Chapter 5

Segmental and prosodic influences on Bolognese epenthesis

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Bolognese, the Gallo-Italic grammar of Bologna, eliminates illicit coda clusters via epenthesis. This process is noteworthy for two reasons. First, as in other closely related Romance varieties such as Donceto (Cardinaletti & Repetti 2008), Bolognese prosodic structure and phonotactic patterns determine whether an epenthetic vowel appears: certain clusters are permitted within a PWd but trigger epenthesis when they straddle a PWd boundary, and sonorant-final coda clusters are always subject to epenthesis. Second, Bolognese displays two epenthetic vowels. [u] appears before [v, m], while [e] appears elsewhere. In closely related grammars like Donceto, only one epenthetic vowel ([ə]) appears. We build on Cardinaletti & Repetti's (2008) analysis of coda clusters in Donceto to account for the Bolognese facts.

1 Two contexts for epenthesis

In many ways, pronominal clitics in Bolognese (Romance; Italy) are typical of Romance languages, making the usual morphosyntactic distinctions and mostly exhibiting a typical set of consonants, as highlighted in Table 1. These clitics vary phonologically according to (i) whether they appear as proclitics or enclitics (though the 2P subject clitic (SCL) is only enclitic, as in related grammars) and (ii) whether they are adjacent to vowels or consonants. On the other hand, the complexity Bolognese permits in onsets and codas is unusual among Romance languages. Our focus in this paper is these clitics, all of which (in their enclitic

form) display a V ~ ∅ alternation.[1] We argue that this vowel is epenthetic, breaking some clusters up that are permissible in other contexts. In support of this claim we examine other contexts for epenthesis in the language, presenting a unified account for epenthesis in postverbal clitics and these other contexts.

Table 1: Clitic pronouns in Bolognese

	SCL		DCL		ACL		PRT
	SING	PLUR	SING	PLUR	SING	PLUR	
1			m	s	m	s	
2	t	꞊v	t	v	t	v	
3MSG	(a)l				(a)l		n
3RFLX			s	s	s	s	

In (1–2) we provide data showing the enclitics that participate in the noted alternation. Like in other Gallo-Italic varieties, subject clitics in Bolognese appear only with tensed verbs and are postverbal in interrogatives (1). The object clitics (dative/indirect (DCL), accusative/direct (ACL), and partitive (PRT)) appear postverbally with tenseless verbs (infinitives, imperatives, gerunds) (2). In both sets of data, we observe the mentioned V ~ ∅ alternation, and the vowels that appear before the relevant consonants, [e] and [u], shall be a main focus of our attention below.

(1) a. i. ꞌdoːrm꞊**e**t   'Are you sleeping?'   2SG
        ii. durmiꞌrɛː꞊t   'Will you sleep?'
    b. i. ꞌdoːrm꞊**e**l   'Is he sleeping?'   3SG
        ii. durꞌme꞊l   'Did he sleep?'
    c. i. _ [2]   2PL
        ii. durꞌmi꞊v   'Are you.PL sleeping?'

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[1]The gaps in Table 1 represent non-existent clitics (e.g. reflexive SCLs) or would contain clitics that are or include other vowels and therefore do not participate in this alternation (e.g. the third person dative clitic (DCL) and other third person plural clitics [i], and the third person feminine SCL and all non-reflexive third person accusative clitics (ACLs) which contain [a]). First and second person DCLs and ACLs are both reflexive and non-reflexive. PRT is unspecified for gender and number. All Bolognese data in this paper are drawn from Canepari & Vitali (1995), Vitali (2009), and Lepri & Vitali (2007), or from extensive consultation with native speakers.

[2]There is a predictable gap here: The Vs in question occur only after consonants, and all 2PL tensed verb-forms in Bolognese are V-final. See also footnote 7.

(2) a. i. ˈdɛr=**um**   'to give me.DCL'   1SG
        ii. arspuŋˈdiː=m   'Answer.PL me.DCL!'
        iii. truˈvand=**um** iŋ ˈka   'finding me.ACL at home'
        iv. gwaˈrdɛː=m   'Watch.PL me.ACL!'

     b. i. diˈgaŋd=**et**   'saying to you.DCL'   2SG
        ii. ˈda=t   'Give.SG yourself.DCL … !'
        iii. kaˈtɛr=**et**   'to find/visit you.ACL'
        iv. ˈftes=**et**   'Dress.SG yourself.ACL!'

     c. i. *Non-reflexive DCL [i] never alternates this way*   3SG
        ii. purˈtɛːr=**el**   'to carry it/him.ACL'
        iii. studˈjɛ=l   'Study.PL it/him.ACL!'
        iv. REFL.ˈdɛr=**es**   'to give to oneself/himself/herself/
              themselves.DCL'
        v. REFL.ˈftaŋd=**es**   'dressing oneself/himself/herself/
              themselves.ACL'

     d. i. ˈdɛr=**es**   'to give us.DCL'   1PL
        ii. arspuŋˈdiːs   'Answer.PL us.DCL!'
        iii. kaˈtɛr=**es**   'to find/visit us.ACL'
        iv. aspˈtɛː=s   'Wait.PL for us.ACL!'

     e. i. arspuŋˈdaŋd=**uv**   'responding to you.PL.DCL'   2PL
        ii. ˈdɛː=v   'Give.PL yourselves.DCL … !'
        iii. θarˈkɛːr=**uv**   'to look-for you.PL.ACL'
        iv. liˈvɛː=v   'Get up!/lift yourselves.ACL!'

     f. i. ˈfɛːr=**eŋ** ˈduː   'to make two of them'   PRT
        ii. ʦkuˈræŋn=**eŋ** ˈdɑp   'Let's talk about it later!'
        iii. ˈdɛ=ŋ ˈduː a ˈðvaŋ   'Give.PL two to John!'

As is apparent, these clitics have the shape [C] following a vowel-final stem, but the shape [eC] following a consonant-final stem (except that we find [um] and [uv], not *[em] and *[ev], for 1SG and 2PL object clitics, respectively; we examine this in Section 2).

Though we will largely ignore preverbal clitics, (3) shows that the [C] form of most of these clitics also appears preverbally (ACLs are shown, and relevant DCLs are identical). In addition, like in many Romance varieties, the preconsonantal ACL.3MSG [al] and ACL.3FSG [la] clitics distinguish gender (3c-i), but this

distinction is leveled before a vowel (3c–ii). The corresponding scl.3sGs [al] / [la] behave identically ([al/la=ˈvad] 'he/she sees', [l=e] 'he/she is'), though the scl.3msg has additional allomorphs in preverbal clitic clusters (see Rubin & Kaplan 2022 for an analysis of preverbal clitic allomorphy). The vowel in both of these is distinct from the epenthetic vowels that we discuss below. Note that Bolognese differs importantly from Donceto (another Romance variety spoken near Bolognese in Italy), where the scl.3msg includes the epenthetic vowel of that language ([ə]) according to Cardinaletti & Repetti (2008), but the scl.3fsg includes [a], and undergoes the same pre-V / pre-C allomorphic variation as the two scl.3sGs in Bolognese. We conclude that Bolognese preverbal scl.3msg [al] is due to allomorphy, not epenthesis.

(3)	a.	i.	i=**m**=ˈtsaːmeŋ	'they call me'	1sG
		ii.	i=**m**=abˈraːθeŋ	'they hug me'	
	b.	i.	i=**t**=ˈtsaːmeŋ	'they call you.sG'	2sG
		ii.	i=**t**=abˈraːθeŋ	'they hug you.sG'	
	c.	i.	i=**al**=ˈtsaːmeŋ	'they call him'	3sG
			i=**la**=ˈtsaːmeŋ	'they call her'	
		ii.	i=**l**=abˈraːθeŋ	'they hug her/him'	
	d.	i.	i=**s**=ˈtsaːmeŋ	'they call us'	1PL
		ii.	i=**s**=abˈraːθeŋ	'they hug us'	
	e.	i.	i=**v**=ˈtsaːmeŋ	'They call you.PL'	2PL
		ii.	i=**v**=abˈraːθeŋ	'they hug you.PL'	
	f.	i.	i=**i**=ˈtsaːmeŋ	'they call them'	3PL
		ii.	i=**i**=abˈraːθeŋ	'they hug them'	
		iii.	i=**s**=ˈtsaːmeŋ	'they call each other'	
		iv.	i=**s**=abˈraːθeŋ	'they hug each other'	
	g.	i.	i=**ŋ**=ˈtsaːmeŋ ˈduː	'they call two of them'	PRT
		ii.	i=**n**=abˈraːθeŋ ˈduː	'they hug two of them'	

The choice between the [C] and [VC] forms of the enclitics in (1–2) is dictated by Bolognese's coda cluster phonotactics. Two phonotactic requirements are relevant: a prohibition on coda clusters in certain prosodic domains and a prohibition on sonorant-final coda clusters. We begin with the former.

A variety of coda clusters is attested in the language; this includes clusters ending with [s] or [t] as we see in (4). Interestingly, though, these clusters are not

permitted when the final [s] or [t] is a clitic, as (5) shows. The bolded epenthetic vowels in (5) break up the clusters in these examples, and in some examples it is the minimal difference with a correspondent in (4).

(4) [Cs] and [Ct] can occur word-finally...

    a. skɛːrs   'scarce'

    b. sɛːlt   '(a) jump'

    c. 't=sɛːlt   'you jump'

    d. a='pæŋs   'I think'

    e. a=trʲavers   'I cross'

    f. peːrs   'lost'

    g. t=iŋ'væŋt   'you invent'

    h. a=g'waːst   'I spoil'

(5) ...but epenthesis occurs when the [s] or [t] is a clitic

    a. 'skɛːr=**es**   'to dry us/ourselves'

    b. 'sɛːl=**et**   'do you salt (something)?'

    c. ami'rɛːr=**es**   'to admire us/ourselves'

    d. li'vɛːr=**es**   'to get us/ourselves up'

    e. li'vɛːr=**et**   'to get you/yourself up'

    f. tru'vɛːr=**es**   'to find us/ourselves'

    g. tru'vɛːr=**et**   'to find you/yourself'

    h. 'rɑŋf=**et**   'do you snore?'

The contrast between (4) and (5) indicates that enclitics and the verb are (immediate) constituents of distinct prosodic units that differ in whether they permit epenthesis. Cardinaletti & Repetti (2008) document similar facts for subject clitics in Donceto, but they do not provide an explicit analysis. They argue that clitics are outside the prosodic word (PWd) but within the phonological phrase (PP), and we adopt that position here.[3] To illustrate, the structure of ['sɛːl=et] 'do you salt (something)?' is given in Figure 1, setting aside the epenthetic vowel.

Such an analysis leads to the following generalization: a C + [s]/[t] coda is permitted PWd-internally, but when it straddles a PWd boundary it is banned.

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[3]For present purposes, the identities of the relevant prosodic categories are unimportant. They might be PWd and PP, or perhaps recursive PWds (Ito & Mester 2007). We adopt the former to follow Cardinaletti & Repetti's precedent.
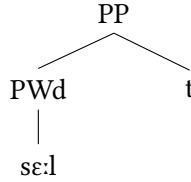
Figure 1: Prosodic structure of [ˈsɛːl=et] 'do you salt (something)?'

To account for this, we posit that *Complex outranks Contiguity(PP) but not Contiguity(PWd).[4] In Table 2, the /lt/ cluster is contained within the root and is thus PWd-internal; Contiguity(PWd) blocks epenthesis (because the PWd is a constituent of the PP, the cluster is also PP-internal, hence candidate (b)'s Contiguity(PP) violation). But in Table 3, the cluster is not wholly within the PWd (because the /t/ is a clitic) and is therefore subject only to the low-ranking Contiguity(PP); this time, *Complex compels epenthesis.[5]

Table 2: /ˈsɛːlt/ '(a) jump', from (4)

/ˈsɛːlt/	Contig(PWd)	*Complex	Contig(PP)
☞ a. ˈsɛːlt		*	
b. ˈsɛːlet	*!		*

Evidence that the epenthetic vowels in these forms are indeed epenthetic comes from two sources. First, as we have seen, these clitics do not always surface with [e] (6), appearing as just [s] or [t] when doing so does not violate *Complex. Furthermore, some object clitics, including the ones at issue here, have a [VC] allomorph that appears, for example, after the second singular subject clitic, but the vowel that appears in this allomorph is [a], not [e] (7).

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[4]Onset clusters behave somewhat differently, suggesting a distinction between *ComplexOnset and *ComplexCoda. Because we will not analyze onset clusters here, we will simply use *Complex.

[5]Contiguity(PP) and Contiguity(PWd) are in a stringent relationship (de Lacy 2004): assuming PWds are always, or at least usually, contained within PPs (whether one adopts the strict layer hypothesis (e.g. Selkirk 1984b) or something else), any configuration subject to Contiguity(PWd) is also subject to Contiguity(PP). A prediction of this analysis is therefore that whatever the ranking between these two constraints, if epenthesis or any other Contiguity-violating process is blocked in elements outside a PWd but within a PP, it will also be blocked inside a PWd. But the opposite does not hold: as in Bolognese, epenthesis may occur within a PP even if it is blocked within a PWd.

Table 3: /ˈsɛːlet/ 'Do you salt (something)?', from (5), Figure 1

/ˈsɛːl=t/	Contig(PWd)	*Complex	Contig(PP)
a. ˈsɛːlt		*!	
☞ b. ˈsɛːlet			*

(6)   a.   i=**s**=ˈsakeŋ   'they dry us'

      b.   al=**s**=aˈmiːra   'he admires us'

      c.   a=**s**=iŋdurmiŋˈtæŋ   'we fall asleep'

      d.   a=**t**=ˈtroːv   'I find you'

      e.   ˈ**t**=sɛːlt   'you jump'

      f.   ˈ**t**=rɑŋf   'you snore'

(7)   a.   t=**at**=iŋdurˈmæŋt   'you fall asleep'

      b.   t=**as**=ˈtroːv   'you find us'

Second, epenthesis in contexts not involving clitics uses the same vowel that we see in (5). For example, despite the ranking Contiguity(PWd) ≫ *Complex, PWd-internal epenthesis to break up coda clusters is attested; some examples are given in (8) (we address the cause of this epenthesis below). Each of these roots contains a root-final cluster. In the first form on a line, a suffix allows the second of those consonants to surface as an onset, avoiding a coda cluster. But in the second form on a line, in the absence of suffixes, [e] is epenthesized between the consonants. Aside from regular exceptions to be discussed in Section 2, the vowel that appears in these contexts is always [e].

(8)   a.   FSG [-a] / FPL [-∅]

         i.   ˈtɛːvla / ˈtɛː**vel**   'table' / 'tables'

        ii.   laŋˈteːrna / laŋˈteː**reŋ**   'lantern' / 'lanterns'

       iii.   ˈliːvra / ˈliː**ver**   'hare' / 'hares'

      b.   INFINITIVE [-ˈɛr] / PRES.1SG [-∅]

         i.   sfitˈlɛːr / a=ˈsfat**el**   'to slice' / 'I slice'

        ii.   urdˈnɛːr / a=ˈɑʊrd**eŋ**   'to order' / 'I order'

       iii.   lusˈtrɛːr / a=ˈlost**er**   'to polish' / 'I polish'

c. ADJ$_{FSG}$ [-a] / ADJ$_{MSG}$ [-∅]

   i. ˈdabla / ˈda**bel**   'weak.ꜰs' / 'weak.ᴍs'

   ii. ˈðɑʊvna / ˈðɑʊve**ŋ**   'young.ꜰs' / 'young.ᴍs'

   iii. ˈvɔːstra / ˈvɔːst**er**   'your.ꜰs' / 'your.ᴍs'

The evidence therefore suggests that the [e] seen in (5) is epenthetic. This conclusion ties the appearance of this vowel to other patterns of epenthesis in Bolognese, and it is simpler than an alternative that posits two [VC] allomorphs for these clitics, one with [e] that appears only word-finally and one with [a] that appears elsewhere.

More must be said about (8). We attribute the epenthesis illustrated there to phonotactic requirements. It is tempting to view that epenthesis as a manifestation of sonority sequencing principles (see Selkirk 1984a and Clements 1990 for overviews) that prohibit rising-sonority coda clusters (e.g. *[aˈsfatl], *[a=ɑʊrdŋ]) or clusters that do not have an adequate fall in sonority (*[laŋˈteːrŋ], plausibly). But it is actually unclear to what extent Bolognese obeys sonority sequencing constraints. A representative sample of the language's coda clusters is given in Table 4; see also (4). Most clusters conform to sonority sequencing expectations, but not all do (e.g. [rbz], [dg]); onset clusters are even more dramatic in their disregard for sonority sequencing ([zbdɛl] 'hospital', [ˈftleŋna] 'slice', [ˈtskŋɔser] 'to disavow', [vdand] 'seeing'). One clear generalization, though, is that sonorant-final coda clusters are unattested, and we therefore adopt a constraint against such clusters, *C[+sᴏɴ]]$_\sigma$, and this constraint drives epenthesis in (8).

Table 4: Licit obstruent coda clusters

rbz	for**bz**	'scissors'	rð	zgɛː**rð**	'wool comb'
rb	tɑʊ**rb**	'cloudy'	dg	ˈapɛː**dg**	'I walk'
rp	auˈzuː**rp**	'I usurp'	mb	strapˈjɑ**mb**	'overhang'
rd	sɑʊ**rd**	'deaf'	mg	ˈstɑ**mg**	'stomach'
rdg	poː**rdg**	'portico'	mt	ˈgɑ**mt**	'elbow'
rt	pɛː**rt**	'part'	ŋdg	pɑ**ŋdg**	'mouse'
rts	kwɛː**rts**	'lid'	ŋf	gre**ŋf**	'claw'
rθ	pɔː**rθ**	'pig'	ŋp	kɑ**ŋp**	'field'

*C[+sᴏɴ]]$_\sigma$ outranks Cᴏɴᴛɪɢ(PWd), as illustrated in Table 5.

To summarize, we have identified two considerations that drive epenthesis in Bolognese. The first is *Cᴏᴍᴘʟᴇx, whose effect is visible outside the PWd, trigger-

Table 5: ˈliːver 'hares', from (8)

/ˈliːvr-∅/	*C[+son]]$_\sigma$	Contig(PWd)	*Complex	Contig(PP)
a. ˈliːvr	*!		*	
☞ b. ˈliːver		*		*

ing epenthesis in final clusters involving consonantal enclitics. Within the PWd, epenthesis eradicates sonorant-final coda clusters.

So far we have dealt only with examples in which the epenthetic vowel is [e], but in certain situations [u] appears instead. We turn now to those contexts.

2 Epenthetic [u]

As we have said, the primary epenthetic vowel in Bolognese is [e], which surfaces in a variety of contexts. But when followed by a labial consonant, the epenthetic vowel is instead [u]. For example, [m] – being a sonorant – unsurprisingly triggers epenthesis in coda clusters, just like the other sonorants shown in (8). But the epenthetic vowel that precedes [m] is [u]:

(9)   a. FSG [-a] / FPL [-∅]

        i. ˈaːnma / ˈaːn**um**   'soul' / 'souls'

        ii. ˈfaʊrma / ˈfaʊr**um**   'form' / 'forms'

        iii. baˈtaɪzma / baˈtaɪz**um**   'baptism' / 'baptisms'

    b. INFINITIVE [-ˈɛr] / PRES.1SG [-∅]

        i. kalˈmɛːr / a˭ˈkɛːl**um**   'to calm' / 'I calm'

        ii. lagarˈmɛːr / a˭ˈlɛːgr**um**   'to weep' / 'I weep'

        iii. farˈmɛːr / a˭ˈfaɪr**um**   'to stop' / 'I stop'

    c. ADJ$_{FSG}$ [-a] / ADJ$_{MSG}$ [-∅]

        i. ˈuːltma / ˈuːlt**um**   'last.FS' / 'last.MS'

        ii. ˈsɛːtma / ˈsɛːt**um**   'seventh.FS' / 'seventh.MS'

We attribute the appearance of [u] in (9) to Agree(lab)-rime (10) (see, e.g., Lombardi 1999 for discussion of Agree constraints). Under the assumption that the distinction between round and unround vowels is captured formally by the feature [labial] (as opposed to [round]; Clements 1991), this constraint can compel epenthesis of a round vowel like [u] when the following coda consonant is

[+labial]. Agree(lab)-rime holds only for segments appearing in the same rime; evidence for this restriction on the constraint's effect is presented below.

(10)   Agree(lab)-rime: within a rime, adjacent segments must match for [labial].

Epenthesis of [u] is an example of The Emergence of the Unmarked (McCarthy & Prince 1994). Agree(lab)-rime is outranked by Ident(labial), which prevents underlying vowels from becoming round to match a following labial coda. As (11) shows, vowel quality before [m] is not generally restricted. But epenthetic vowels have no input correspondent, and Agree(lab)-rime can influence their realization.

(11)   a. θim'zɛːra   'bedbug infestation'
        b. ʥem'leŋ   'gem.DIM'
        c. prem   'first'
        d. krizaŋ'teːm   'chrysanthemum'
        e. 'ɑmbra   'shadow'
        f. e'kɔnom   'treasurer'
        g. 'omd   'humid'

The effect of Agree(lab)-rime is illustrated in Table 6. [6] *C[+son]]$_\sigma$ compels epenthesis, and Agree(lab)-rime selects the candidate with an epenthetic [u].

Table 6: 'aːn**um** 'souls', from (9)

/'aːnm-∅/	*C[+son]]$_\sigma$	Ident(lab)	Agr(lab)-rime	Contig(PWd)	*Complex	Contig (PP)	*[V, +lab]	*[V, +hi]
a. 'aːnm	*!				*			
b. 'aːnem			*!	*		*		
☞ c. 'aːnum				*		*	*	*

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[6]To keep the tableau simple, *Complex and the Contiguity constraints are omitted from most subsequent tableaux in this section. As Table 6 shows, they are ranked too low to affect the outcome in the kinds of cases presently under consideration.

Epenthesis of [e] when the relevant coda consonant is not [+labial] has two possible explanations. Either Agree(lab)-rime requires the epenthetic vowel to match the coda consonant's [−labial] specification, or Agree(lab)-rime is ambivalent in the face of a [−labial] coda consonant and the constraints *[V, +lab] and *[V, +hi] favor [e]. For purposes of illustration, we adopt the former approach.

Curiously, labial consonants trigger the appearance of the high vowel [u], not a mid vowel [o] or [ø], either of which would satisfy *[V, +hi] and be more similar to the default [e]. To account for this we adopt *RoLo and *RoFro (Archangeli & Pulleyblank 1994, Kaun 1995, 2004), which prohibit round non-high vowels and round front vowels, respectively. Their effect is visible in Table 7: candidate (a) is eliminated by *C[+son]]$_\sigma$, and of the remaining candidates, only candidate (f) satisfies Agree(lab)-rime, *RoLo, and *RoFro.

Table 7: ˈaːn**um** 'souls', from (9)

/ˈaːnm-∅/	*C[+son]]$_\sigma$	Ident(lab)	Agr(lab)-rime	*RoLo	*RoFro	*[V, +lab]	*[V, +hi]
a. ˈaːnm	*!						
b. ˈaːnem			*!				
c. ˈaːnom				*!		*	
d. ˈaːnøm				*!	*!	*	
e. ˈaːnym					*!	*	*
☞ f. ˈaːnum						*	*

To our knowledge, the only other labial consonant that triggers a preceding epenthetic vowel is [v] (cf. forms with coda-cluster-final [b, p, f] in Table 4). As our analysis predicts, that epenthetic vowel is [u]:

(12) a. FSG [-a] / FPL [-∅]
      i. ˈseːrva / ˈseː**ruv**   'servant' / 'servants'
      ii. ˈkaˈteːrva / kˈateː**ruv**   'multitude' / 'multitudes'
  b. INFINITIVE [-ˈɛr] / PRES.1SG [-∅]
      i. kurˈvɛːr / a=ˈkuː**ruv**   'to bend' / 'I bend'
      ii. userˈvɛːr / t=uˈseː**ruv**   'to observe' / 'I observe'

    c. N_{FSG} [-a] / N_{MSG} [-∅]

        i. ˈvadva /ˈvad**uv**   'widow' / 'widower'

    d. N_{MSG}.DIM [-ˈeŋ] / N_{MSG} [-∅]

        i. narˈveŋ /ˈne:r**uv**   'little nerve' / 'nerve'

As with [m], AGREE(lab)-rime favors [u] to match the [+labial] [v]. What is most notable about these examples, however, is that [v] triggers epenthesis in the first place. As shown in (4) and Table 4, epenthesis does not usually occur when a cluster ends with an obstruent. We argue in Section 3 that [v] is in fact a sonorant in Bolognese, so the examples in (12) simply further illustrate epenthesis in sonorant-final clusters. Before turning to that argument, however, some loose ends need attention.

As discussed above, IDENT(labial) prevents AGREE(lab)-rime from causing non-epenthetic vowels to change. This is illustrated in Table 8 with the form [iŋˈkɛ:v] 'groove.' The underlying /ɛ:/ surfaces faithfully despite the following [v].

Table 8: iŋˈkɛ:v 'groove'

/iŋˈkɛ:v/	*C[+SON]]$_\sigma$	IDENT(lab)	AGR(lab)-rime	*RoLo	*RoFro	*[V, +rnd]	*[V, +hi]
☞ a. iŋˈkɛ:v			*				*
b. iŋˈku:v		*!				*	**

Furthermore, examples such as [ˈli:v=**et**] 'Get up!' (with an epenthetic [e]) show that labial consonants trigger rounding only on preceding epenthetic vowels, not following ones. The difference, we suggest, is that when an epenthetic vowel precedes a labial (or any) consonant, that consonant is invariably a coda – hence AGREE(lab)-rime's requirement that only segments in the same rime must match for labiality.

The evaluation of [ˈli:v=**et**] is shown in Table 9. *COMPLEX compels epenthesis here because the form contains an enclitic, and this time AGREE(lab)-rime favors an unround vowel, eliminating candidate (c); recall that if AGREE(lab)-rime is interpreted to be ambivalent in this case, lower constraints favor [e], too.

Finally, the data in (13) show the convergence of the two environments for epenthesis that we have focused on here. These examples show epenthesis in

Table 9: ˈliːv=**et** 'Get up!'

/ˈliːv=t/	*C[+son]]$_\sigma$	Ident(lab)	Agr(lab)-rime	*RoLo	*RoFro	*[V, +rnd]	*[V, +hi]
a. ˈliːv=t	*!						*
☞ b. ˈliːv=et							*
c. ˈliːv=ut			*!			*	**

word-final clusters involving clitics, driven by *Complex. Here, though, the clitics are sonorants and are therefore subject to *C[+son]]$_\sigma$. Epenthesis occurs exactly as expected: [u] appears before [m] and [v], and [e] appears elsewhere. A representative tableau is shown in Table 10.

(13) a. ˈliːv=**el**   'Is he lifting (something) up?' / 'lift him up!'
      b. ˈliːv=**eŋ**   'lift some up!'
      c. ˈliːv=**um**   'lift me up!'
      d. liˈvɛːr=**uv**   'to lift you up'

Table 10: ˈliːv=**el** 'Is he lifting (something) up?' / 'lift him up!'

/ˈliːv=l/	*C[+son]]$_\sigma$	Contig(PWd)	*Complex	Contig(PP)
a. ˈliːvl	*!		*	
☞ b. ˈliːvel				*

3 The status of [v]

Padgett (2002) argues that in Russian and possibly other languages, the segment transcribed as [v] is more properly treated as a sonorant. Bolognese appears to belong to this group of languages. The contrast between, on the one hand, (12), with [v]-final clusters, and (8) and (9), with sonorant-final clusters, and, on the other hand, (4)/Table 4, with clusters with other obstruents in final position (including [b, p, f]), is just one piece of evidence for this position.

In addition, Bolognese [v] sometimes alternates with [w], as in (14).

(14) a. ˈak**w**a / ˈaku**v**   'water' / 'waters'

      b. iŋsiŋˈ**w**ɛr / t=iŋˈsi:nu**v**   'to insinuate' / 'you insinuate'

      c. koŋˈti:ɡ**w**a / koŋˈti:ɡu**v**   'contiguous.ꜰꜱ' / 'contiguous.ᴍꜱ'

Moreover, Canepari & Vitali (1995: 148) write:

> /v/ often vanishes: [farˈa(v)ɑŋna] 'guinea fowl', [(v)ɲ o] 'come (past part.)'
> (or also [farˈavɑŋna]); occasionally it becomes [w]: [asˈwad] 'si vede/one
> sees'.

Some sources (including Canepari & Vitali in the excerpt just provided) tran-
scribe this sound as [ʋ], indicating that some listeners hear the sound as an ap-
proximant, not a fricative.[7]

4 Discussion and conclusion

Like other Romance languages, Bolognese shows epenthesis that is sensitive to
morphological and prosodic structure. Our account of this extends the analysis
of Cardinaletti & Repetti (2008) to account for a collection of facts that are pe-
culiar to Bolognese, such as variation in the quality of the epenthetic vowel, the
avoidance of sonorant-final coda clusters, and [v]'s patterning with sonorants.

Chief among our claims is that the alternation between [C] and [VC] seen in
Bolognese's enclitics involves epenthesis rather than deletion or suppletion. This
position has two major benefits. First, it connects clitic allomorphy to broader
epenthetic processes in the language. Second, these clitics show extensive allo-
morphy (Rubin & Kaplan 2022), and treating some of this allomorphy as epen-
thesis reduces the number of allomorphs in the lexicon and/or the number of
clitic-specific processes that must be posited.

The analysis presented here represents just a first attempt to account for the
interaction between vowel epenthesis and Bolognese's clitics. Our focus has been
on word-final clusters, but proclitics are also subject to epenthesis in familiar
ways: [e] is epenthesized, except that [u] appears when sharing a rime with [m]
or [v]:

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[7]Historically, Bolognese [∅/v/ʋ/w] comes from Latin [w]; perhaps it has not (yet?) fully transi-
tioned from a sonorant to an obstruent. Perhaps relatedly, across all conjugations, in the im-
perfect and conditional, the stress is penultimate, and not final as with all other 2ᴘʟ verb-forms.
With those two forms, in the interrogative, no enclitic 2ᴘʟ ꜱᴄʟ [v] is present, e.g. [maɲaˈresi=∅]
'Would you.ᴘʟ eat?' With all other 2ᴘʟ verb-forms, with final stress, an enclitic [v] does ap-
pear, whether ꜱᴄʟ, ᴅᴄʟ, or ᴀᴄʟ. Adjacency to primary stress plays a clear role, perhaps both
diachronically and synchronically.

(15) a. al=ve=ˈdɛ:va   'He was waking you up.'

     b. al=me=ˈʦftes   'He's undressing me.'

     c. l=um=ˈda   'he gives me'

     d. i=se=ˈfte:veŋ   'they were getting dressed'

     e. a=se=ˈfte:veŋ   'we were getting dressed'

Notice that [e], not [u], appears before [f] in the final two examples in (15). Several explanations are available: perhaps [f] is syllabified as an onset here ([ft] clusters are attested in Bolognese); perhaps the AGREE constraint used above might be further restricted to *sonorants* that share a rime; or perhaps [e] is not epenthetic here, but rather part of the underlying representation of the reflexive clitic [se] and other relevant clitics. Furthermore, alongside the similarities between proclitics and enclitics are substantive differences. In particular Rubin & Kaplan (2022) argue that proclitics exhibit rather extensive allomorphy that enclitics do not. One example, of many similar, concerns the 3MSG subject and direct object proclitics (as noted in the discussion above (3)), which regularly exhibit a form [al] that never occurs as an enclitic ([t=al=ˈvad]/*[t=el=ˈvad] 'you see him' vs. [ˈvadr=el]/*[ˈvadr=al] 'to see him') even though as an enclitic [al] would satisfy *C[+SON]]$_\sigma$ just as well as [e] epenthesis does. Another issue arises when both the subject and object clitics are 3MS and adjacent, which can only occur preverbally. The [al] allomorph is not permitted here for both, and epenthesis arises, though after the object clitic, rather than before it ([al=le=ˈvad]/*[al=al=ˈvad]/*[al=el=ˈvad] 'he sees him').

Our supposition is that at least some of these differences arise from differences in combinatorial possibilities, as with the consecutive 3MS clitics, which occur only preverbally. As another example, the 3MS.NOM proclitic appears as [l] before vowels; when 3MS.NOM is an enclitic it is always verb-final and therefore never prevocalic in isolation. But in context, when the following word begins with a vowel, [l] appears.

In sum, the analysis developed here supplies a foundation on which a broader treatment of clitic alternations in Bolognese, and indeed perhaps those found in other languages, can be built.

Acknowledgements

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