# SOME PHONOLOGICAL CHANGES IN MALTESE REFLECTED IN ONOMASTICS

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**Abstract:** The present paper evaluates the onomastic evidence for some of the changes affecting consonants in the history of Maltese. The analysis is based on a rich corpus of surnames, nicknames and place-names recorded between early 15<sup>th</sup> century and late 18<sup>th</sup> century. Onomastics is shown to offer valuable insights into the gradual emergence of the system of consonantal phonemes of Modern Maltese and of some of its specific phonological rules. It is also shown that evidence from onomastics disconfirms previous claims regarding the chronology of some of the changes affecting the consonants of Maltese.

Keywords: Maltese, surnames, nicknames, place-names, historical phonology

#### 1. Introduction

The relevance of onomastics for the history of Maltese has not gone unnoticed by researchers. Previous studies have looked into a number of issues, such as the distribution of surnames (Wettinger 1968; Wettinger 1969), the origin of surnames (Fiorini 1987-1988, Wettinger 1999, Cassar 2005), lexical items found or preserved in surnames and nicknames (Aquilina 1964), the origin of nicknames (Wettinger 1971), the semantics of nicknames (Camenzuli 2002), social aspects reflected in nicknames (Cassar Pullicino 1956), the distribution and origin of place-names (Wettinger 2000), the comparison of Maltese and Arabic place-names (Dessoulavy 1957), the influence of Arabic on place-names (Aquilina 1961), some morphological and syntactic characteristics of place-names (Wettinger 1983).

The present paper discusses the relevance of onomastics for the study of some developments affecting consonants in the history of Maltese. The corpus of data consists of Maltese surnames, nicknames and place-names recorded between the 15<sup>th</sup> and the 18<sup>th</sup> centuries. All entries include the year of the attestation and the source. When an exact year could not be established a hyphen is used to indicate approximate dates: a year preceded by a hyphen reads 'in or before', if followed 'in or after'. Relevant portions appear in boldface. Some of the original translations into English have been slightly amended; original translations into Italian are reproduced in the footnotes.

## 2. Analysis

2.1 Neutralization of voicing in word-final position

Modern Maltese exhibits devoicing of obstruents in word-final position (Cohen 1966: 13, Cohen 1967: 165, Borg 1975: 19-20, Borg 1997: 250, Cardona 1997: 103-104).

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Evidence from surnames and from nicknames of Arabic origin shows that the rule of word-final devoicing was not part of the phonology of 15<sup>th</sup> century Maltese:

(1)	a.	busali <b>b</b>	1419	(Wettinger 1968: 33)
	b.	mifsu <b>d</b>	1419	(Wettinger 1968: 42)
	c.	muhamu <b>d</b> / muhumu <b>d</b>	1419	(Wettinger 1968: 42)
	d.	sai <b>d</b> / say <b>d</b>	1419	(Wettinger 1968: 44)
	e.	haiuz,	1419	(Wettinger 1968: 30)
	f.	Cathaldus Muhumu <b>d</b>	1467	(Wettinger 1983: 39)
	g.	mifsu <b>d</b>	1480-	(Wettinger 1968: 42)
	h.	sai <b>d</b> / say <b>d</b>	1480-	(Wettinger 1968: 44)
	i.	L-Chiccu labia <b>d</b>	1483	(Wettinger 1971: 40)
		'Chiccu the white one'		

A devoiced word-final obstruent occurs in only one form:

(2) *aius* 1480- (Wettinger 1968: 30)

The spelling of place-names also points to the continuous occurrence of voiced obstruents in word-final position until much later, towards the end of the 16<sup>th</sup> century:

(3)	a.	mita Ilchade <b>d</b>	1461	(Wettinger 1983: 53)
	b.	'of the iron' bita mueze <b>b</b>	1486	(Wettinger 1983: 32)
		'of the gutter'		,
	c.	ta michamme <b>d</b>	1500	(Wettinger 1983: 40)
		'of Muh◊ammad'		
	d.	ta misge <b>d</b>	1537	(Wettinger 1983: 33)
		'of the synagogue'		
	e.	ta mihauueg¹	1544	(Wettinger 1983: 40)
		'of the bent one'		
	f.	il mueye <b>d</b>	1590	(Wettinger 1983: 37)
		'tablelands'		

The following are exceptions:

(4)	a.	gebel labia <b>th</b>	1501	(Wettinger 1983: 64)			
		'the white rock, the white	'the white rock, the white hill-side'				
	b.	merhelet ilmoho <b>s</b>	1523	(Wettinger 1983: 34)			
		'the goats' pen'					

However, the digraph in *labiath* 'white' appears to be simply an idiosyncratic spelling. In addition, the same place-name is also recorded with final <d>

 $<sup>^1</sup>$  Where <g> presumably stands for [dʒ]; cf. Modern Maltese  $mg\hbar awwe\dot{g}$ , in which < $\dot{g}$ > represents [tʃ].

(5) ta gebel labiod 1538 (Wettinger 1983: 64) 'of the white rock, of the white hill-side'

Clear instances of word-final devoiced obstruents are attested in surnames, nicknames and place-names from the 17<sup>th</sup> century onwards:

(6)	a.	Mihamme <b>t</b>	1632	(Wettinger 1983: 40)	
	b.	Mitahle <b>p</b>	1647	(Abela 1647: 65)	
		'place where the cows are mil	ked' <sup>2</sup>	,	
	c.	Kibur elihu <b>t</b>	1647	(Abela 1647: 82)	
		'the graves of the Jews' <sup>3</sup>			
	d.	Andar l'Isue <b>t</b>	1773	(Wettinger 1983: 65)	
		'Iswed's [= the dark-skinned's	s] threshing floor'		
	e.	ta' Lisue <b>t</b>	-1798	(Camenzuli 2002: 322)	
		'of black complexion, dark-skinned'			
	f.	ta' Supper <b>f</b> <sup>4</sup>	-1798	(Camenzuli 2002: 323)	
		'proud, arrogant'			

As shown by example (6f), word-final obstruent devoicing is also attested in nicknames of Romance origin.

To sum up, evidence from surnames, nicknames and place-names shows that obstruents did not undergo devoicing in word-final position in the 15<sup>th</sup> century. This is confirmed by textual evidence such as Pietru Caxaru's *Cantilena*<sup>5</sup> (c. 1450), which contains no instance of devoiced word-final obstruents<sup>6</sup>. On the other hand, the occurrence in surnames, nicknames and place-names beginning with the 17<sup>th</sup> century of devoiced word-final obstruents accords well with the fact that these are already attested in 1588, in Hieronymus Megiser's word-list<sup>7</sup>, where devoiced word-final obstruents occur in 10 forms out of 13. Voiced word-final obstruents still outnumber devoiced ones in Philip Skippon's word-list<sup>8</sup>, published in 1664, and in Giovan Francesco Buonamico's *Sonnet*<sup>9</sup> (c. 1675), out of five potential occurrences, only two forms exhibit a devoiced word-final obstruent.

#### 2.2 Voicing assimilation

In Modern Maltese, regressive voicing assimilation occurs when voiced and voiceless obstruents occur in adjacent position; consequently, adjacent obstruents agree in voicing, i.e. they are all either voiced or voiceless (Borg 1975: 15-16, Borg 1997: 250,

The text is reproduced in Wettinger and Fsadni (1968: 36) and in Wettinger and Fsadni (1983: 47).

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<sup>&</sup>lt;sup>2</sup> Cf. the translation into Italian 'luogo, oue si mungeua il latte' (Abela 1647: 65).

<sup>&</sup>lt;sup>3</sup> Cf. the translation into Italian 'Sepulchri de' Giudei' (Abela 1647: 82).

<sup>&</sup>lt;sup>4</sup> Spelled *supperv* in Modern Maltese.

<sup>&</sup>lt;sup>6</sup> See also Cohen and Vanhove (1991: 181).

<sup>&</sup>lt;sup>7</sup> First published in 1601. See Cowan (1964) and Cassola (1987-1988).

<sup>&</sup>lt;sup>8</sup> Reproduced in Cachia (2000: 34-40).

<sup>&</sup>lt;sup>9</sup> See the text in Cachia (2000: 18).

Cardona 1997: 104). The spelling of the following nickname suggests that regressive voicing assimilation did not operate in 15<sup>th</sup> century Maltese:

(7) Nardus Curmi dictu casbije 1499 (Wettinger 1971: 45) 'Nardus Curmi called Stubble'

The absence of regressive voicing assimilation in this form is not surprising in view of data provided by later textual evidence. Thus, regressive voicing assimilation is first attested in 1588 in Megiser's word-list. As for the 17<sup>th</sup> century, either the rule had not run its full course or perhaps it was still subject to variation. Thus, only a minority of the relevant forms recorded by Skippon in 1664 exhibit regressive voicing assimilation, while in Buonamico's *Sonnett* (c. 1675), obstruents undergo devoicing via regressive assimilation in all three relevant forms.

## 2.3 The interdentals fricatives $\underline{t}$ and $\underline{d}$

The interdentals  $\underline{t}$  and  $\underline{d}$  are not found in any of the earliest attestations of surnames, nicknames or place-names. Instead, their stop reflexes occur, as can be seen in the place-name below:

(8) habel Jtikil 1525 (Wettinger 1983: 64) 'the field-strip of the heavy man [nickname]'

The absence of  $\underline{t}$  and in particular of  $\underline{d}$  points to their quite unstable status at the time. The voiceless interdental  $\underline{t}$  occurs – some 75 years earlier – in only one form, spelled with in the *Cantilena* (c. 1450), and – 53 years later – in eleven forms, spelled with <f> (six occurrences), <h> (one occurrence), <s> (one occurrence) and <sf> (three occurrences), in Megiser's word-list, recorded in 1588. While the occurrence of  $\underline{t}$  in the *Cantilena* is dismissed by Cohen and Vanhove (1991: 1979) as being "undoubtedly already an exception in the epoch", Dessoulavy (1937: 1182) writes that "the words [in Megiser's word-list] seem to show that the soft th sound was still heard in Malta in the sixteenth century". On the other hand, the only known occurrence of  $\underline{d}$ , debatable at all that, is in 1588, in Megiser's word-list. Thus, it may well be that  $\underline{t}$  survived longer than  $\underline{d}$  and was still present in some varieties of  $16^{th}$  century Maltese.

The spelling of the place-names below is certainly interesting, since it raises the question of whether t may have survived in (some varieties of)  $17^{th}$  century Maltese:

(9)	a.	Ghar Bu <b>th</b> omna <sup>10</sup>	1647	(Abela 1647: 73)
	b.	Ben Varra <b>th</b> <sup>11</sup>	1647	(Abela 1647: 71)
		'the heir's son' 12		

<sup>&</sup>lt;sup>10</sup> Cf. Modern Maltese tomna 'measure (of corn'.

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<sup>&</sup>lt;sup>11</sup> Cf. Modern Maltese werriet.

<sup>&</sup>lt;sup>12</sup> Cf. the translation into Italian 'figlio dell' Herede' (Abela 1647: 71).

c. Ghar el Methkub 1647 (Abela 1647: 22) 'the drilled cave', 13

If the digraph <th>> stands indeed for  $\underline{t}$ , these would be the last known occurrences in (some varieties of) Maltese of the voiceless interdental fricative. Only slightly later, in Skippon's word-list from 1664, all reflexes of \* $\underline{t}$  are spelled with <t>.

### 2.4 The voiceless uvular stop q

The Modern Maltese reflex of \*q is the voiceless glottal stop '(Cohen 1966: 15, Cohen 1967: 166). The various spellings in surnames, nicknames and place-names show that earlier Maltese still had the voiceless uvular stop q.

One frequently occurring spelling is <c>. Consider first 15<sup>th</sup> and 16<sup>th</sup> century surnames and nicknames:

(10)	a.	Gullielmu Staferagi <b>c</b> uchede	1420s	(Wettinger 1971: 45)
		'Gullielmu Staferagi a louse j	ust hatched'	
	b.	Lucas Baldakin alias miseuh	ac 1512	(Wettinger 1971: 44)
		'Lucas Baldakin the variegate	ed'	
	c.	Joannes Vella Carchille	1531	(Wettinger 1971: 46)

Note in example (10c) the use of  $\langle c \rangle$  in early Romance loanwords, in which Maltese q is a reflex of an etymological  $/k/^{14}$ .

The use of  $\langle c \rangle$  for q is also attested in 15<sup>th</sup> and 16<sup>th</sup> century place-names. These include the examples below:

(11)	a.	mahanu <b>c</b>	1419	(Borg 1976: 22)
		'the strangled'		
	b.	<b>c</b> alet il habid	1487	(Wettinger 1983: 56)
		'the slave's fort'		
	c.	il chubejleth ri <b>c</b> a <b>c</b>	1530	(Wettinger 1983: 63)
		'the narrow field-strips'		
	d	il hofra fu <b>c</b> anie	1587	(Wettinger 1983: 61)
		the upper depression'		

The same is also true of a 17<sup>th</sup> century place-names:

(12)	a.	Ghar Bar <b>c</b> a	1647	(Abela 1647: 65)
		'the Cave of the Blessing' 15		
	b.	ta si <b>c</b> aya <b>c</b>	1659	(Wettinger 1983: 47)
		'of the small street'		

<sup>&</sup>lt;sup>13</sup> Cf. the translation into Italian 'grotta pertugiata, ò forata' (Abela 1647: 22).

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<sup>&</sup>lt;sup>14</sup> Compare *Carchille* to Modern Maltese *qarċilla*.

<sup>&</sup>lt;sup>15</sup> Cf. the translation into Italian 'Grotta della Benedittione' (Abela 1647: 65).

Another spelling is <q>, which occurs in the following nicknames:

(13)	a.	Luca Lukis bera <b>q</b>	1525	(Wettinger 1971: 40)
		'Luca Lukis the lightning'		
	b.	Lumejna bita sa <b>q</b> ora	1483	(Wettinger 1971: 46)
		'Lumeina of the sack'		

Also attested is <k>, in the 16<sup>th</sup> century place-names below:

(14)	a.	Il har <b>k</b> e il chamra	1523	(Wettinger 1983: 65)
	b.	'the red field' gued <b>k</b> leva	1533	(Wettinger 1983: 55)
	υ.	'the valley at Qleigha'	1333	(Wettinger 1763, 33)
	c.	habel Jti <b>k</b> il	1538	(Wettinger 1983: 64)
		'the field-strip of the heavy ma	n [nickname]	

With very few exceptions, Abela (1647) uses <K> for reflexes of \*q. Consider some of his examples of place-names:

(15)	a.	Blat el <b>K</b> amar	1647	(Abela 1647: 88)
		'the boulders of the moon' 16		
	b.	Ghar Ba <b>K</b> ar	1647	(Abela 1647: 73)
		'the cave of the cows' 17	1.647	(41 1 1647 100)
	c.	<i>MaKluba</i> 'the overturned' 18	1647	(Abela 1647: 100)
	d.	Tal eenie $\pmb{K}$	1647	(Abela 1647: 99)
		'of the young she-goats'		

Yet another spelling is <ch>, attested in the following nickname:

(16)Joanna filia Blasii Ketcuti alias manja bachira 1532 (Wettinger 1971: 44) 'Joanna daughter of Blasius Ketcuti alias ate a cow'.

The digraph <ch> also occurs, more frequently, in place-names:

(17)	a.	ma <b>ch</b> alube	1547	(Borg 1978: 22)
		'overturned'		
	b.	Il char <b>ch</b> a Jisighire	1574	(Wettinger 1983: 62)
		'the small field'		
	c.	Ichens ta fu <b>ch</b> Jl gued Jl chibir		(Wettinger 1983: 66)
		'the land on long lease above th	e big valley'	

 <sup>16</sup> Cf. the translation into Italian 'Roccami della luna' (Abela 1647: 88).
 17 Cf. the translation into Italian 'grotta delle vacche' (Abela 1647: 73).

<sup>&</sup>lt;sup>18</sup> Cf. the translation into Italian 'Riuoltata' (Abela 1647: 100).

Note, in (17c), that  $\langle ch \rangle$  is also used for [k], in *chibir* 'big'<sup>19</sup>. This is further proof that the Maltese reflex of \*q was still a voiceless uvular stop, perceived by the transcriber as similar/identical to [k]. The digraph  $\langle ch \rangle$  is also found in early 17<sup>th</sup> century place-names:

(18)	a.	tal machnu <b>ch</b>	1610	(Wettinger 1983: 39)
		'of the hoarse person'		
	b.	el ghile <b>ch</b> i sighar	1611	(Wettinger 1983; 620
		'the small fields'		

The single exception in which a reflex of \*q is not rendered by any letter must be a scribal error:

Similar various orthographic choices to render reflexes of \*q are attested in other early Maltese texts. Thus, around 1450, Caxaru uses <c> (four occurrences), <ck> (one occurrence) and <k> (two occurrences) in his *Cantilena*. In 1588, Megiser transcribes reflexes of \*q with <c> (one occurrence), <ch> (three occurrences) and <k> (one occurrence). In  $17^{th}$  century texts the situations is as follows. Skippon uses almost exclusively <k> (34 occurrences), <c> (one occurrence) and <q> (one occurrence) in 1664, in his word-list; Buonamico resorts to <cq> (three occurrences) and to <q> (one occurrence) in his *Sonnet* (c. 1675). Of these spellings, <ck> and <cq> are not attested in  $15^{th}$  and  $16^{th}$  century Maltese surnames, nicknames and place-names.

Later records, of late 18<sup>th</sup> century nicknames exhibit less variation, the only spellings attested being <c> and <ch>. Consider the examples under (20) and (21) of nicknames recorded between 1771 and 1798:

(20)	a.	il Ma <b>c</b> tula	-1798	(Camenzuli 2002: 323)
		'the murdered'		
	b.	ta' Misru <b>c</b> a	-1798	(Camenzuli 2002: 323)
		'stolen'		
(21)	a.	ta' Busa <b>ch</b> <sup>21</sup>	-1798	(Camenzuli 2002: 321)
		'pot-bellied'		
	b.	tal-mhalla <b>ch</b>	-1798	(Camenzuli 2002: 322)
		'the hanged'		

<sup>&</sup>lt;sup>19</sup> Cf. the nickname *Michele Agius il-Chibir* (Camenzuli 2002: 320).

<sup>&</sup>lt;sup>20</sup> Cf. Modern Maltese wiesa' [wiəsa'].

<sup>&</sup>lt;sup>21</sup> Where *bu* 'big', and *sach* 'belly', cf. Modern Maltese *żaqq*.

Again, these spellings differ from those in other contemporary sources, such as late 18<sup>th</sup> sermons, whose authors resort to <ck> and <cq> (Bonelli 1897).

To conclude, the surnames, nicknames and place-names recorded in the  $15^{th}$  through the  $18^{th}$  centuries show that Maltese still had the voiceless uvular stop q.

## 2.5 The voiceless velar fricative h and the voiceless pharyngeal fricative h $\diamond$

Modern Maltese has lost the distinction between the voiceless velar fricative h and the voiceless pharyngeal fricative h.

As shown below, reflexes of \*h are mostly spelled with <h> or <ch> in 15<sup>th</sup> century surnames and nicknames. These competing spellings are found even in variants of the same form, as in (22a):

(22)	a.	<b>h</b> axixe	1419	(Wettinger 1968: 31)
		<b>ch</b> axixe	1480-	(Wettinger 1968: 31)
	b.	Jacoba bita <b>ch</b> allas	1483	(Wettinger 1971: 43)
		'Jacoba of the pay master'		

The same hold true for 16<sup>th</sup> century place-names. Consider the pairs of variants below, in which the same noun is spelled either with <h> or with <ch>:

(23)	a.	il <b>ch</b> ireybeth	1509	(Wettinger 1983: 50)
		il <b>h</b> ireybet	1527	(Wettinger 1983: 42)
		'the small ruins'		
	b.	habel ta mnei <b>h</b> or	1537	(Wettinger 1983: 48)
		'the field of the little nose'		
		miney <b>ch</b> or	1543	(Wettinger 1983: 48)
		'little nose'		

The following example illustrates a rare spelling, namely, the use of <c>:

(24)	ta xueya <b>c</b>	1539	(Wettinger 1983: 43)
	'of the little old man'		

The reflexes of \* $h\phi$  in 15<sup>th</sup> and 16<sup>th</sup> century surnames and nicknames display the same alternation in the use of <h> or <ch>. This is illustrated below with orthographic variants of several forms:

(25)	a.	bu <b>h</b> aiar	1419		(Wettinger 1968: 33)
		bu <b>ch</b> aiar <sup>22</sup>		1480-	(Wettinger 1968: 33)
	b.	<b>h</b> akem / <b>h</b> akim / <b>ch</b> akim	1419		(Wettinger 1968: 40)
		<b>h</b> akim		1480-	(Wettinger 1968: 40)

<sup>&</sup>lt;sup>22</sup> Literally 'big stones'. Cf. the Modern Maltese form *Buhagiar*.

c.	mi <b>h</b> allef / mi <b>h</b> allif	1419	(Wettinger 1968: 42)
	Gullielmu Ma <b>h</b> allif Simine	1420-	(Wettinger 1971: 43)
	'Gullielmu Mahallif [called]	Fatness'	
	mi <b>ch</b> allif	1480-	(Wettinger 1968: 42)
d.	mella <b>h</b> i	1419	(Wettinger 1968: 42)
	mella <b>ch</b> i <sup>23</sup>	1480-	(Wettinger 1968: 42)
e.	mu <b>h</b> amud / mu <b>h</b> umud /		
	mu <b>h</b> umudi	1419	(Wettinger 1968: 42)
	Cathaldus Mu <b>h</b> umud	1467	(Wettinger 1983: 39)
	mi <b>ch</b> ammed	1500	(Wettinger 1983: 40)
	Mi <b>h</b> ammet	1632	(Wettinger 1983: 40)

The pairs of orthographic variants below attest to the alternation of <h> and <ch> in 15<sup>th</sup> and 16<sup>th</sup> century place-names as well:

(26)	a.	mira <b>ch</b> il	1467	(Wettinger 1983: 34)
		mira <b>h</b> el	1487	(Wettinger 1983: 34)
		'the animal yards'		
	b.	ta bir il <b>-ch</b> amem	1508	(Wettinger 1983: 58)
		ta bir il <b>h</b> ammem	1558	(Wettinger 1983: 58)
		'of the well of the bathhouse'		
	c.	ta <b>ch</b> umayra	1530	(Wettinger 1983: 45)
		ta <b>h</b> umayra	1543	(Wettinger 1983: 45)
		'of the small donkey'		
	d.	il <b>ch</b> ofra fucanie	1548	(Wettinger 1983: 61)
		Il <b>h</b> ofra Il fucanie	1587	(Wettinger 1983: 61)
		'the upper depression'		

The digraph  $\langle ch \rangle$  is also found in  $17^{th}$  century place-names, in which it represents a reflex of either  $*h \mid \Diamond$ , in (27), or of  $*h\Diamond$ , in (28):

(27)	tal ma <b>ch</b> nuch	1610	(Wettinger 1983: 39)
	'of the hoarse person'		
(28)	tal mofte <b>ch</b>	1611	(Wettinger 1983: 38)
	'of the key'		

In addition, the reflex of \*h0 is also spelled with <c>, as in the following example:

The spellings of the surnames, nicknames and place-names considered so far suggest that the two fricatives \*h and \*h0 had already merged as early as the 15<sup>th</sup>

<sup>&</sup>lt;sup>23</sup> Literally from *Mellieħa* [melliəħa], a town in Malta.

century. Contemporary textual evidence also seems to point to the same conclusion. Thus, in the Cantilena (c. 1450) reflexes of \*h are represented by <c> (one occurrence), <h> (two occurrences) and  $\langle ch \rangle$  (two occurrences), while reflexes of  $h \diamond are$  spelled with  $\langle h \rangle$ (one occurrence) and <ch> (three occurrences). In the words recorded in 1588 by Megiser reflexes of \*h are rendered with <c> (one occurrence) and <ch> (eight occurrences), whereas reflexes of \*h0 are represented by <c> (one occurrence), <h> (two occurrences), <k> (one occurrence), <ch> (four occurrences) and Ø (one occurrence). Skippon uses only two spellings in his 1664 word-list: <h> (one occurrence) and <ch> (16 occurrences) for reflexes of \*h, <h> and <ch> (13 occurrences) for reflexes of  $*h\lozenge$ . In Buonamico's Sonnet (c. 1675) the following spellings are found: <ch> (three occurrences) for reflexes of \* h\_, <h> (four occurrences) and <ch> (five occurrences) for reflexes of \*h $\Diamond$ . However, in Abela (1647) – whose relevance to the study of Maltese proper names is unanimously acknowledged – with one single exception all reflexes of \*h are spelled with <ch>, whereas all reflexes of  $*h\lozenge$  are spelled with  $<h\gt$ . Consider some of the place-names recorded by Abela (1647), containing reflexes of \* h\_, in the examples under (30), and of \* $h\emptyset$ , in the forms under (31) respectively:

(30)	a.	<i>Vyed l'Aherief</i> <sup>24</sup> 'valley of the lambs' <sup>25</sup>	1647	(Abela 1647: 73)
	b.	Dachlet 'entrance',26	1647	(Abela 1647: 25)
	c.	Ras <b>ch</b> anzir	1647	(Abela 1647: 16)
	d.	'the cape of the pig'  Tal Cherba  'of the ruined building' <sup>27</sup>	1647	(Abela 1647: 98)
	e.	Vyed el Charrub  'the valley of the locusts' 28	1647	(Abela 1647: 73)
(31)	a.	Bir el Hut  'the water tank of the fish'	1647	(Abela 1647: 85)
	b.	L'Aharasce 'rough terrain' 29	1647	(Abela 1647: 25)
	c.	Bir Miftuh  'the open water tank'	1647	(Abela 1647: 103)
	d.	Taht el gebel 'under the rock' <sup>30</sup>	1647	(Abela 1647: 28)

<sup>&</sup>lt;sup>24</sup> This is the only exception, in which a reflex of \*h\_ is spelled with <h>.

<sup>&</sup>lt;sup>25</sup> Cf. the translation into Italian 'valle d'agnelli' (Abela 1647: 73)

<sup>&</sup>lt;sup>26</sup> Cf. the translation into Italian 'entrata' (Abela 1647: 25(.

<sup>&</sup>lt;sup>27</sup> Cf. the translation into Italian 'del edificio rouinato' (Abela 1647: 98).

<sup>&</sup>lt;sup>28</sup> Cf. the translation into Italian 'valle delle carrobbe' (Abela 1647: 73).

<sup>&</sup>lt;sup>29</sup> Cf. the translation into Italian 'terreno aspro, e ruuido' (Abela 1647: 25).

<sup>&</sup>lt;sup>30</sup> Cf. the translation into Italian 'sotto la rocca' (Abela 1647: 28).

Finally, in late  $18^{th}$  century nicknames an identical spelling  $\langle h \rangle$  is used for reflexes of both  $h \mid$  and  $h \nmid h >$ , as in the examples under (32) and (33) respectively:

(32)	a.	<b>H</b> anfusu	-1798	(Camenzuli 2002: 324)
		'grumpy person' [lit. 'beetle']		
	b.	il- <b>H</b> addiela	-1798	(Camenzuli 2002: 322)
		'paralyzed'		
	c.	Mo <b>h</b> hu Blilma	-1798	(Camenzuli 2002: 322)
		'ignorant' [lit. 'his brains are w	ith water']	
	d.	ta' <b>H</b> arbat	-1798	(Camenzuli 2002: 323)
		'destroyer'		
	e.	tal-Mis <b>h</b> ut	-1798	(Camenzuli 2002: 323)
		'the cursed'		
(33)	a.	Ma <b>h</b> rus	-1798	(Camenzuli 2002: 322)
		'kept in custody'		
	b.	ta' <b>H</b> arrasci	-1798	(Camenzuli 2002: 323)
		'the harsh one'		
	c.	$tal extbf{-} extbf{ extit{H}}obla$	-1798	(Camenzuli 2002: 322)
		'pregnant'		

The use of <h> for reflexes of both fricatives at issue is attested in late 18<sup>th</sup> century texts (Bonelli 1897) as well.

To sum up, evidence from  $17^{th}$  century place-names (in Abela 1647) suggests that the voiceless velar fricative h and the voiceless pharyngeal fricative h had not as yet merged in the  $17^{th}$  century. Late  $18^{th}$  century spellings of nicknames already point to the tendency towards the merger of these two fricatives.

## 2.6 The voiced velar fricative $\dot{g}$ and the voiced pharyngeal fricative '

As is well known, Modern Maltese no longer has the voiced velar fricative  $\dot{g}$  and the voiced pharyngeal fricative' (Borg 1997: 246, Cardona 1997: 22-23). As mentioned by Borg (1997: 246), Modern Standard Maltese exhibits the outcome of "the reinterpretation of the OA [= Old Arabic] velar and pharyngeal fricative pair [ $\partial$ ] and [ $\gamma$ ], chiefly as vocalic length".

The two consonants still occur in  $15^{th}$  and  $16^{th}$  century place-names. In the case of  $\dot{g}$ , the most frequent spelling is, by far,  $\langle g \rangle$ , as in the examples below:

(34)	a.	<b>g</b> ar Jlkebir	1467	(Wettinger 1983: 62)
		'the big cave'		
	b.	tal ma <b>g</b> alac	1500	(Wettinger 1983: 37)
		'of the enclosure'		
	c.	<b>g</b> ulejca	1514	(Wettinger 1983: 43
		'small field'		
	d.	tal <b>g</b> ureife	1537	(Wettinger 1983: 44)
		'of the small upper floor room'		

e.	<b>g</b> adiret J xorraf	1564	(Wettinger 1983: 56)
	'Xorraf's lake'		
f.	il <b>g</b> alca Jseude	1584	(Wettinger 1983: 65)
	'the black field'		

In a number of place-names  $\dot{g}$  is rendered by  $\langle h \rangle$ :

(35)	a.	xaret il <b>h</b> adiri 'the scrubland at the lake'	1487	(Wettinger 1983: 56)
	b.	misirach sihjr  'the small open place'	1521	(Wettinger 1983: 62)
	c.	Jl harke il chamra 'the red field'	1523	(Wettinger 1983: 65)

The use of diagraphs is also attested. One is <gh>, in the following 16<sup>th</sup> century place-names:

(36)	a.	il galca si <b>gh</b> ire	1508	(Wettinger 1983: 62)
		'the small field'		
	b.	O	1542	(Wettinger 1983: 43)
			1574	(1002 (2)
	c.	O	15/4	(Wettinger 1983: 62)
	b. c.	el ghuleica 'the small field'  JI charcha Jissighire 'the small field'	1542 1574	(Wettinger 1983: 43) (Wettinger 1983: 62)

Moreover, the same spelling is found in 17<sup>th</sup> century place-names and it is the only one used by Abela (1647):

(37)	a.	el <b>gh</b> ilechi si <b>gh</b> ar	1611	(Wettinger 1983: 62)
		'the small fields'		
	b.	Gebel el <b>Gh</b> zara	1647	(Abela 1647: 71)
		'the rock of abundance'		
	c.	Ghar Ghliem	1647	(Abela 1647: 72)
		'the serf's cave' <sup>31</sup>		
	d.	Hal Seye <b>gh</b>	1647	(Abela 1647: 101)
		'the village of the silversmi	ith <sup>,32</sup>	

Another digraph is <ch>, which occurs in the 16<sup>th</sup> century place-name below:

The same spelling is found in one 17<sup>th</sup> century place-name, in word-final position:

 <sup>&</sup>lt;sup>31</sup> Cf. the translation into Italian 'Grotta del Seruo' (Abela 1647: 72).
 <sup>32</sup> Cf. the translation into Italian 'Casale dell' Argentiere' (Abela 1647: 101).

Given Abela's consistency in transcribing reflexes of \*\dec with <gh>, in this form <ch> stands for the voiceless velar fricative [x]. This is an allophone of ', a result of obstruent devoicing in word-final position. Finally, in the corpus there is just one exception, in which a reflex \*\dec \dec i\$ is not spelled with a consonant letter:

In all likelihood, this apparent exception can be dismissed as a misspelling, where <a> should read <g>. As shown above, all reflexes of \* $\dot{g}$  are rendered with a consonant letter or a digraph, and there is no case of the use of double vowel letters suggestive of the reinterpretation of \* $\dot{g}$  as vocalic length.

A comparison with other early texts yields the following results. Caxaru uses  $\langle g \rangle$  (one occurrence) in his *Cantilena* (c. 1450). Megiser writes  $\dot{g}$  with  $\langle r \rangle$  (one occurrence) in 1588. Buonamico uses  $\langle gh \rangle$  (two occurrences) in his *Sonnet* (c. 1675). Finally, in 1664 Skippon is remarkably consistent in the almost exclusive use of  $\langle g \rangle$  (12 occurrences), with one exception when he uses  $\langle h \rangle$ , in word-final position. As in the place-names considered above, in all these early sources, \* $\dot{g}$  is always transcribed by a consonant letter. On the other hand,  $\langle h \rangle$  and  $\langle ch \rangle$  are used to render  $\dot{g}$  only in place-names, in which the use of  $\langle r \rangle$  is not attested

In sum, evidence from place-names recorded until the  $17^{th}$  century – corroborated with the one provided by other contemporary sources – shows that  $\dot{g}$  still occurred in Maltese, in various phonological environments, including word-final position.

In late 18<sup>th</sup> century nicknames, while <g> no longer appears, <h> continues to be used:

Of the two digraphs formerly used, <gh> and <ch>, only the latter is found:

Given that <ch> occurs in word-final position, it reflects a phonetic realization as a voiceless velar fricative [x], explicitly noted and commented upon by contemporary

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<sup>&</sup>lt;sup>33</sup> Cf. the translation into Italian 'Tintore' (Abela 1647: 69).

<sup>&</sup>lt;sup>34</sup> Cf. Modern Maltese *bagħal* 'mule'.

<sup>&</sup>lt;sup>35</sup> Cf. Modern Maltese *miżbugħ* 'painted'.

writers<sup>36</sup>. On the other hand, <gh> continues to occur in other late 18<sup>th</sup> sources, such as sermons (Bonelli 1897).

Consider next the fate of the voiced pharyngeal fricative '. In 15<sup>th</sup> century surnames and 16<sup>th</sup> century place-names, the most frequently found spelling is <h>, both word-initially and word-medially, as illustrated by the examples under (43) and (44) respectively:

(43)	a.	<b>h</b> abdille	1419	(Wettinger 1968: 30)
	b.	<b>h</b> aius	1419	(Wettinger 1968: 30)
	c.	<b>h</b> arabi	1419	(Wettinger 1968: 30)
	d.	calet il <b>h</b> abid	1487	(Wettinger 1983: 56)
		'the slave's fort'		
(44)	a.	tal <b>h</b> usayfar	1507	(Wettinger 1983: 47)
		'of the small bird'		
	b.	merhelet ilmo <b>h</b> os	1523	(Wettinger 1983: 34)
		'the goats' pen		

The digraph <ch> appears in one 16<sup>th</sup> century place-name:

(45)	bital <b>ch</b> arab	1529	(Wettinger 1983: 52)
	'of the Arabs'		

The reflex of word-initial \* is not transcribed with any consonant letter in several surnames and nicknames recorded in the 15<sup>th</sup> century:

(46)	a.	abdille	1480-	(Wettinger 1968: 30)
	b.	aius	1419	(Wettinger 1968: 30)

Similarly, in the following  $16^{th}$  century place-name word-initial ' is not rendered in the orthography by any consonant letter:

(47)	te gued bir abdalla	1542	(Wettinger 1983: 57)
	'of the valley of Abdilla's well'		

Word-medial ', if transcribed, is spelled also spelled with <h>, as in the following nickname, in (48), and place-names, under (49):

(48)	Jaco	bo Chirmel alias me <b>h</b> ze	1494	(Wettinger 1971: 44)
	'Jaco	obo Chirmel alias the goat'		
(49)	a.	maca <b>h</b> ad ilme	1504	(Wettinger 1983: 32)
		'the place where water co	llects'	
	b.	merĥelet il mo <b>h</b> os	1523	(Wettinger 1983: 34)
		'the goats' pen'		

<sup>&</sup>lt;sup>36</sup> See Vassalli (1796: 314).

c.	ta la <b>h</b> ueyn	1549	(Wettinger 1983: 43)
	'of the small spring'		

On the other hand, intervocalic ' is not represented by any consonant letter in variants of the place-name *Oleigha*, cf. Ar. *quley* 'a 'small fort'<sup>37</sup>:

(50)	a.	gued il culeja	1488	(Wettinger 1983: 55)
	b.	gued il culaya	1500	(Wettinger 1983: 55)
	c.	gued kleya	1533	(Wettinger 1983: 55)
		'the valley at Qleigha'		

Mention should also be made of word-final \*' in the various reflexes of Ar.  $mit\bar{a}^{38}$ . In  $15^{th}$  and  $16^{th}$  century nicknames and place-names three such reflexes occur: bita and, more rarely, mita, and ta / tha / te, the latter replacing the first two before the end of the  $16^{th}$  century<sup>39</sup>. The spelling of these reflexes – i.e. the absence of any consonant letter – suggests that the voiced pharyngeal fricative 'no longer occurred in word-final position, if preceded by /a/. Consider the nicknames under (51) and the place-names under (52) respectively:

(51)	a.	Francza bita sible	1483	(Wettinger 1971: 46)
		'Francza of the dung'		
	b.	Lumejna bita saqora	1483	(Wettinger 1971: 46)
		'Lumejna of the sack'		
	c.	Palma et Catharina bita gilidi	1485	(Wettinger 1971: 43)
		'Palma and Catherina of the ski	n'	
	d.	Luchia bita lispital	1498-	(Wettinger 1971: 46)
		'Luchia from the hospital'		
(52)	a.	mita Jlchaded	1461	(Wettinger 1983: 53)
		'of the iron'		
	b.	bita muezeb	1486	(Wettinger 1983: 54)
		'of the gutter'		
	d.	ta ilculeyat	1496	(Wettinger 1983: 50)
		'of the small forts'		
	d.	tha Ilmreychilet	1542	(Wettinger 1983: 34)
		'of the small animal yards'		
	e.	te gued bir abdalla	1542	(Wettinger 1983: 57)
		'of the valley of Abdilla's well'	,	

Reflexes of word-initial and word-medial \* 'are almost consistently spelled with a double vowel letter by Abela (1647):

<sup>39</sup> According to Wettinger (1983: 54), "the last known use of *bita* occurs in 1539".

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<sup>&</sup>lt;sup>37</sup> In the Modern Maltese spelling the digraph <gh> represents here an etymological '.

<sup>&</sup>lt;sup>38</sup> Cf. Algerian Arabic *ntā* ', Moroccan Arabic *mtā* ', *ntā* ', Tunisian Arabic *mtā* ', *mtɛ*: ' and Modern Maltese *ta* '.

(53)	a.	Hal dheeif	1647	(Abela 1647: 84)
	b.	'the weak [man]'s village',40  Kalaa tàl Miggiär  'the fortress of Migar'	1647	(Abela 1647: 68)
	c.	Oosc el Hamiema	1647	(Abela 1647: 27)
	d.	'the dove's nest' <sup>41</sup> Tal eenieK	1647	(Abela 1647: 99)
	e.	'of the young she-goats'  Vyed el Aasel  'the stream of honey'42	1647	(Abela 1647: 71)

There are several exceptions. These include a form spelled with a single vowel letter in word-initial position, but which also has a variant with a double vowel letter. Compare the spellings of 'slaves' and 'slave' respectively in the following place-names:

(54)	a.	Kalaa tal Abid	1647	(Abela 1647: 71)		
		'the slaves' fort' <sup>43</sup>				
	b.	Vyed tà Bir <b>Aa</b> bd Alla	1647	(Abela 1647: 100)		
		'the valley with the well of God's serf' <sup>44</sup>				

Abela's spellings of the reflexes of Ar.  $mit\bar{a}$ ' confirm that 'no longer occurred in this position if preceded by the vowel /a/:

(55)	a.	tà Bunachla	1647	(Abela 1647: 68)
		'of the big palm tree'		
	b.	Ta Lahgiar	1647	(Abela 1647: 106)
		of the stones, 45		

It appears, then, that  $\dot{g}$  and 'had not as yet merged in Abela's time. This is further confirmed by the following place-name which contains reflexes of both  $\dot{g}$  and  $\dot{g}$ , in the same, word-initial position:

While Abela's spellings of reflexes of word-initial and word-medial \* ' with a double vowel letter are suggestive of vocalic length, reflexes of \* ' continue to be rendered with

<sup>46</sup> Cf. the translation into Italian 'Fontana del coruo' (Abela 1647: 66).

<sup>&</sup>lt;sup>40</sup> Cf. the translation into Italian 'Casale del macilente, ò debole' (Abela 1647: 84).

<sup>&</sup>lt;sup>41</sup> Cf the translation into Italian 'nido della Colomba' (Abela 1647: 27)

<sup>&</sup>lt;sup>42</sup> Cf. the translation into Italian 'torrente di Mele' (Abela 1647: 71).

<sup>&</sup>lt;sup>43</sup> Cf. the translation into Italian 'forte [dei] schiaui (*Aabid* detti in Arabo)' (Abela 1647: 71).

<sup>&</sup>lt;sup>44</sup> Cf. the translation into Italian 'valle ou' è il pozzo del seruo di Dio' (Abela 1647: 100).

<sup>&</sup>lt;sup>45</sup> Cf. the Italian translation 'delle pietre' (Abela 1647: 107).

consonant letters as well. For example, the reflex of \* is spelled with <h> in the following  $17^{th}$  century place-name:

(57) gudia el **h**alia (Wettinger 1983: 61) 'the high hillock'

Other 15<sup>th</sup>, 16<sup>th</sup> and 17<sup>th</sup> century sources also display a great variety in the spelling of reflexes of \* '. Thus, in the Cantilena (c. 1450), <h> stands for 'word-initially (four occurrences) and word-medially (four occurrences); in word-medial position ' is also transcribed with <g> (one occurrence); 'is not represented by any letter in intervocalic (five occurrences) and word-final position (two occurrences). In 1588, Megiser uses in his word-list <h> (one occurrence) and <ch> (one occurrence) for ' in word-medial position; on the other hand, 'is also represented by Ø: word-initially (four occurrences), word-medially (one occurrence) and word-finally (three occurrences). By far the widest range of orthographic options is found in Skippon's word-list in 1664: Ø (10 occurrences), a double vowel letter (two occurrences) or a vowel letter (one occurrence) in word-initial position; <h> (one occurrence), a double vowel letter (three occurrences) or  $\emptyset$  (one occurrence) in intervocalic position; a vowel (two occurrences) or  $\emptyset$  (nine occurrences) in other word-medial contexts; <h> (three occurrences), <ch> (two occurrences) or Ø (three occurrences) in word-final position<sup>47</sup>. Finally, Buonamico does not use any consonant letter in his Sonnet (c. 1675): reflexes of 'are transcribed with a double vowel letter both word-initially (two occurrences) and word-medially (two occurrences); one word-initial 'is not represented by any letter. The occasional use of a double vowel letter by both Skippon and Buonamico might suggest that the gradual reinterpretation of Ar. 'as vocalic length had already started, not only in word-initial, but also in word-medial position.

The voiced pharyngeal fricative 'is still attested in word-medial position in a late 18<sup>th</sup> century nickname:

(58) *tal-mhallach* -1798 (Camenzuli 2002: 322) 'the hanged'

The use of <h> is rather surprising since in other contemporary texts, if transcribed, 'is spelled with <gh> both word-initially and word-medially, e.g. in late 18<sup>th</sup> century sermons (Bonelli 1897). As in earlier nicknames and place-names, 'does not occur word-finally, if preceded by the vowel /a/. In this case, \* 'appears as <'>, as in the reflex of Ar. mitā'

(59) a. ta' Fattar -1798 (Camenzuli 2002: 321) 'stout person of awkward figure'
b. ta' Coleriti -1798 (Camenzuli 2002: 322) 'angry, enraged'

<sup>47</sup> This variety of spellings clearly disconfirms Cachia's (2000: 41) claim that Skippon spelled "words with 'ayn [...] with double vowels".

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c.	ta' Fitta	-1798	(Camenzuli 2002: 323)
	'importunate person'		
d.	ta' Gamiema	-1798	(Camenzuli 1798: 324)
	'grumbling person [lit. 'turtle	-dove']'	

To conclude, the spelling of surnames, nicknames and place-names is further confirmation of the fact that both the voiced velar fricative g and the voiced pharyngreal fricative 'survive to some extent in most dialects of Maltese, i.e. they are still two different phonemes, at least until the end of the 18th century48. The use of <h> for both consonants may be indicative of the tendency towards their merger, which also accords with explicit descriptions and comments in contemporary sources<sup>49</sup>

## 2.7 The voiceless laryngeal fricative h

The inventory of consonantal phonemes of Modern Maltese does not include the laryngeal fricative h (Cohen 1967: 164, Borg 1973: 8, Borg 1975: 11, Cardona 1997: 23).

The following  $15^{th}$  and  $16^{th}$  century place-names show that h still occurred in Maltese, including in intervocalic position:

(60)	a.	za <b>h</b> ara	1480-	(Borg 1976: 194)
		'blossom'		
	b.	si <b>h</b> eym	1514	(Wettinger 1983: 42)
		'small allotment'		
	c.	si <b>h</b> eym	1530	(Wettinger 1983: 42)
		'small allotment'		
	d.	ysi <b>h</b> eyem	1558	(Wettinger 1983: 42)
		'the small allotment'		

This accords with the situation reflected by 15th and 16th century texts. In the Cantilena (c. 1450), 11 out of 12 possible occurrences of h are reflected in the spelling, invariably <h>: all eight instances of word-initial [h], three out of four cases of wordmedial [h], two of which in intervocalic position. Similarly, in Megiser's word-list (1588), h is rendered with <h> in three out of four possible cases: two word-initially and one word-medially in intervocalic position; the only word-final \*h is not reflected in the

Relevant forms in  $17^{th}$  century place-names show that h continued to occur, including in intervocalic position. Consider the following examples:

(61)	a.	Bir el dheeb [= de <b>h</b> eb]	1647	(Abela 1647: 107)
		'well of gold' <sup>50</sup>		
	b.	Kibur eli <b>h</b> ut	1647	(Abela 1647: 82)
		'the graves of the Jews'		

<sup>&</sup>lt;sup>48</sup> And possibly in early 19<sup>th</sup> century as well.

<sup>50</sup> Cf. the translation into Italian 'pozzo d'oro' (Abela 1647: 107).

<sup>&</sup>lt;sup>49</sup> Such as Vassalli (1796: 239 and 314).

c.	ras e Ra <b>h</b> eb	1647	(Abela 1647: 24)
	'the cape of the monk' <sup>51</sup>		
d.	Ta Bu <b>h</b> a	1647	(Abela 1647: 97)
	of her father, 52		

Corroborating evidence is provided by other samples of  $17^{th}$  century Maltese. Thus, seven forms in Skippon's word-list (1664) testify to the occurrence of h: two word-initially and five word-medially, of which four in intervocalic position; in two cases, h is represented in intervocalic position by  $\emptyset$ ; however, in one of these forms it is also spelled with <h>. Finally, in Buonamico's *Sonnet* (c. 1675), h is represented in the spelling with <h> in all four possible instances: twice word-initially and twice word-medially in intervocalic position.

Word-initial h is also found in late  $18^{th}$  century nicknames:

The occurrence of word-initial h is corroborated by evidence provided by late  $18^{th}$  texts (Bonelli 1897), in which h, rendered by  $\langle h \rangle$ , which is well attested not only word-initially, but also word-medially, and which apparently still occurs even in word-final position.

To sum up, evidence from pre- $19^{th}$  century nicknames and place-names confirms that the voiceless laryngeal fricative h was still part of the phonological system of Maltese.

#### 3. Conclusions

In many cases, onomastics corroborates evidence gleaned from other early sources, and confirms the absolute and relative chronologies suggested in the literature on the historical phonology of Maltese. For instance, both onomastics and other textual evidence show that the rules of word-final devoicing of obstruents and of regressive voicing assimilation, discussed in sections 2.1 and 2.2 respectively, start operating towards the end the 16<sup>th</sup> century.

In other cases, however, evidence provided by the transcriptions of proper names points to rather different conclusions. For instance, as shown in section 2.3, (some varieties of) Maltese may have still had the interdental fricative  $\underline{t}$  in the first half of the  $17^{th}$  century. Corroborated with the occurrence of  $\underline{t}$  in Megiser's word-list recorded in 1588, this refutes a recurrent claim in the literature. Thus, Cohen (1966: 13) states that "the confusion of these two articulations [dental and interdental] may go back to a pre-Maltese stage". The same claim is repeated in Cohen (1967: 168): "one can assign to a pre-Maltese stage the confusion of dentals and interdentals". More recently, Vanhove

<sup>&</sup>lt;sup>51</sup> Cf. the translation into Italian 'Capo, ò Promontorio del monaco' (Abela 1647: 24).

<sup>&</sup>lt;sup>52</sup> Cf. the translation into Italian 'di suo padre' (Abela 1647: 97).

(1994: 170) also writes that "the absence of interdentals goes back to the pre-historical period of Maltese". Clearly, the demise of  $\underline{t}$  occurred at a much more recent date than hitherto assumed.

As is well known, the current phonetic realization of the reflex of \*q as a voiceless glottal stop has been taken by some linguists as proof of the Oriental origin of Maltese (Stumme 1904) or of the influence of an alleged Punic substrate (Aquilina 1981). The evidence provided by the spellings of nicknames discussed in section 2.4 demonstrates that the reflex of \*q was still realized phonetically as a voiceless uvular stop. This clearly rules out a Punic substratal effect, which would have manifested itself much earlier in the history of Maltese. Moreover, as put by Cohen and Vanhove (1991: 181), "the change from /q/ to /'/ is not contemporary with the Arabicization of the island". Finally, the fact that Maltese did have the voiceless uvular stop q also disconfirms Krier's (1976: 35) claim that in the adaptation of Romance loanwords "the strangest case of mutation is represented by "the glottal stop" which replaces voiceless and voiced velars". Krier (1976: 35) writes that this distinguishes Maltese form the Arabic dialects spoken in the Maghreb, in which "Romance /k/ is borrowed under the form of /q/". In fact, exactly as in the Maghrebian dialects, /k/ in early Romance loanwords is first rendered by [q]. It is only at a later stage that the phonetic realization of the reflex of \*q shifted to ['], the voiceless glottal stop of Modern Maltese

According to Borg (1997: 259), "the unconditional merger of \*h and \*x had probably already occurred in Medieval M [= Maltese]". In support of this claim, Borg (1997: 259) mentions "the use of the digraph ch for the reflex of both OA [= Old Arabic] sounds in the late 15th century poem, Peter Caxaro's *Cantilena*". However, as shown in section 2.5, the different orthographic choices in the transcription of reflexes of \*g and \* suggests that at least until the  $17^{th}$  century the two fricatives had not merged yet and had not been reinterpreted as vocalic length. Under the circumstances, Cantineau's (1960: 72) claim that "in Maltese, undoubtedly under the influence of the Punic substrate, the old h~ became  $h \emptyset$  and the old g turned into "cannot be upheld.

Proper names have thus been shown to represent a source worth tapping into in search of insights into the gradual emergence of the system of consonantal phonemes of Modern Maltese and of some of its specific phonological rules.

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