorded.

3.3.3 Data treatment

As far as the data for Italian as spoken in Lecco are concerned, the decision whether VE had taken place or not was made by listening very carefully to the utterances of the informant.

Sentences with obvious speech errors, hesitations or reformulations of the informant were not taken into account for the present study. The stimuli are distributed in the following way: 240 stimuli belong to the questionnaire and 46 to free speech, so that we have in total 286 stimuli. However, in *Table 9* (and following tables) you find that the occurrences in elided form are 102 while the overall occurrences are 245. Why 245 overall occurrences, i.e. stimuli, instead of 286? The answer is quite simple: the 286 stimuli include also the occurrences in elided form for *lo* and *uno* (respectively 14/14 and 10/10) as well as the errors or reformulations made by the informant, which were not taken into account among the occurrences in elided form.

4. Results and Discussion

In this section we will discuss the results concerning VE in Standard Italian as spoken in Florence (§ 4.1) and in Lecco (§ 4.2), comparing the two varieties under observation to each other (§ 4.3).

4.1 Vowel Elision in Florentine Italian

VE in Florentine Italian has been analysed by Agostiniani (1989) and Rosati (2001), (see also § 1), but each Fnc or Lex has been described as showing its own peculiar behaviour towards VE and nothing has been said about the underlying system

governing the phenomenon. It follows that the general picture concerning VE seems unclear. The main results we achieved for VE in Florentine Italian are outlined in *Tables 2-5*:

Table 2– **Overview on VE in Florentine Italian**		
Fnc Type	**Occurrences in elided form / Overall occurrences**	**Deletion Rate**
Determiners	5059/5963	84%
Pronouns	3460/4173	83%
Prepositions	1540/2911	53%
Total	**10059/13047**	**77%**

Table 2 reveals that VE takes place very often in Florentine Italian, i.e. in 77% of the overall occurrences. However the three different types of Fnc undergo VE with different frequency rates, that is determiners and pronouns undergo VE more frequently than prepositions. Now let's look at *Table 3* to consider prepositions in detail:

Table 3– **Overview on Prepositions in Florentine Italian**		
Prepositions	**Occurrences in elided form / Overall occurrences**	**Deletion Rate**
Simple Prepositions	388/1351	29%
Prepositional Articles	1152/1560	74%
Total	**1540/2911**	**53%**

Table 3 shows that the category of prepositions consists of two sub-categories: simple prepositions and prepositional articles. To the first category belong the monosyllabic prepositions *di* 'of' and *da* 'from' (see *Table 1*), which tend not to undergo VE. To the second category belong all those prepositions which are formed by one simple preposition (*a, da, di, in, su*) plus one determinative article (*lo, la, gli, le*), as *dello* 'of the' (from *di* + *lo*), *nello* 'in the' (from *in* + *lo*), etc. Prepositional articles (also called compound prepositions or inflected prepositions) tend to undergo VE very frequently, i.e. they display the same behaviour of the determinative article from which they are formed.

As previously outlined in *Table 1*, the Fnc under analysis are of two types: monosyllabic and polysyllabic. More precisely, there are 17 monosyllabic Fnc and 42 polysyllabic ones. Generally speaking, monosyllabic as well as polysyllabic Fnc do not display relevant differences in undergoing VE. However, in Florentine Italian VE seems to apply with a slightly higher frequency to monosyllabic Fnc than to polysyllabic ones, as you can see from *Table 4*:

Table 4 - **Monosyllabic vs Polysyllabic Fnc in Florentine Italian**		
Fnc Type	**Occurrences in elided form / Overall occurrences**	**Deletion Rate**
Monosyllabic Fnc	8129/9285	89%
Polysyllabic Fnc	1900/2762	69%

As previously mentioned, the word-final vowel vowels/affixes concerned by VE are /a, e, i, o/. These have different deletion rates: in fact dorsal vowels undergo VE more frequently than coronal ones, as you can see in *Table 5* [7]:

Table 5 - **Deletion rates pro V1 in Florentine Italian**		
Word-final Vowel	**Occurrences in elided form / Overall occurrences**	**Deletion Rate**
[a]	5506/5960	92%
[o]	3193/3428	93%
[i]	1184/3150	38%
[e]	146/509	29%
Total	**10059/13047**	**77%**

Consequently, the Vowel Deletion Scale (a scale where vowels at or near the left edge of the scale are more frequently elided than vowels at or near the right edge of the scale) for Florentine Italian is that presented in (15):

(15) o > a > i > e
(where ' >' means more frequently elided)

The data presented in *Tables 2-5* convey the overall results concerning VE in Florentine Italian. To clarify these data we present *Tables 6-8*, where the overall data presented until now are arranged according to Fnc type:

[7] The data presented in *Table 5* do not take into account the sequences [lo/uno Lex], since *lo* and *uno* undergo VE obligatorily.

Table 6 - **VE in Florentine Italian (DETERMINERS)**	
Function Words	**Occurrences in elided form / Overall occurrences**
Masculine Singular	
Lo 'the'(masc.sing) **Uno** 'a' (masc.sing.)	VE is obligatory
Questo 'this'(adj.masc.sing) **Questo** 'this' (pron.masc.sing.) **Quello** 'that (adj.masc.sing) **Quello** 'that' (pron.masc.sing.)	110/137 0/140 69/70 0/29
Total	179/376
Feminine Singular	
La 'the' (fem.sing.) **Una** 'a' (fem.sing.) **Questa** 'this'(adj.fem.sing.) **Questa** 'this'(pron.fem.sing.) **Quella** 'that' (adj.fem.sing.) **Quella** 'that' (pron.fem.sing.)	4310/4310 453/468 41/61 0/114 30/32 0/11
Total	4834/4996
Masculine Plural	
Gli 'the' (masc.plur.) **Questi** 'these' (adj.masc.plur.) **Questi** 'these' (pron.masc.plur.) **Quegli** 'those' (adj.masc.plur.) **Quelli** 'those' (pron.masc.plur.)	14/341 5/53 0/2 11/31 0/2
Total	30/429
Feminine Plural	
Le 'the' (fem.plur.) **Queste** 'these' (agg.fem.plur.) **Queste** 'these' (pron.fem.plur.) **Quelle** 'those' (adj.fem.plur.) **Quelle** 'those' (pron.fem.plur.)	13/142 1/5 0/2 2/10 0/3
Total	16/162
TOTAL Determiners	**5059/5963**

Table 6 reveals that determiners undergo VE very frequently. Moreover, singular determiners ending in -/o/ (masculine gender) as well as in -/a/ (feminine gender), no matter if monosyllabic or polysyllabic, undergo VE more frequently than plural ones ending in -/i/ (masculine gender) and in -/e/ (feminine gender).

As you can see in *Table 6, questo, questa, questi, queste* and *quello, quella, quegli/quelli, quelle* can be adjectives as well as pronouns. Given that when they are pronouns they are followed by verbs, as in *Questo aveva bevuto molto* 'He had drunk very much' or *Questa è l'ultima volta* 'This is the last time' and given that in contexts like these VE never seems to apply, we decided to exclude them from the following sections and tables. The reason that should prevent VE from applying in these sequences is said to reside in the fact that the pronoun and the verb belong to two different maximal syntactic projections where no stay c-command relation hold (cf. Vogel et al. 1983).

Table 7 - **VE in Florentine Italian (PRONOUNS)**	
Function Words	**Occurrences in elided form / Overall occurrences**
Masculine Singular	
Lo 'it/him' (masc., 3pers. sing.) **Glielo** 'it to him/it to her' (masc., 3pers. sing.) **Gli** 'him/to him' (masc., 3pers. sing., ind. obj.)	2385/2389 17/21 23/ 80
Total	2425/2490
Feminine Singular	
La 'it/her' (fem., 3pers. sing.) **Gliela** 'it to him/it to her' (fem., 3pers. sing.) **Le** 'to her/to you' (fem., 3pers. sing., ind. obj.)	158/163 5/5 0/11
Total	163/179
Singular	
Mi 'me/to me' **Ti** 'you/to you'	195/283 117/146
Total	312/429
Masculine Plural	
Li 'them' (masc., 3pers. plur.) **Glieli** 'them to him/them to her (masc., 3pers. plur.)	22/66 3/5
Total	25/71
Feminine Plural	
Le 'them' (fem., 3pers. plur.) **Gliele** 'them to him/them to her (fem., 3pers. plur.)	14/26 1/1
Total	15/27
Plural	
Ci 'us/to us'	(10/38).
Total	(10/38)
Singular and/or Plural	
Si 'you, it (impersonal)/ himself/herself/, themselves' **Ne** 'of it/them'	404/748 106/191
Total	510/939
TOTAL Pronouns	**3460/4173**

Table 7 displays that Pronouns (which are mainly monosyllabic) tend to undergo VE very frequently in Florentine Italian. However, as previously mentioned for determiners, singular pronouns ending in –/o/ (masculine gender), ending in -/a/ (feminine gender), ending in -/i/ and rarely in -/e/ (masculine and feminine gender) undergo VE more frequently than the plural ones ending in -/i/ (masculine gender) and in -/e/ (feminine gender).

Table 8 - **VE in Florentine Italian (PREPOSITIONS)**	
Function Words	**Occurrences in elided form / Overall occurrences**
SIMPLE PREPOSITIONS (Monosyllabic)	
Di 'of' (prep)	375/1059
Da 'from' (prep)	13/292
Total Simple Prepositions	**388/1351**
PREPOSITIONAL ARTICLES (Polysyllabic)	
Masculine Singular	
Allo 'at/to (the)' (prep. masc. sing.)	236/236
Dallo 'from (the)'(prep. masc. sing.)	57/57
Dello 'of (the)'(prep. masc. sing.)	240/240
Nello 'in (the)'(prep. masc. sing.)	88/88
Sullo 'on/upon (the), about (the)' (prep. masc. sing.)	21/21
Total	162/162
Feminine Singular	
Alla 'at/to (the) (prep. fem. sing.)	154/158
Dalla 'from (the)' (prep. fem. sing.)	54/54
Della 'of (the)' (prep. fem. sing.)	213/216
Nella 'in (the)' (prep. fem. sing.)	57/57
Sulla 'on/upon (the), about (the)' (prep. fem. sing.)	18/19
Total	496/504
Masculine Plural	
Agli 'at/to (the)' (prep. masc. plur.)	2/53
Dagli 'from (the)' (prep. masc. plur.)	1/14
Degli 'of (the)' (prep. masc. plur.)	1/174
Negli 'in (the)' (prep. masc. plur.)	1/48
Sugli 'on (the), about (the)' (prep. masc. plur.)	0/7
Total	5/296
Feminine Plural	
Alle 'at/to (the) (prep.fem.plur.)	8/36
Dalle 'from (the)' (prep.fem.plur.)	0/17
Delle 'of (the)' (prep.fem.plur.)	1/43
Nelle 'in (the)' (prep.fem.plur.)	0/19
Sulle 'on/upon (the), about (the)' (prep. fem. plur.)	0/3
Total	9/118
Total Prepositional Articles	**1152/1560**
TOTAL Simple Prepositions + Prepositional Articles	**1540/2911**

Table 8 shows in detail that simple prepositions *di* and *da* tend to preserve their full form while all prepositional articles mirror the behaviour of the determinative articles which form them. In fact, prepositional articles formed by one simple preposition (*a, da, di, in, su*) plus a singular determinative article (*lo, la*) undergo VE more frequently than those prepositional articles formed by a plural determinative article (*gli, le*).

It should be noted that the preposition *da* is said to trigger Raddoppiamento Sintattico and to block VE. In fact, its word-final vowel /a/ is assumed to have two underlying moras and if the one can be deleted the other still remains, which prevents VE from applying (cf. Chierchia 1982 and Loporcaro 1997).

To sum up, in Florentine Italian VE seems to be a very productive phenomenon which drops nearly regularly word-final, dorsal vowels/affixes of Fnc when followed by word-initial vowels. However, coronal vowels too can undergo VE, but only sometimes and with a lower frequency than dorsal vowels. We also found some instances in which dorsal vowels do not undergo VE, even if they fulfil all necessary requirements. We will discuss the retention of dorsal vowels as well as the deletion of coronal ones more in detail in § 5.3.

In our opinion, VE is so productive in Florentine Italian as a consequence of the fact that this variety of Standard Italian is very rich in various deletion phenomena, which is likely to lead speakers towards an over application of VE. In fact, apart from deletion of word-final vowels before word-initial vowels (as in *quest'albero* 'this tree', *ved'Antonio* '(I) see Antonio', *un fior'aperto* 'an open flower') there are two other vowel deletion phenomena: the *deletion of postvocalic, word-final [i]* (provided that [i] isn't the only inflectional morpheme, as in *be' bambini* 'beautiful children' *ci anda' di corsa* '(I) went there in haste') and the *deletion of word-initial [i]* (as in *guarda 'l bambino* 'look at the child', *sembra 'mpossibile* '(it) seems impossible) (cf. Agostiniani 1989).

4.2 Vowel Elision in Italian as spoken in Lecco

To our best knowledge, VE in Standard Italian as spoken in Lecco (a variety of Lombardic Italian) has never been analysed in literature. Actually, VE in Italian as spoken in Milan (another variety of Lombardic Italian) has been analysed by Nespor (1987), (1990)[8]. However, as already noted for previous studies on VE in FI, no regularities have been shown. Our proposal is that in such variety of Standard Italian, VE does not function exactly as in Florentine Italian. The main results we achieved for VE in Italian as spoken in Lecco are illustrated in *Tables 9-12*:

Table 9 – **Overview on VE in Italian as spoken in Lecco**

Fnc Type	**Occurrences in elided form/ Overall occurrences**	**Deletion Rate**
Determiners	29/69	42%
Pronouns	23/82	28%
Prepositions	51/94	54%
Total	**102/245**	**42%**

Table 9 reveals that VE takes place quite often in Italian as spoken in Lecco, i.e. in 42% of the overall occurrences. However, the three different types of Fnc undergo VE with different frequency rates, that is determiners and prepositions undergo VE more frequently than pronouns. Now let's look at *Table 10* to consider prepositions in detail:

[8] See also Pavia (1923).

Table 10– **Overview on Prepositions in Italian as spoken in Lecco**		
Prepositions	**Occurrences in elided form / Overall occurrences**	**Deletion Rate**
Simple Prepositions	6/14	43%
Prepositional Articles	44/80	55%
Total	**51/94**	**54%**

Table 10 makes clear that, as previously noticed for Florentine Italian, prepositional articles tend to undergo VE more frequently than simple prepositions. However, simple prepositions tend to trigger VE more frequently in Italian as spoken in Lecco than in Florentine Italian.
Generally speaking, monosyllabic as well as polysyllabic Fnc do not display significant differences in undergoing VE. However, in spite of what we observed for Florentine Italian, VE seems to apply with a slightly higher frequency to polysyllabic Fnc than to monosyllabic ones, as you can see from *Table 11*:

Table 11 - **Monosyllabic vs Polysyllabic Fnc in Italian as spoken in Lecco**		
Fnc Type	**Occurrences in elided form / Overall occurrences**	**Deletion Rate**
Monosyllabic Fnc	**28/75**	**37%**
Polysyllabic Fnc	**74/170**	**44%**

Moreover, as previously discussed for Florentine Italian, dorsal vowels undergo VE more frequently than coronal ones, as you can see in *Table 12*[9]:

Table 12 - **Deletion rates pro V1 in Italian as spoken in Lecco**		
Word-final Vowel	**Occurrences in elided form / Overall occurrences**	**Deletion Rate**
[a]	47/58	81%
[o]	35/48	73%
[i]	18/90	20%
[e]	2/49	4%
Total	**102/245**	**42%**

The Vowel Deletion Scale for Italian as spoken in Lecco is presented in (16):

(16) a > o > i > e
(where ‘ >’ means more frequently elided).

The data presented in *Tables 9-12* outline the overall results concerning VE in Italian as spoken in Lecco. To clarify these data we present *Tables 13-15*, where the overall data presented until now are sorted through according to Fnc type:

[9] The data presented in *Tables 9-12* do not take into account the sequences [lo/uno Lex], since *lo* and *uno* undergo VE obligatorily.

Table 13 - **VE in Italian as spoken in Lecco (DETERMINERS)**	
Function Words	**Occurrences in elided form / Overall occurrences**
Masculine Singular	
Lo 'the'(masc. sing)	always (14/14)[10]
Uno 'a' (masc. sing.)	always (10/10)[11]
Questo 'this'(adj., masc. sing)	2/3
Questo 'this' (pron., masc. sing.)	0/3
Quello 'that (adj., masc. sing)	5/5
Quello 'that' (pron., masc. sing.)	0/3
Total	7/14
Feminine Singular	
La 'the' (fem. sing.)	6/6
Una 'a' (fem. sing.)	7/7
Questa 'this' (adj., fem. sing.)	4/4
Questa 'this' (pron., fem. sing.)	0/3
Quella 'that' (agg., fem. sing.)	4/4
Quella 'that' (pron., fem. sing.)	0/3
Total	21/27
Masculine Plural	
Gli 'the' (masc. plur.)	1/8
Questi 'these' (adj., masc. plur.)	0/3
Questi 'these' (pron., masc. plur.)	0/2
Quegli 'those' (adj., masc. plur.)	0/1
Quelli 'those' (pron., masc. plur.)	0/1
Total	1/15
Feminine Plural	
Le 'the' (fem. plur.)	0/4
Queste 'these' (agg., fem. plur.)	0/2
Queste 'these' (pron., fem. plur.)	0/3
Quelle 'those' (adj., fem. plur.)	0/3
Quelle 'those' (pron., fem. plur.)	0/1
Total	0/13
TOTAL determiners	**29/69**

Table 13 demonstrates that determiners undergo VE very frequently. Moreover, singular determiners ending in -/o/ (masculine gender) as well as in -/a/ (feminine gender), no matter if monosyllabic or polysyllabic, undergo VE more frequently than plural ones ending in -/i/ (masculine gender) and in -/e/ (feminine gender).

As previously discussed in § 4.1, we decided to exclude the pronouns *questo, questa, questi, queste* and *quello, quella, quegli/quelli, quelle* since they never trigger VE.

[10] The number of the occurrences of VE with *uno* and *lo* are put between parentheses because they have not been taken into account for the total of VE occurrences in Standard Italian as spoken in Lecco. In fact *uno* and *lo* undergoes VE obligatorily before a lexical word beginning with a vowel.

[11] See previous note.

Table 14- **VE in Italian as spoken in Lecco (PRONOUNS)**	
Function Words	**Occurrences in elided form / Overall occurrences**
Masculine Singular	
Lo 'it/him' (masc., 3pers. sing.)	5/8
Glielo 'it to him/it to her' (masc., 3pers. sing.)	2/5
Gli 'him/to him' (masc., 3pers. sing., ind. obj.)	0/4
Total	7/17
Feminine Singular	
La 'it/her' (fem., 3pers. sing.)	4/7
Gliela 'it to him/it to her' (fem., 3pers. sing.)	2/2
Le 'to her/to you (impersonal)' (fem., 3pers. sing., ind. obj.)	0/3
Total	6/12
Singular	
Mi 'me/to me'	5/17
Ti 'you/to you'	1/5
Total	6/22
Masculine Plural	
Li 'them' (pron., masc. plur.)	0/5
Glieli 'them to him/them to her (pron.)	0/3
Total	0/8
Feminine Plural	
Le 'them'(pron., fem. plur.) direct.object	0/5
Gliele 'them to him/them to her (pron.)	2/3
Total	2/8
Plural	
Ci 'us/to us'(pron.)	1/4
Total	1/4
Singular and/or Plural	
Si 'you, it (impersonal)/himself/herself/, themselves'	1/5
Ne 'of it/them'	0/6
Total	1/11
TOTAL Pronouns	**23/82**

Table 14 shows that, generally speaking, pronouns (which are mainly monosyllabic) tend to preserve their full form in Italian as spoken in Lecco. However, in spite of what we observed for Florentine Italian, only singular pronouns ending in –/o/ (masculine gender) and in -/a/ (feminine gender) seem likely to undergo VE. The singular pronoun ending in -/i/ and rarely in -/e/ (masculine and feminine gender) as well as the plural ones ending in -/i/ (masculine gender) and in -/e/ (feminine gender) preserve more or less systematically their full form.

Table 15 - **VE in Italian as spoken in Lecco (PREPOSITIONS)**	
Function Words	**Occurrences in elided form / Overall occurrences**
SIMPLE PREPOSITIONS (Monosyllabic)	
Di 'of' (prep.)	5/11
Da 'from' (prep.)	1/3
Total Simple Prepositions	**6/14**
PREPOSITIONAL ARTICLES (Polysyllabic)	
Masculine Singular	
Allo 'at/to (the)' (prep., masc. sing.)	6/6
Dallo 'from (the)' (prep., masc. sing.)	3/3
Dello 'of (the)' (prep., masc. sing.)	5/5
Nello 'in (the)' (prep., masc. sing.)	3/3
Sullo 'on/upon (the), about (the)' (prep., masc. sing.)	4/4
Total	21/21
Feminine Singular	
Alla 'at/to (the) (prep., fem. sing.)	4/4
Dalla 'from (the)' (prep., fem. sing.)	4/4
Della 'of (the)' (prep., fem. sing.)	3/3
Nella 'in (the)' (prep., fem. sing.)	4/4
Sulla 'on/upon (the), about (the)' (prep., fem. sing.)	4/4
Total	19/19
Masculine Plural	
Agli 'at/to (the)' (prep., masc. plur.)	0/4
Dagli 'from (the)' (prep., masc. plur.)	3/4
Degli 'of (the)' (prep., masc. plur.)	0/4
Negli 'in (the)' (prep., masc. plur.)	1/5
Sugli 'on (the), about (the)' (prep., masc. plur.)	0/4
Total	4/21
Feminine Plural	
Alle 'at/to (the) (prep., fem. plur.)	0/4
Dalle 'from (the)' (prep., fem. plur.)	0/3
Delle 'of (the)' (prep., fem. plur.)	0/4
Nelle 'in (the)' (prep., fem. plur.)	0/4
Sulle 'on/upon (the), about (the)' (prep., fem. plur.)	0/4
Total	0/19
Total Prepositional Articles	**44/80**
TOTAL Simple Prepositions + Prepositional Articles	**50/94**

Table 15 shows in detail that simple prepositions as well as prepositional articles tend to undergo VE. Moreover, as previously mentioned for Florentine Italian, prepositional articles mirror the behaviour of the determinative articles that they consist of. In fact, prepositional articles formed by one simple preposition (*a, da, di, in, su*) plus a singular determinative article (*lo, la*) undergo VE more frequently than those prepositional articles formed by a plural determinative article (*gli, le*).

To sum up, we would say that in Standard Italian as spoken in Lecco VE takes place quite often (in 42% of overall occurrences) but less often than in Florentine Italian (77% of overall occurrences). It is worth pointing out that, in spite of what we observed

for Florentine Italian (where coronal vowels could also undergo VE), in Italian as spoken in Lecco dorsal vowels are frequently dropped but coronal ones are retained nearly regularly.

4.3 A Comparison: Vowel Elision in Florentine Italian *vs* Vowel Elision in Standard Italian as spoken in Lecco

From the data shown until now (§ 4.1, 4.2) it is clear that VE is more productive in Florentine Italian than in Standard Italian as spoken in Lecco. More in detail, in Florentine Italian it applies in 77% of the overall occurrences while in Standard Italian as spoken in Lecco it applies only in 42% of the overall occurrences. This means that the same four word-final vowels /a, e, i, o/ have different deletion rates in different varieties (see *Tables 2,9*). However, in both varieties there is a general tendency for dorsal vowels to be dropped more frequently than coronal ones.

Now let's turn to a comparison between the two varieties under consideration. Florentine Italian and Standard Italian as spoken in Lecco share some similarities with regards to VE. These are listed in (17a)-(17d):

(17a) *lo*, *uno*, *la*, *una* (articles), *questo*, *quello*, *questa*, *quella* (adjectives), *allo/a, dallo/a, dello/a, nello/a, sullo/a* (masculine and feminine singular prepositional articles), tend to undergo VE regularly, or at least highly frequent;

(17b) *di* undergoes VE only sometimes;

(17c) *da* gets elided only rarely and in no case when it introduces the origin /agent complement;

(17d) *questo, quello, questa, quella, questi, quelli and queste, quelle* (pronouns), a*gli, dagli, degli, negli, sugli* (masculine plural prepositional articles) *alle, dalle, delle, nelle, sulle* (feminine plural prepositional articles), *le* (indirect pronoun) tend not to undergo VE, or at least only as exceptions.

The Fnc not mentioned in (17a)-(17d) tend to undergo VE more frequently in Florentine Italian than in Standard Italian as spoken in Lecco. In particular, let's have a look (18a)-(18b):

(18a) In Florentine Italian the pronouns *mi, ti, si, ci, ne* tend to have two variants before vowel-initial Lex, *mi*/*m', ti/t', si/s', ci/c', ne/n'* (the reduced forms tend to occur more frequently than the full ones) while in Standard Italian as spoken in Lecco they tend to preserve their full form;

(18b) In Florentine Italian the pronouns *gli*, *li, le, glieli, gliele* can optionally undergo VE while in Standard Italian as spoken in Lecco they preserve their full form.

At this point it seems clear that VE in Standard Italian as spoken in Lecco tends to mirror the conditions imposed by the orthography (i.e. prescriptive grammars) while in Florentine Italian it is much more productive.

After having exposed our results for VE in Florentine Italian and Italian as spoken in Lecco we will discuss them in detail.

5. General Discussion

Let us now turn to a more general discussion of the results. In this section we will examine three main points. First of all, we will address the phonology-morphology interface which comes into play in VE (see § 5.1). Second, we will discuss the different frequency of occurrence of VE for word-final vowel in the light of the morphological specifications (see § 5.2). Third, we will show that VE entails some exceptionality and variation in relation to inter-speaker vs intra-speaker variation as well as inter-variety vs intra-variety variation (see § 5.3).

5.1 Morphological Specifications of Italian Fnc word-final vowels

As far as VE is concerned, we assume that various factors are involved. First, there is the phonological level, where there are four word-final vowel phonemes /a, e, i, o/ which are likely to be deleted when followed by vowel-initial words. Second, one has to take into account the morphological level, that is the four word-final, elidable vowels are affixes which realize some morphological features of gender, number and case. Let's look at these two levels in detail. In the traditional view of Italian Morphology, the four Italian word-final vowels/affixes /a, e, i, o/ are considered as exponents of the morphological features of gender, number and case, as illustrated in *Table 16*:

Table 16: **Morphological features linked to the word-final vowels/affixes in Standard Italian Descriptive Grammars**

Vowel/Affix	Morphological Features			Fnc
	Gender	Number	Case	
/a/	Fem.	Sing.	*No case*	La, Una, Questa, Quella (det.) Alla, Dalla, Della, Nella, Sulla (prep.)
	Fem.	Sing.	Acc.	La, Gliela (pron.)
/o/	Masc.	Sing.	*No case*	Lo, Uno, Questo, Quello (det.) Allo, Dallo, Dello, Nello, Sullo (prep.)
	Masc.	Sing.	Acc.	Lo, Glielo (pron.)
/e/	Fem.	Plur.	*No case*	Le, Queste, Quelle (det.) Alle, Dalle, Delle, Nelle, Sulle (prep.)
	Fem.	Plur.	Acc.	Le, Gliele (pron.)
	Fem.	Sing.	Dat.	Le (pron., ind.obj.)
	Masc./Fem.	Sing./ Plur.	*No case*	Ne (pron.)
/i/	Masc.	Plur.	*No case*	Gli, Questi, Quelli (det.) Agli, Dagli, Degli, Negli,Sugli (prep.)
	Masc.	Plur.	Acc.	Li, Glieli (pron.)
	Masc.	Sing.	Dat.	Gli (pron., ind.obj.)
	Masc./Fem.	Sing.	Dat./Acc.	Mi, Ti, Si [12](pron.)
	Masc./Fem.	Plur.	Dat./Acc.	Si, Ci , Vi (pron.)
	Masc./Fem.	Sing./ Plur.	*No case*	Di (prep.)

In this article we will look at the morphological specifications of Italian Fnc from a new perspective, taking as point of departure assumptions about the phonological and morphological underspecification (cf. Halle & Marantz 1993 and Harley & Noyer 1999). Following the idea that vocabulary entries (among them the affixes under analysis here) are featurally underspecified for their context of insertion,

[12] The pronouns *mi, ti, si, ci, vi* can also be reflexive pronouns, as in *mi lavo* 'I wash myself'.

i.e. for the syntactic positions where they can appear and for the morphosyntactic features that they can realize, we will assume that the features [masculine] (for gender), [singular] (for number) and [accusative] (for case) are the default features stored in the mental lexicon and are consequently underspecified (i.e. unmarked). All other features, by contrast, are specified and consequently marked, as you can see in *Table 17* for the word-final vowels of Italian determiners, in *Table 18* for those of Italian pronouns and in *Table 19* for those belonging to Italian simple prepositions and prepositional articles:

Table 17 – **Morphological Specifications of Italian DETERMINERS word-final vowels**

Fnc	Gender	Number	Deletion Rate Florentine Italian	Deletion Rate Lecco Italian
Lo	-	-	**100%**	**100%**
La	Fem			
Gli	-	Plur	**4%**	**12%**
Le	Fem		**9%**	**0%**
Uno	-	-	**100%**	**100%**
Una	Fem			
Questo	-		**80%**	**67%**
Questa	Fem		**67%**	**100%**
Questi	-	Plur	**9%**	**0%**
Queste	Fem		**20%**	
Quello	-	-	**99%**	**100%**
Quella	Fem		**94%**	
Quegli	-	Plur	**35%**	**0%**
Quelle	Fem		**20%**	

Table 18 –**Morphological Specifications of Italian PRONOUNS word-final vowels**

Fnc	Case	Gender	Number	Deletion Rate Florentine Italian	Deletion Rate Lecco Italian
Lo	-	-	-	**99%**	**63%**
La		Fem		**97%**	**57%**
Li		-	Plur	**33%**	**0%**
Le		Fem		**54%**	
Glielo		-	-	**81%**	**40%**
Gliela		Fem		**100%**	**100%**
Glieli		-	Plur	**60%**	**0%**
Gliele		Fem		**100% !**	**67%**
Mi		-	-	**69%**	**29%**
Ti				**80%**	**20%**
Si				**54%**	
Ne				**56%**	**0%**
Ci				**26%**	**25%**
Gli	Dat			**29%**	**0%**
Le	Dat	Fem		**0%**	

Table 19 –**Morphological Specifications of Italian PREPOSITIONS word-final vowels**				
Fnc	**Gender**	**Number**	**Deletion Rate Florentine Italian**	**Deletion Rate Lecco Italian**
Di	-	-	**35%**	**45%**
Allo			**100%**	**100%**
Dallo				
Dello				
Nello				
Sullo				
Alla	Fem		**97%**	
Dalla			**100%**	
Della			**97%**	
Nella			**100%**	
Sulla			**95%**	
Agli	-	Plur	**4%**	**0%**
Dagli			**7%**	**75%**
Degli			**0%**	**0%**
Negli			**2%**	**20%**
Sugli			**0%**	**0%**
Alle	Fem		**22%**	
Dalle			**0%**	
Delle			**2%**	
Nelle			**0%**	
Sulle				

If you compare *Table 16* to *Tables 17-19*, you will see that the specifications [masculine] (for gender), [singular] (for number) and [accusative] (for case) given in *Table 16,* have been replaced through a horizontal dash in *Tables 17-19*. In fact, we assume that the features [masculine] (for gender), [singular] (for number) and [accusative] (for case) are the default features stored in the lexicon and consequently we treat the vowels/affixes which express them (mainly *–a, -o*) as underspecified. These vowels/affixes involve gender and number predictors (in some cases also a case predictor), but these are the default ones, which we are considering as underspecified (i.e. unmarked). As far as the pronouns *mi, ti, si, ci, ne* are concerned, we follow Cardinaletti & Shlonsky (2004:532-533) in assuming that the word-final vowels of these pronouns do not express any morphological feature, since the feature content is expressed by the consonant. In fact, these pronouns are subject to the [i] ~ [e] alternation (cf. *me, te, se, ce*). Cardinaletti & Shlonsky (2004) address them as the *consonantal* series[13] as opposed to the series formed by the accusative pronouns *lo, la, li, le*, whose final vowels bear the morphological features of gender and number. We assume that the pronouns *mi, ti, si, ci, ne* are morphologically totally underspecified since the feature content is expressed by the consonant and consequently the word-final (probably epenthetic) vowels involve no gender, number and case predictors.

[13] Cardinaletti & Shlonsky (2004) include among the *consonantal clitics* also the dative pronouns *gli* and *le*. However, we do not think that the ending vowels of them express no morphological features, since at least in Florentine Italian these two dative pronouns tend to undergo VE less frequently than *mi, ti, si, ne* , which we are assuming here as morphologically totally underspecified.

5.2 The Different Frequency of Occurrence of Vowel Elision

In this section we will put the morphological specifications listed in *Tables 17-19* in relation to the different frequency of occurrence that VE is likely to show with the different word-final vowels and consequently with the different Fnc.

Since each Fnc word-final vowel/affix can realize one or more morphological feature, it follows that whenever a word-final vowel/affix undergoes VE, the number of morphological violations corresponds to the number of morphological specifications given to each word-final vowel/affix, as shown in (19)-(21):

(19) There are **zero violations** provided that the word-final vowel is morphologically totally underspecified, i.e. for the masculine singular determiners, pronouns and prepositional articles, the pronouns *mi, ti, si, ci, ne,* and the preposition *di.*

(20) There is **one violation** provided that the word-final vowel has one morphological specification:
- a. the gender feature is violated whenever the feminine singular determiners, pronouns and prepositional articles undergo VE;
- b. the number feature is violated whenever the masculine plural determiners, pronouns and prepositional articles undergo VE;
- c. the dative feature is violated whenever the masculine singular dative pronoun *gli* undergoes VE.

(21) There are **two violations** provided that the word-final vowel has two morphological specifications:
- a. the gender and the number features are violated whenever the feminine plural determiners, pronouns and prepositional articles undergo VE;
- b. the gender and the case features are violated whenever the feminine dative pronoun *le* undergoes VE.

In § 9 we will consider the violations of the morphological specifications outlined in (19)-(21) as violations of a constraint that we will term 'morphological exponence'.

Now, if you relate the number and type of morphological specifications given for each Fnc word-final vowel (see *Tables 17-19*) to the deletion rates of them, you will see that the application or non-application of VE is a direct consequence of the number and type of the morphological specifications attributed to the Fnc word-final vowel. We will explain this point in detail in § 5.2.1-5.2.3.

5.2.1 Highly Frequent or Preferred Vowel Elision

Both in Florentine Italian and in Italian as spoken in Lecco, VE applies with high frequency, or is at least preferred, to vowels/affixes which have no morphological specifications (are morphologically totally underspecified), or which are only specified for gender as [feminine], see Fnc listed in (22a)-(24b):

(22a) determiners underspecified for gender and number:
lo, uno, questo, quello.

(22b) determiners specified for gender as [feminine] but not for number:
la, una, questa, quella.

(23a) pronouns underspecified for gender and number:
lo, glielo.

(23b) pronouns specified for gender as [feminine] but not for number:
la, gliela.

(24a) prepositional articles underspecified for gender and number:
allo, dallo, dello, nello, sullo.

(24b) prepositional articles specified for gender as [feminine] but not for number:
alla, dalla, della, nella, sulla.

We want to draw attention on the fact that the word-final vowels of *lo, la* and *glielo, gliela* behave differently in the two varieties of spoken Italian under analysis. In Lecco Italian word-final /o, a/ of *lo, la* and *glielo, gliela* tend to be dropped, or at least can be dropped, only if they are recoverable form the context, that is you will have *gliela ho prestata → gliel'ho prestata* 'I lent it to him/her' and *glielo abbiamo detto → glielo/gliel'abbiamo detto* 'We have told him'. On the other hand, these dorsal word-final vowels will never be dropped if they are not recoverable form context, as in *la odio* 'I hate her', *la evito* 'I avoid her', *lo inviterò* 'I will invite him'. By contrast, in Florentine Italian the same vowels tend to be dropped nearly regularly, no matter if they are recoverable from the context or not.

The pronouns outlined in (25), instead, though being morphologically totally underspecified, tend to undergo VE only in Florentine Italian:

(25) pronouns
mi, ti, si, ne.

A closer look at the occurrences of VE with the pronouns in (25) reveals that they tend to appear in their reduced form before vowel-initial words; however, in a minority of cases they can also appear in their full form.

It should be noted that the gender features (underspecified or [feminine]) do not seem to affect VE, provided that the affixes under analysis here are underspecified for number (thus intrinsically 'conveying' the default number feature [singular]). It follows that in Florentine Italian and in Italian as spoken in Lecco all (or nearly all) the word-final vowels/affixes which are underspecified for number are systematically dropped, no matter if they are specified for gender or not.

5.2.2 Optional Vowel Elision

VE seems to occur optionally with different Fnc. Let's have a look at them in detail. VE applies only sometimes to the preposition *di* (which is morphologically totally underspecified) in Florentine Italian as well as in Italian as spoken in Lecco. In fact, the 'ambiguous' behaviour of *di*, which tends to preserve its full form, has also been pointed out in descriptive grammars (Regula & Jerney 1975:256-258; Dardano & Trifone 1988:280-281) as well as in literature (Finizio 1983, Manczak 1978 and Walker 1895). *Di* is said to tend to undergo VE before vowels belonging to nouns but to

preserve its full form before verbs; moreover, *di* displays VE in lexicalized expressions and in syntagms with great internal cohesion, as in *d'estate* 'in summer', *essere d'accordo* 'to agree', *pene d'amore* 'pains of love', *delusione d'amore* 'love disappointment', *nozze d'argento* 'silver wedding', as already noticed by Vanvolsem (1983). We think that the behaviour of the preposition *di* needs to be analysed more in detail and we leave it for further research.
Also the pronoun *ci* is morphologically totally underspecified but it seems likely to undergo VE optionally only in Florentine Italian.

VE occurs sometimes with vowels/affixes which are specified either as [plural] or as [dative] (i.e. which have only one morphological specification) only in Florentine Italian, as you can see in (26a-b):

(26a) Fnc specified for case as [dative] and underspecified for gender and number: *gli* (dative pronoun).

(26b) Fnc specified for number as [plural] and underspecified for gender: *li, glieli* (pronouns); *quegli* (determiner).

VE is also likely to drop the final vowels which are specified as [plural] and [feminine] (i.e. which have two morphological specifications) only in Florentine Italian, as you can see in (27):

(27) Fnc specified for number as [plural] and for gender as [feminine]: *le, gliele* (pronouns).

We want to point out that in Florentine Italian the word-final vowels of the pronouns *li, le, glieli* are likely to be dropped (but can also be preserved) provided that they are recoverable form the context and you can have *li ho messi* → *li/l'ho messi* 'I have put them'. By contrast, they tend not to undergo VE if they are not recoverable from the context, i.e., *li osservo* 'I observe them'. In Lecco Italian, on the other hand, the same word-final vowels are never dropped, no matter if they are recoverable from the context, as in *li ho già visti* 'I have already seen them', *glieli ho dati* 'I have given them to him', or not at all, as in *li odio* 'I hate them'. As far as the Fnc *gliele* in Florentine Italian is concerned, we assume that it mirrors the behaviour of the pronoun *le*. However, since it occurred only once in the C-ORAL-ROM corpus, we need further data to see in detail if our assumption is adequate or not.

5.2.3 Impossible Vowel Elision

In Florentine Italian and in Italian as spoken in Lecco VE tends not to apply, or only with a few exceptions, to vowels/affixes which are specified as [plural] or which have two morphological specifications, see Fnc listed in (28a)-(30b):

(28a) determiners underspecified for gender and specified for number as [plural]: *gli, questi, quegli*.

(28b) determiners specified for gender as [feminine] and for number as [plural]: *le, queste, quelle*.

(29) pronouns specified for gender as [feminine] and for case as [dative]:
le (dative pronoun).

(30a) prepositional articles underspecified for gender and specified for number as [plural]:
agli, dagli, degli, negli, sugli.

(30b) prepositional articles specified for gender as [feminine] and for number as [plural]:
alle[14], *dalle, delle, nelle, sulle*.

On the other hand, the pronouns listed in (31a-b) tend to optionally undergo VE in Florentine Italian but not in Italian as spoken in Lecco:

(31a) pronouns with one morphological specification
li, glieli, ci; gli (dative pronoun); quegli.

(31b) pronouns with two morphological specifications
le, gliele.

At this point we want to underscore that both case and number specifications seem to affect VE. In fact, vowels specified as [dative] are likely to be dropped only in Florentine Italian (see *gli* in 26a and 31a) while vowels specified among others as [plural] tend to preserve their full form in both varieties (see 26-27, 31a-b). However, these vowels are sometimes likely to be dropped in Florentine Italian, but mainly optionally or as exceptions.

5.3 Exceptionality and Variation within Vowel Elision

So far we have shown that speakers tend to drop dorsal vowels/affixes /a, o/ and to preserve coronal ones /e, i/ (see *Tables 6-8, 13-15* and *17-19*). It is worth remembering that, phonologically, dorsal vowels/affixes are generally considered as more marked than coronal ones. At this point we could posit that dorsal vowels tend to be dropped nearly regularly in Florentine Italian as well as in Italian as spoken in Lecco for two reasons. First, they realize the morphological parameters which we consider as the 'default' ones stored in the mental lexicon (we have shown in 5.2.1 that the gender morphological specification does not affect VE). Second, markedness reduction, e.g., a pressure for output segments to have unmarked features, tend to eliminate them (cf. De Lacy 2006).

Coronal vowels/affixes, instead, which are on some accounts considered as underspecified from an articulatory point of view and from a phonological one (cf. Lahiri & Evers 1991 and Lahiri & Reetz 2002), tend to be preserved for two reasons. First, in some cases they realize the morphological parameters which we are considering here as marked (i.e. those which are not the 'default' ones stored in the mental lexicon).

[14] If you look at *Tables 8, 19* you will see that the feminine prepositional article *alle* has a Deletion Rate of 22% in Florentine Italian. Given that it is the only feminine plural prepositional article that seems likely to undergo VE, we will assume that it can be attributed to chance and to intra-speaker variation.

Second, there is no need for markedness reduction to delete them, since phonologically they are considered as underspecified.

Now, let's have a look at *Tables 20-21*:

Table 20- **VE in Florentine Italian**

Vowel	Gender	Number	Case	Elided forms/ Overall Occ.	Deletion Rate	Full forms/ Overall Occ.	Retention Rate
[a]	Fem	-	-	5493/5543	**99%**	50/5543	**1%**
[o]	-			3193/3279	**97%**	86/3279	**3%**
[i]				1101/2274	**48%**	1173/2274	**52%**
[i]			Dat	23/80	**29%**	57/80	**71%**
[i]		Plur	-	60/781	**8%**	721/781	**92%**
[e]		-		106/191	**55%**	85/191	**45%**
[e]	Fem		Dat	0	**0**	11/11	**100%**
[e]		Plur	-	40/301	**13%**	261/301	**87%**

Table 21- **VE in Italian as spoken in Lecco**

Vowel	Gender	Number	Case	Elided forms/ Overall Occ.	Deletion Rate	Full forms/ Overall Occ.	Retention Rate
[a]	Fem	-	-	46/49	**94%**	3/49	**6%**
[o]	-			35/42	**83%**	7/42	**17%**
[i]				13/42	**31%**	29/42	**69%**
[i]			Dat	0	**0**	4/4	**100%**
[i]		Plur	-	6/45	**12%**	39/45	**87%**
[e]		-		0	**0**	6/6	**100%**
[e]	Fem		Dat	0	**0**	4/4	**100%**
[e]		Plur	-	2/36	**6%**	34/36	**87%**

From the data listed in *Tables 20-21* it is clear that speakers/informants tend to drop dorsal vowels and to preserve coronal ones but this does not happen regularly. In fact, coronal vowels/affixes can sometimes undergo VE (i.e. /i/ morphologically totally underspecified, /i/ specified as [dative] and as [plural], /e/ morphologically totally underspecified, /e/ specified as [feminine] and [plural] in *Table 20*; /i/ morphologically totally underspecified, /i/ specified as [plural], /e/ specified as [feminine] and [plural] in *Table 21*. Moreover, in a few cases dorsal vowels/affixes are retained.

At this point we have to ask ourselves how the instances of retention of dorsal vowels and those of deletion of coronal ones have to be interpreted in Florentine Italian and in Italian as spoken in Lecco.

Recently, the topic of lexical exceptionality (or optionality) and variation has been largely discussed in the literature (see, amomg others, Inkelas et al. 1997, Inkelas 1997, Boersma 1997, Pater & Coetzee 2005, Wasow 2005, Anttila & Cho 1998, Anttila 2002 and 2006, Pater 2006, Kager forthcoming and Meinschaefer submitted). Following Anttila (2002) and (2006) and Pater (2006), we will refer to the concepts of *variation* (e.g. a single input may yield more than one possible output in the same phonological environment) and *exceptionality*, e.g., the non-application of a rule to an item even if the item satisfies all (the) requirements for the rule to apply - *underapplication* -, or even if not all (the) requirements are met – *overapplication* -).

Our proposal is that the occurrences of deletion of /i/ and /e/ underspecified for gender, number and case are instances of variation only in Florentine Italian. It follows

that in Florentine Italian the pronouns *mi, ti, si, ne* have two variants before vowel-initial Lex: the full form (*mi, ti, si, ne*), which tends to predominate when these pronouns are followed by vowel-initial words, and the reduced one (*m', t', s', n'*). On the other hand, we advocate that the occurrences of retention of /a/, /o/ in Florentine Italian as well as in Italian as spoken in Lecco are instances of exceptionality caused by the underapplication of VE. It follows that the determiners *la, una, questo/a, quello/a*, the pronouns *la, lo, glielo/a,* and the prepositions *allo/a, dallo/a, dello/a, nello/a, sullo/a* tend to appear in their reduced form before vowel-initial Lex. Only in a small number of cases they appear in their full form before vowel-initial Lex. Such cases can be attributed to chance and/or intra-speaker and extra-speaker variation. The same is also true for the instances of deletion of /i/ specified as [dative] only in Florentine Italian, those of deletion of /i/ specified as [plural] and those of deletion of /e/ with two morphological specifications in Florentine Italian and Italian as spoken in Lecco. All these occurrences can be considered as instances of exceptionality caused by overapplication of VE and all the Fnc which are concerned (the pronouns *gli, le* as dative pronouns, the masculine and feminine plural determiners, pronouns and prepositional articles) tend to appear in their full form before vowel-initial Lex. The cases in which these Fnc show their reduced variant can be attributed to inter-speaker vs. intra-speaker variation as well to inter-variety vs. intra-variety variation.

To sum up, our claim is that VE in spoken Italian is not random, but that it entails some regularity as well as some variation and exceptionality. To account for variation and optionality, we will propose in § 9.2 two different constraint rankings: Co-phonology 1 and Co-phonology 2.

5.4. Summary

Up to now we have shown that VE is not random, rather VE is conditioned by morphological markedness criteria. We have shown that VE is obligatory/preferred with word-final vowels/affixes which are morphologically totally underspecified or only specified as [feminine] while it is optional with the preposition *di* and with some word-final vowels specified as [plural] or [dative] (only in Florentine Italian). VE tends to be impossible with vowels/affixes specified as [plural] and with all those which have 2 morphological specifications. At this point it is clear that gender features do not play a role for VE while case and number features do affect VE by blocking it.

Our claim is that the type and number of morphological specifications of the four Fnc word-final vowels/affixes seem to be responsible for the application or non-application of VE, i.e. for high frequent/preferred, optional and rare/impossible VE. It follows that, at least in Florentine Italian, VE seems to be predictable on the base of the morphological specifications of the Fnc word-final vowels. In Italian as spoken in Lecco, instead, VE is not totally predictable taking into account only the number and type of the morphological specifications attributed to Fnc word-final vowels.

The evidence that VE is obligatory/preferred with some vowels but optional or impossible with the others means that, at the phonological level, dorsal vowels tend to be dropped nearly regularly while coronal ones tend to be preserved. However, this is not always true since VE entails some variation and exceptionality.

In the next section we will consider the prosodization of the [Fnc Lex] sequences, which constitute the context for VE to apply or not to apply.

6 The Prosodization of [Fnc Lex] sequences

It is generally accepted that all (or nearly all) languages make a distinction between *Functional words*, i.e. words belonging to functional categories which fulfil an essentially grammatical function, and *Lexical words*, i.e. words belonging to lexical categories which carry the principal meaning of a sentence. However, the distinction between functional and lexical categories is not so discrete in the sense that there are also borderline cases, i.e. Fnc with lexical properties and Lex with functional properties[15] (see Cover & van Riemsdijk 2001).

Fnc are said to have some peculiarities with respect to their phonological behaviour. First of all, Fnc are considered prosodically weak, i.e. unstressed, thus, vulnerable to phonological reductions. Second, Fnc are subminimal, that is, they do not fulfil the prosodic word (henceforth PWd) minimality requirements[16] and they do not bear primary word stress so as to be granted PWd-hood. Consequently, they are identified with respect to their prosodic deficiency. It follows that Fnc must be incorporated into the accentual structure of their prosodically stronger host, namely the Lex, in order to be pronounced. Fnc are also likely to violate the phonotactic constraints of the language which they belong to[17]. Least but not last, Fnc have been said to be invisible for the constraints governing the interface between morphosyntactic and prosodic structure, i.e. they are ignored by the principles of morphosyntax-phonology mapping (see Selkirk 1984, 1995; Booij 1996; Peperkamp 1997; Hall 1999; Kabak & Schiering 2006; Cover & van Riemsdijk 2001; Anderson 2005).

The prosodization of [Fnc Lex] sequences is relevant in this context, since in the OT analysis in § 7 we will refer to the constraint Metrical-Structure, i.e. do not modify metrical structure, which militates against the modification of the metrical structure. As we will show at the end of this section, whenever VE occurs the constraint Metrical-Structure is violated since VE triggers resyllabification.

As previously mentioned in *Table 1*, the Fnc under analysis can be monosyllabic or polysyllabic. We think that these two types of Fnc have to be prosodified in two different ways, since the first do not fulfil the minimality prosodic requirements, while the second do fulfil them. Following Selkirk (1995), Peperkamp (1997) and Kabak and Schiering (2006), we propose that monosyllabic Fnc are prosodified as single syllables adjoining with their host PWd at the PPh level, i.e. they are sisters to PWd and daughter to PPh, as you can see in (32a-d):

(32a)	(si	(arríva) $_{PWd}$) $_{PPh}$	‘You arrive’
(32b)	(lo	(immaginávo) $_{PWd}$) $_{PPh}$	‘I imagined it’
(32c)	(la	(amíca) $_{PWd}$) $_{PPh}$	‘the woman friend’
(32d)	(di	(originále) $_{PWd}$) $_{PPh}$	‘of original’

[15] Some borderline cases in Italian are represented by adverbs: there are adverbs with simple morphological structure (usually considered as Fnc) as *spesso* (as in *venire spesso* ‘to come often’) and *forte* (as in *parlare forte* ‘to speak loudly’) on the one hand and derived adverbs (as *raramente* ‘rarely’, *particolarmente* ‘particularly’) with complex morphological structure (usually considered as Lex) on the other hand (see Seewald 1996: 74-76).

[16] The minimal prosodic word in Italian is a disyllabic trochee (see Thornton 1996)

[17] For example in Dutch Lex never begin with a schwa, but several Fnc begin with a schwa (see Booij 1996); in Italian, instead, no Lex begin with /ʎ/, but two homophonous clitics begin with this segment, *gli* as definite plural article ‘the’ and *gli* as dative pronoun ‘to him/to her’ (see Peperkamp 1997: 169).

By contrast, in our view, polysyllabic Fnc (which cannot bear the word main stress but only a secondary one) are prosodified as sequences of a moraic foot plus one bare syllable, i.e. *nello, dallo, questo, quella, gliela,* etc., adjoining with their host PWd at the PPh level, as you can see in (33a-d):

(33a)	((nèl)$_{\Sigma}$ lo	(armádio) $_{PWd}$) $_{PPh}$	'in the wardrobe'
(33b)	((quès)$_{\Sigma}$ ta	(offérta) $_{PWd}$) $_{PPh}$	'this offer'
(33c)	((dèl)$_{\Sigma}$ lo	(ánno) $_{PWd}$) $_{PPh}$	'of the year'
(33d)	((nèl)$_{\Sigma}$ la	(oscuritá) $_{PWd}$) $_{PPh}$	'in the darkness'

Now, when VE applies the word-final vowel belonging to the Fnc is deleted and the consonant which preceded it remains as the last segment of the Fnc. At this point, as a consequence of resyllabification which is a typical phenomenon of Romance languages, the final consonant of the Fnc is syllabified together with the initial vowel of the Lex. This has two consequences. First, the metrical structure is modified. Second, this creates a de-alignment between morphological (|) and prosodic constituents (.), as you can see in (34a-h):

(34a)	/si.ar.ri.va/	→	s|ar.ri.va
(34b)	/lo.im.ma.gi.na.vo/	→	l|im.ma.gi.na.vo
(34c)	/la.a.mi.ca/	→	l|a.mi.ca
(34d)	/di.o.ri.gi.na.le/	→	d|o.ri.gi.na.le
(34e)	/nel.lo.ar.ma.dio/	→	nel.l|ar.ma.dio
(34f)	/ques.ta.of.fer.ta/	→	ques.t|of.fer.ta
(34g)	/del.lo.an.no/	→	del.l|an.no
(34h)	/nel.la.os.cu.ri.ta/	→	nel.l|os.cu.ri.ta

To summarize, our claim is that the prosodic domain of application of VE is the Phonological Phrase, formed either by the monosyllabic Fnc (prosodified as a single syllable) and the vowel-initial Lex which hosts it, or by the polysyllabic Fnc (prosodified as a moraic foot plus one bare syllable) and the vowel-initial Lex which hosts it. After having presented our proposal for the prosodization of Italian [Fnc Lex] sequences, which explains why we will recur to the constraint Metrical-Structure in § 7, we now turn to the Optimal Theoretic analysis of our data and findings.

7 An Optimal Theoretic Approach to Vowel Elision in Spoken Italian

So far, we have shown that VE applies with high frequency, or is at least preferred, to vowels/affixes which have no morphological specifications or which are specified as [feminine] (obligatory/preferred VE, see § 5.2.1). On the other hand VE applies only sometimes to the preposition *di* and to some word-final vowels/affixes which are specified as [plural] or [dative] (these last only in Florentine Italian, optional VE, see § 5.2.2) and VE never applies, or only with a few exceptions, to vowels/affixes which have two morphological specifications (impossible VE, see § 5.2.3). We propose to account for our findings in Florentine and Italian as spoken in Lecco by an analysis cast in the framework of Optimality Theory (cf., among others, Prince & Smolensky 1993 and McCarthy & Prince 1995, McCarthy ed. 2003) and of the Co-phonology Approach (cf., among others, Inkelas 1997, Inkelas et al.1997, Anttila & Cho 1998, Anttila 2002).

7.1 Standard OT Analysis

VE is spoken Italian seems governed by a mixed set of morphological and phonological constraints (but also faithfulness and markedness constraints). These constraints are the following:

Morphological-Exponence: Do not delete the morphological specifications given in the input, which militates against the deletion of morphological specifications (see also Iscrulescu 2003, Lleó 2003 and Colina 2006).

Max-WI: Every word-initial segment in the input must have a correspondent in the output (see, among others, Casali 1997, Bisol 2003 and Cabré & Prieto 2005), which militates against the deletion of Lex initial vowel.

Metrical-Structure: Do not modify metrical structure, which militates against resyllabification.

Onset: Syllables must have onsets (Bisol 2003 and Cabré & Prieto 2003, 2005), which militates against hiatus.

Three of the four constraints we propose are purely phonological (Max-WI, Metrical-Structure and Onset) and one constraint refers to the morphology-phonology interface (Morphological-Exponence). In the meantime, three of the four constraints are Faithfulness constraints (Morphological-Exponence, Max-WI and Metrical-Structure) while one is a Markedness constraint (Onset).

The application of VE entails the violation of the constraints Morphological-Exponence and Metrical-Structure while, the non-application of VE entails the violation of Onset. Each time that one of the four constraints is violated, the candidate form which violates it/them receives one violation mark (double violations are possible for Onset and Morphological-Exponence) and it is marked with respect to this/these constraint(s). The optimal candidate, i.e. the winner, is always the one which incurs the fewest violation-marks with respect to the relevant constraints belonging to the selected hierarchy and consequently the less marked candidate form.

As we have mentioned in § 5, VE is neither random nor a totally regular phenomenon. VE may, instead, entail some variation and some exceptionality, which poses a problem for standard OT with fixed constraint rankings. To cope with variation and exceptionality we recur to the Co-phonology approach.

7.2 The Co-phonology Approach

As previously mentioned in § 5.3 VE may entail some variation and exceptionality (or optionality). Recall that by *variation* we mean that a single input may yield more than one possible output in the same phonological environment. Under *exceptionality*, instead, we understand the non-application of a rule to an item even if the item satisfies all (the) requirements for the rule to apply (i.e. underapplication) or even if (the) not all (the) requirements are met (i.e. overapplication).

Variation and exceptionality are said not to be grammatically random, rather to be controlled by the grammar, though indirectly. Moreover, exceptionality is said to be gradient, e.g., one form may occur in 80%, the other in 20% of the cases (Boersma 1997 and Anttila & Cho 1998). Variation and exceptionality pose a problem for standard OT with fixed constraint rankings; consequently various proposals have been put forward to account for them within Optimality Theory (cf., among others, Boersma 1997, Bresnan et al. 2001, Boersma et Hayes 2001, Boersma 2004 for Stochastic OT; Anttila 2006 for Stratal OT; Inkelas 1997, Inkelas et al. 1997, Anttila & Cho 1998, Anttila 2002 for the Co-phonology approach; Coetzee & Pater 2005, Pater 2006 for Constraint Indexation and Kager forthcoming for exceptionality as allomorphy).

In this paper we will recur to the Co-phonology approach to cope with variation and exceptionality within VE in spoken Italian. The Co-phonology approach (cf., among others, Inkelas 1997, Inkelas et al.1997, Anttila & Cho 1998, Anttila 2002) splits up the grammar into multiple constraint hierarchies (or co-phonologies). Co-phonologies are subgrammars, which select their optimal candidate by their own constraint ranking, i.e. a constraint can be promoted in one constraint hierarchy but the same constraint can be lowered in the another hierarchy. Co-phonologies put forward the idea that sometimes one input may yield more than one output and that sometimes the input does not conform to a rule even if it fulfils all the requirements for the rule to apply. It follows that a constraint ranking is selected each time the grammar is employed to derive an output from an input.

Our aim here is to show that each time that speakers have to derive the output from an input which presents a vowel sequence across word boundaries, they select one of two different constraint rankings, or co-phonologies, that is *Co-phonology 1* and *Co-phonology 2,* which account respectively for triggering and blocking of VE, see (35)-(36)*:*

(35) Co-phonology 1:

Max-WI >> Onset >> Morphological-Exponence >> Metrical-Structure

(36) Co-phonology 2:

Max-WI >> Morphological-Exponence >> Metrical-Structure >> Onset

We want to underscore that in the two constraint rankings illustrated in (35)-(36) Max-WI is undominated and outranks the other constraints, thus conveying the idea that deletion of the Lex word-initial segment instead of the Fnc word-final vowel would be fatal (see Casali 1997). Moreover, in (35) Onset is ranked higher than in (36) and consequently it must not be violated by the optimal candidate. Now, let's have a look at the two co-phonologies separately.

7.2.1 Co-phonology 1

Co-phonology 1, illustrated in (35), is repeated here as (37) and some examples are given in (37a-e):

(37) Max-WI >> Onset >> Morphological-Exponence >> Metrical-Structure

(37a) La offesa 'The offence'	Max-WI	Onset	Morphological Exponence	Metrical-Structure
la. of.fésa		*!		
☞ **l| of.fé.sa**			*	*
la| f.fé.sa	*!			*

(37b)Lo hanno saputo 'They have known it'	Max-WI	Onset	Morphological Exponence	Metrical-Structure
lo. án.no. sa.pú.to		*!		
☞ **l|án.no. sa.pú.to**				*
lo|n.no. sa.pú.to	*!			*

(37c) Mi aveva detto ' He/She had told me'	Max-WI	Onset	Morphological Exponence	Metrical-Structure
mi. a.vé.va. dét.to		*!		
☞**m|a.vé.va. dét.to**				*
mi. vé.va. dét.to	*!			

(37d) Le ho viste 'I have seen them'	Max-WI	Onset	Morphological Exponence	Metrical-Structure
le. ó . vís.te		* !		
☞ **l|ó. vís.te**			*,*	*
le.vís.te	*!			

(37e) Gli eredi 'The heirs'	Max-WI	Onset	Morphological Exponence	Metrical-Structure
gl i. e.ré.di		*!		
☞ **gl | e.ré.di**			*	*
gli . ré.di	*!			

In Co-phonology 1 the Markedness constraint Onset is ranked higher than the Faithfulness constraints Morphological-Exponence and Metrical-Structure, which leads towards VE. Co-phonology 1 makes clear that VE can apply provided that Markedness constraints are ranked higher than Faithfulness ones.

Speakers of Florentine Italian seem to refer to Co-phonology 1 in 81% of the overall occurrences to resolve a hiatus across word boundaries while the informant of Italian as spoken in Lecco seems to refer to Co-phonology 1 in 45% of the overall occurrences to resolve a hiatus across word boundaries. This accounts for the fact that vowel sequences across word boundaries are tolerated in Italian as spoken in Lecco but they are avoided (i.e. resolved through VE as anti hiatus strategy) in Florentine Italian.

7.2.2 Co-phonology 2

Co-phonology 2, illustrated in (36) is repeated here as (38) and some examples are given in (38a-e):

(38) Max-WI >> Morphological-Exponence >> Metrical-Structure >> Onset

(38a)della inflazione 'of the inflation'	Max-WI	Morphological Exponence	Metrical-Structure	Onset
☞**dèl.la.in.fla.zió.ne**				*
dèl.l|in.fla.zió.ne		*	*	
dèl.la|n.fla.zió.ne	*!		*	

(38b) Ti amo 'I love you'	Max-WI	Morphological Exponence	Metrical-Structure	Onset
☞ **ti. á.mo**				*
t|a.mo.			*	
ti.mo	*!			

(38c) Lo ha detto 'He/She has said it'	Max-WI	Morphological Exponence	Metrical-Structure	Onset
☞ **lo. a. dét.to**				*
l| a. dét.to			*	
lo. dét.to	*!			

(38d) Gli amici 'The friends'	Max-WI	Morphological Exponence	Metrical-Structure	Onset
☞ **gli. a.mí.ci**				*
gl| a.mí.ci		*	*	
gli. mí.ci	*!			

(38e) Queste attività 'These activities'	Max-WI	Morphological Exponence	Metrical-Structure	Onset
☞ Quès.te. at.ti.vi.tá				*
Quès.t | at.ti.vi.tá		*,*	*	
Quès.te | t.ti.vi.tá	*!			*

In Co-phonology 2 the Faithfulness constraints Morphological-Exponence and Metrical-Structure are ranked higher than the Markedness constraint Onset, which underscores that VE does not apply when Faithfulness constraints are ranked higher than Markedness ones.

Speakers of Florentine Italian seem to recur to Co-phonology 2 in 19% of the overall occurrences so as to preserve vowel sequences across word boundaries while the informant of Italian as spoken in Lecco seems to recur to Co-phonology 2 in 55% of the overall occurrences to preserve vowel sequences across word boundaries.

7.2.3 Some Further Remarks

Until now we have shown that the two different Co-phonologies are active in two different languages, i.e. in two different phonological systems: Florentine Italian and Italian as spoken in Lecco. The only difference is that they are employed with different frequency of occurrence. In fact, in Florentine Italian Co-phonology 1 (which favours VE) wins over Co-phonology 2 (which militates against VE).

We want to point out that re-ranking of the four constraints tends to be possible mainly for coronal vowels which are generally preserved and sometimes dropped (variation/exceptionatily, see § 5.3) while it is (nearly) impossible for dorsal ones which tend to be dropped. Moreover, we have not related the two different constraint rankings to two different speech rates, i.e. careful speech vs fast speech, in the sense that the one occurs in careful speech while the other is employed in fast speech as done, among others, by Anttila (2002).

7.3 Summary

The Optimal Theoretic Approach and the Co-phonology one allow us to show that the different frequency of occurrence of VE in the two varieties under analysis can be seen as a consequence of the Co-phonology which is selected whenever speakers have to derive an output from an input containing a vowel sequence across word boundaries.
Speakers of Florentine Italian select more often Co-phonology 1 (which supports VE) than Co-phonology 2, while the informant of Italian as spoken in Lecco selects Co-phonology 2 (which militates against VE) more frequently than Co-phonology 1.

8 Some Residual Issues

So far we have shown that VE is more productive in Florentine Italian than in Italian as spoken in Lecco. Previous studies on vowel deletion phenomena in Florentine Italian (see Agostiniani 1989, Rosati 2001 and Meinschaefer to appear) have shown that this variety of Italian is rich in various vowel deletion phenomena. It is probably for this reason that speakers tend to drop word-final vowels/affixes with high frequency, provided that they are underspecified for at least one of the features gender, number or case. By contrast, VE is less productive in Italian as spoken in Lecco and only some word-final vowels/affixes morphologically totally underspecified or only specified as [feminine] (and underspecified for the number feature), tend to be dropped regularly. Actually, the remaining word-final vowels/affixes, either morphologically totally underspecified or specified at some degree, are preserved nearly regularly.

Let's have a look at two other phonological phenomena which are typical of spoken Italian: Raddoppiamento Sintattico and Troncamento. Raddoppiamento Sintattico (*Consonant Doubling*) consists in the lengthening of a word-initial consonant if preceded by a word that ends in a stressed vowel, as in *caffé (k:)aldo* 'warm coffee' or *cittá (b:)ella* 'beautiful city' (cf. Chierchia 1982 and Loporcaro 1997). This phenomenon is said to be productive in central and southern varieties of Modern Standard Italian, therefore it is expected to be productive in Florentine Italian (which is a central variety of Modern Standard Italian) but not in Italian as spoken in Lecco (which is a northern variety of Modern Standard Italian).

Troncamento (*Truncation*) deletes a word-final /e/ or /o/ (more frequently /e/ than /o/) preceded by a sonorant when another word follows, as in *color_ marrone* 'brown colour', *non voler_ capire* 'not to want to understand' and is productive in Florentine Italian (see Meinschaefer to appear). Both these phenomena aim at creating well-formed syllables, since in Italian stressed syllables must have a branching rhyme. More in detail, Raddoppiamento Sintattico provides a consonantal slot to stressed, vowel ending, word-final syllables (which cannot undergo vowel lengthening) and Troncamento provides stressed syllables with a consonant-coda by deleting the word-final unstressed vowel which follows the sonorant after the stressed vowel.

At this point it seems to us that in those varieties where Raddoppiamento Sintattico and Troncamento are productive phenomena, such as Florentine Italian, VE is also very productive. On the other hand, in those varieties where Raddoppiamento Sintattico and Troncamento are not said to be productive, such as Italian as spoken in Lecco, VE is not particularly productive too and there is no pressure for initial syllables to have onsets and for hiatus sequences to be resolved. If it is true, it means that in those

varieties of spoken Italian where word-final, stressed syllables have to be CVC (i.e. they need to have a coda), correspondingly word-initial, stressed syllables have to be CV/CVC (i.e. they need to have an onset). However, this hypothesis needs to be tested against further data.

Conclusions

Based on the evidence from data from to Florentine Italian (a variety of Tuscan Italian) and from Italian as spoken in Lecco (a variety of Lombardic Italian) we have shown that neither is VE random, nor does each Fnc display its own peculiar behaviour towards VE. On the contrary, we have shown that VE can be considered a morpho-phonological process (or a morphologically driven phonological process) since it involves the deletion of phonological segments which, in their turn, realize some morphological features.

Actually, the number and type of morphological specifications displayed by the four Fnc word-final vowels seem to be responsible for the application or non-application of VE. In fact, VE is highly frequent, or at least preferred, with word-final vowels/affixes which are morphologically totally underspecified or only specified as [feminine]. VE is optional with the preposition *di* and with some word-final vowels/affixes only specified as [dative] or [plural]. VE is impossible with vowels/affixes with two morphological specifications ([feminine] and [plural] or [feminine] and [dative])

Moreover, the results of this study revealed that VE does not take place regularly provided that the target vowels are morphologically underspecified at least at some degree, but it entails some variation and exceptionality, which can be accounted for by two different co-phonologies (or constraint rankings): Co-phonology 1 (which supports VE) and Co-phonology 2 (which militates against VE).

It has also been shown that VE is more productive in Florentine Italian and less productive in Italian as spoken in Lecco. The different frequency of occurrence of VE in the two varieties under analysis can be seen as a consequence of the co-phonology which is selected when speakers have to derive an output from an input containing a vowel sequence across word boundaries. In fact, speakers of Florentine Italian select more often Co-phonology 1 (which supports VE) while the informant of Italian as spoken in Lecco selects more often Co-phonology 2 (which militates against VE).

In the future we aim at collecting new data so as to show whether, beyond morphology, VE is affected by other factors, such as the prosodic structure, the type of the context (recoverable or not recoverable by the speaker) and the type of Lex which follows the four elidable vowels. Once we will have cleared such points, we aim at doing some acoustic analysis to see what happens when VE takes place and when it is blocked, so as to understand if deletion and retention are gradual or categorical.

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