

Nasalization in Northern In Italy: Syllabic Constraints and Strength Scales as Developmental Parameters¹

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The nasals did not begin to claim their fair share of linguistic interest until the 1970's.² And even then only a small portion of that attention was directed along the diachronic axis. Long recognized the stabiest of consonants, the nasals were perhaps in consequence the least apt to arouse historical curiosity. (The sibilants are like quicksilver by comparison [especially from a Romance perspective], and thus have come to boast a far vaster literature). Still less have they been examined from the vantage of phonologic strength scales, and never so within the framework of metrical or syllabic phonology. This paper will integrate both these latter approaches in seeking to account for several erstwhile anomalies in the northern Italian treatment of Latin nasals.

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² Ohala's *Nasography* experiments (1971, 1972), Hyman's work on the Kwa group of Niger-Congo (1972), and Chen's astute Chinese dialect comparisons (1973, 1975) form a prelude to other California linguists' contributions, whose *Nasaldef* (Ferguson et al. 1975) stands with Anderson (1976) as a landmark of rekindled interest in the topic. (Ohala 1975 provides a rich list of references; cf. further Rochet 1976.) Thereafter, at Padua, Farnetani produced two conspicuous syntheses (1979a, 1979b) in quick succession.

TECHNICAL NOTE: a subscript titulus (*tilde*) indicates light nasalization from a phonetic vantage, a vertical strike | indicates syllabic juncture, whereas a colon shows the foregoing segment is long. A smaller vertical strike, when subscript, stands for a syllabic nasal (*ŋ*, *ŋ̣*, etc.); subscript *o* indicates voicelessness. A limited number of liberties have been taken with the various sources cited to make them intelligible to a contemporary reader; e.g., *jod* is here *j* (not *y*), although *š* of the originals has not been converted to *y*; the palatal nasal is *ɲ* (save where an early graph has peculiar interest or figures as part of a standard orthography, e.g., *ggɲ* or *ngɲ* for [ɲ|ɲ]) and the velar is *ŋ*.

1. Extrinsic versus intrinsic determinants of nasal change.

Drawing together laboratory research and descriptive studies of nasal distribution, supplemented by such historical data as circumstances grant, one can smoothly enough infer the prime determinants of Romance nasal evolution. These are separable into two main facies of universal conditions, which frequently, but need not necessarily, interact. On the one hand, I would distinguish extrinsic factors, i.e., contextual determinants influencing the nasals, and, on the other, distinctions rooted in the intrinsic nature of the various nasal phones as conditioned by their independent production and perception. These latter allow one to deduce a scale of relative strength among nasals, but the former, too, may be ranked as "environments of increasing jeopardy", according to the potential risks or hazards they pose for nasal stability. Both sorts require integration with an accentuo-syllabic theory of canonic "weight" along the timing axis in order to account for nasal developments in the Romance dialects.

2. Extrinsic determinants.

Coming at the problem of nasal change from this latter, negative tack, I would like to review the contexts which stand in line to erode differentially the various features of the nasal class and its specific positional members. If each prime nasal be optimally marked for nasal resonance, for sonority, and for closure in specific loci, the (neuromotor) tendency to anticipate (or to spread forward in time) opposed features stands to make certain contexts more hazardous than others.

2.1. Erosion of sonority.

For ex., the sonority of a nasal onset is reinforced by a following vowel nucleus, whereas that of a nasal coda may be attenuated by an upcoming suspension of sonority;³ this latter process may occur consistently (within a lexeme or fixed syntagm) or variably in word-final position in languages with word-initial sonorants (vowels and voiced consonants). Consider the following pair of Romagnol dialects, wherein the data from Rimini offer a likely prelude to those from Imola:

³ Historically, the contrasts of weakened coda nasals with unaltered onsets are dramatic in many languages. For ex., in Tamil a final nasal coda nasalizes the foregoing vowel, e.g., *marām* 'tree' [marā], "but when the interrogative clitic is added to form *marām-a*: 'a tree?', nasalization is blocked" (Steever 1987: 732-3). Recall that implosive position (especially when prepausal) is not uniformly weak; rather it is weak (or leniting) for a sonorant just as it tends to be strong for a surd. Cf. for the latter, Shannon's extension of the "motor-control optimization principle" (Lindblom) to word-final contexts ("The Rise and Fall of Final Devoicing", Pavia ICHL, 1985).

	Rimini	Imola
*blank- 'white'	bj:ɹk	bj:ɹk
CAMPU 'field'	kɛ:ɹp	kɛ:p
PLANTA 'plant (tree)'	pjɛ:ɹtd	pjɛ:td
TANTU 'so much'	tɛ:ɹt	tɛ:t
<i>camba</i> 'leg'	gɑ:mbɔ	gɛ:mbɔ
DĒMANDAT 'he asks'	dma:ndɔ	dmg:ndɔ
*glan(d)u/a 'acorn'	g̃ɑ:ndɔ	g̃ɛ:ndɔ
SANGUE 'blood'	sa:ŋg ^w	sɛ:ŋg ^w 4

Such differential evolution has come full term in much of Bergamasco (to which I will return shortly), e.g., CAMPU 'field' > *kəp* [ka:p] versus CAMBA 'ham, hock' > *gamba* 'leg', MONTE 'mountain' > *mut* [mu:t] versus MUNDU 'world' > *mut*, UENTU 'wind' > *vet* [ve:t] versus UENDIT 'he sells' > *vent*, CONCHA 'shell' > *koka* 'chessnut, hazelnut' versus SANGUE(N) 'blood' >

⁴ Data from Schür (1919: 92-3, 109-17), but here with subscript titulus (*tilde*) for faint or weak nasalization. Nasalization is still fainter for the Late Latin non-low vowels (mid types merge as "schwach nasal" *ɛ* and *ɔ*), with the voiced/voiceless feature of the oral occlusion determining the stage of nasal-Schür 1919: 122-3) and is absent altogether for those historically [+high] (cf. semi-learned *ɛ:ŋb* 'rattan' < India), e.g.,

CONTENTU 'satisfied'	Rimini	Imola
DENTE 'tooth'	kɹŋtɛ:ɹt	kɹŋtɛt
GENTE 'folk'	dɛ:ɹt	dɛt
VENTU 'wind'	zɛ:ɹt	zɛt
TEMPU 'time'	vɛ:ɹt	vɛt
	tɛ:ɹp	tɛp
VERSUS:		
SENT(U)ENDO 'hearing'	sɹntɛn ^t	saintɛn ^t
VENDIT 'he sells'	ven ^t	ven ^t
and		
COMP(U)TU 'account, bill'	kɔ:ɹt	kɔt
CONCHA 'shell, bowl'	kɔ:ɹk	kɔk
MONTE 'mountain'	mɔ:ɹt	mɔt
PONTE 'bridge'	pɔ:ɹt	pɔt
PROMPTU 'readied'	pɹɔ:ɹt	pɹɔt
VERSUS:		
FUNDU 'base, bottom'	fɹn ^t	fɹn ^t
COLUMBU 'dove'	kɹlɹm ^p	kɹlɹm ^p
LONGU 'long'	lɹŋ ^t	lɹŋ ^t
LUMBU 'loin'	lɹm ^p	lɹm ^p
UNGULA 'fingernail'	ɹŋg ⁱ (pl.r.)	ɹŋg ⁱ (pl.r. ɹn ^t).

Note that word-final devoicing subsequent to apocope has not (yet) fed the process of desonorizing the homorganic nasal. (The same distinction of relative chronology had an analogous effect in Old Norse. Compare the preterite and imperative with the pres. ind., e.g., *band > *bant > *batt*, *bind > *bint > *bitt*, versus *bindu 'I tie' > *bind*, *sprang > *sprank > *sprakk, *spring > *sprink > *sprick*, versus *springu 'I break' > *spring* [Noreen 1884: 72, 77, 102]).

bank. Documented from the 14th-15th C. in the Bergamask grammar fragments published by Sabbadini (1904-05: 286) (e.g., §26 *sceptla* = simplex, §36 *provetta* = provincia) and in the 16th-c. poet Giovanni Bressano (ap. Lorek 1893: 30, 32, e.g., *cap* 'campo', *ropili* 'rompi', *tep* 'tempo'), it was recognized as a uniform change by Tempini (1908: 26) in the Val Camonica,⁵ and Battisti (1913: 32-3) for the Valvestino.⁶

2.2. Erosion of closure.

Within the class of caudal nasals, the optimal occlusive aspect may similarly be attenuated by occurrence before a fricative. Combining all of the foregoing, it is easy to see why a nasal coda before a voiceless fricative is more prone to erosion than its congener with contextual sonority reinforced. Perhaps Latin affords the most familiar example,⁷ documenting in its archaic phase numerous *composita* where a long vowel corresponds with a short vowel and nasal coda, e.g., *cēsōr* for *CEŅSŌR*, *cofeci* = *CONFĒCĪ*, *cōsol* = *CONSUL* (Lindsay 1897: 315),⁸ which run up till the 4th-3rd C.s B.C., when a conservative "reazione antisabina"⁹ set in, stigmatizing them as plebeian and rustic¹⁰ and thereby prompting a restoration of *n*: (*α*) initially wherever its absence could be inferred synchronically, e.g., *centiens* > *CENTIĒS* → *CENTIĒNS*, *consiāre* > *CŌSTĀRE* → *CŌNSTĀRE*, *deciens* → *DECĪĒS*

⁵ Where a caudal nasal "tace anche complicato, se gli tien dietro una esplosiva sorda," e.g., *biaca* 'bianca', *branca* 'branca', *homcha* 'semenza', *kap* 'campo', *kerédha* 'sicurtà', *krupa* 'compria', *peba* 'pensa', *put* 'ponte', *puta* 'punta', *tat* 'tanto', *tep* 'tempo', *vet* 'vento', *zet* 'gente', versus *font* 'fondo', *gianda* 'ghianca', *bangiot* 'singhiozzo', *hindik* 'sindaco', *manenda*, *mazenik* 'maggengo' (sc. fieno), *ombra*, *onda*, *picom* 'piombo', *skāndol*, etc. The intermediary phase is suggested by various Romanisch dialects which contrast weakening to velar *ŋ* before voiceless stops with preservation before voiced, e.g., Bravuogn [= Be-gün on Albulia] *deŋt* 'tooth', *šapf* 'I sing', *veŋt* 'wind' versus *grōt* 'big', *vent* 'I sell' (for a synchronic analysis, cf. Kamprath 1987: 150, 160-1).

⁶ Who noted for *m* "...Entnasalierung, nicht in Auslaut aber vor stimmloser Tenues," thus *CAMPU* > *kāp*, *SEMPEP* > *sēpar*, *TEMPU* > *tēp*, but *COLUMBĪ* 'doves' > *kolombā* 'popcorn', *CU(M)BITU* > *gōmbet* 'elbow', the same as the contrast between *CONCHA* 'shell' > *kōkō* 'hazelnut', *DENTE* > *dēt*, *UENTU* > *vet*, and *FUNGU* > *fōŋk*, *MUNDU* > *mont* 'clean', *SANGUE(N)* > *sangu*, *UENDIT* > *vent* 'he sells'.

⁷ But the tendency was no less present in Greek, Hindi, Lithuanian, Osco-Umbrian, Delaware [= Lenape]—for the latter, cf. Vogelín (1946: 134) (and de Chene 1979: 98), e.g., *čūšās* 'bird' but *cu:čūšat* 'litttle bird'. In early Greek, divergent realizations of **-oms* were occasioned phonosyntactically, according as to whether the *-s* formed part of the coda or, before a word-initial vowel, was resyllabified as an onset thereby leaving *n* less exposed to erosion; e.g., Cretan *ρωγ ελευπερος* versus *ρωγ xadepawz*. Thereafter "les divers dialectes ont généralisé l'une des deux formes. L'ionien-attique ne connaît plus que *-owz*... issue de *-owz*... l'arcadien, le thessalien et une partie du dorien ont généralisé *-oz*" —Meillet & Vendryes (1927: 132).

⁸ Cf. likewise such reconstructions as **egmons* > *equos* 'horses', **hortons* > *hortōs* 'gardens' (Leumann 1977: 112, 145).

⁹ Devoto's term (1940: 97-107) which might be stripped of its specific ethnic implication and made more sociolinguistic and class-oriented.

¹⁰ Although Velius Longus (ap. Keil VII, 78) reports that Cicero on occasion forsook *-ns* as a peccant affectation and "libenter dicebat *foresia*, *Megalesia*, *hortesia*" (for Classical *-ENSIA*)—Lindsay (1894: 69).

→ *DECĪĒNS*, *dens* > *DĒS* → *DĒNS*, *insānus* > *ĪSĀNUS* → *ĪNSĀNUS*, **nowiens* > *NOUĪĒS* → *NOUIĒNS*,¹¹ and (β) subsequently, as a hypercorrection, well beyond any etymological bounds, e.g., the northern Italian *Appendix Probi* (Bobbio, 8th C.?), besides recommending *ANSA non asa* (76) and *MENSA non mesa* (152), reproves *infimenatus* for *EFFEMINĀTUS* (125), *formunsus* for *FORMŌSUS* (75), *Herculens* for *HERCULĒS* (19), *occansio* for *occĀsĪŌ* (123),¹² Germanists are familiar with this differential development from old Anglo-Frisian, old Norse, and old Netherlandish, not to mention modern Swiss German.¹³ Compare such cognates as:

Gothic	Old High German	Old English
<i>anþar</i>	<i>andar</i>	<i>ōþer</i> 'other'
<i>fimf</i>	<i>fimf</i>	<i>fif</i> 'five'
<i>gansu</i>	<i>gans</i>	<i>gōs</i> 'goose'
<i>mumþs</i>	<i>mund</i>	<i>mūþ</i> 'mouth'
<i>tunþu</i>	<i>zand</i>	<i>tōþ</i> 'tooth'
<i>uns</i>	<i>uns</i>	<i>ūs</i> 'us'

¹¹ In this conflation of variants, the long vowel, resulting from the nasal's earlier evanescence, was maintained. Cicero (*Orat.* 159) mentions this peculiarity for the prefixes *CUM-* and *IN-* before *s* and *f*, e.g., *CŌNSŪĒIT*, *CŌNFĒCĪT*, *ĪNFĒLĪX*, *ĪNSĀNUS* (Leumann 1977: 112, with the sociolinguistic motive of the process clarified by Allen 1965: 29, cf. also Bichakjan 1986: 4). The subsequent absorption of *s* in *TRĀDŪCŌ*, *TRĀLOQUOR*, *TRĀUEHŌ*, etc. (from **trādūcō* < **trādūcō*, etc.) may have rendered such compounds sufficiently opaque as to thwart reanalysis; thus they survived beside *TRANS-*. For the original nasalization, recall that such prefixes were not unstressed in archaic Latin. Nominatives of the type *DĒNS*, *GĒNS*, *GLĀNS* were brought back into line with the underlying root. Phonosyntactic or Sandhi variants would have admitted of the easiest readjustment, but still the 2nd-c. grammarian Flavius Caper (ap. Keil VII, 106, 17) warned "in *Siciliam* dicendum, non *Siciliam*... numquam sine *n* pronuntiatu" —cit. ap. Lindsay (1894: 121).

¹² For earlier examples, e.g., *HERENS* for *HERĒS*, *PARĪENS* for *PARĪĒS*, *SPECĪENS* for *SPECĪĒS*, *TURRĒNS* for *TURRĪĒS*, cf. Lindsay (1894: 69), Niedermann (1953: 155-6), Leumann (1977: 145-6), Kiss (1972: 31). And *formonsus*, *occansio*, *thensaurus*, *Morse* 'Moses' are present in the *Itala Bible* (or *Vetus Latina*, 2nd-3rd C.s)—Rönsch (1875: 458s). Regarding the loss of occlusion before *f*, Josselyn (1900) noted that his Emilian and Umbrian informants for Italian failed to make any closure until *f* for 'infante' (= [fante]) and Panconcelli-Calzia (1904: 87) observed this to be a more general trend: "Observez le tracé du mot *tonfo*... Suivez la ligne de la bouche, vous trouverez des vibrations [orales] jusqu'à *f*. Pas de fermeture, pas d'*nf* La ligne du nez révèle une nasalité uniforme. L'*n* a été absorbé par l'*o*. On peut transcrire le mot [fōfo]." John Trumper (p.c.) alerts that the same want of nasal closure before *sf*, no less than *f*, characterizes Veneto speakers. For the differential development of fricatives versus stops, note how in conservative north-central Sardinian, against a background of homorganic nasal + voiceless stop preservation (*nap*, *ni*, *ŋk*) versus nasal loss preceding voiceless fricatives (*INFER(N)U* > *iffēru*, *INFĀRE* > *uffāre*, **in* + *furnāre* > *iffurnāre*, *CŌNSOLĀRE* > *cosolare*, *Sp. decanso* 'rest' > *diskāssu*, etc.), it is only in Nuorese, where **nis* (< *nj*/c) became and remained a fricative (*β*), that *n* was similarly eroded, e.g., *ABSINTHU* artemisia, wormwood' > *a(β)βē(β)βu*, *LANGEA* 'lance' > *lā(β)βu* 'wound' (semantically deverbal from *landare* 'to wound with lance'—*DES* 2, 11), *LAURENTIU* (hagionym) > *Larē(β)βu*, *LINTEOLU* 'linen sheet' > *le(β)βē(β)βu*, **zinzala* 'mosquito' > *β(β)βala*, versus general Logudorese *attēntu*, *Larēntu*, *lentōlu*, *līntula* (data from Wagner 1941 = Paulis 1984: 185, 197, 296-7, 300, and cf. Contini 1987: 138-9 & maps 16-7, 40).

¹³ For the latter, cf. *feister* 'Finster', *bāf* 'Hant', *sāf* 'Sanft', *triche* 'trinken', *tāchel* 'dunkel', *zeise* 'zinsen' (Behaghel 1916: 235). For further ex.s and other locales, cf. Stütterlin (1924: 278).

The frequent concomitant of vowel lengthening appears to be the phonologization of a widely-observed phonetic tendency: i.e., the forward spreading of nasality results in the vowel nucleus' assumption of the timing slot of the former nasal consonant (VN > VV). (Recall that regardless of their historical sources, nasal vowels are ipso facto longer than their oral counterparts). Turning to the length of the nasals themselves, numerous pioneers had pointed out that they were longer before a sonorant than before a surd, e.g., Sweet (1877—for such English pairs as *spend*: *spent* [no. 99]),¹⁴ Passy for *Les sons du français* (1887: pl. 124). Within Italo-Romance, where the same tendency obtains, from a compensatory, syllabic vantage, it is axiomatic that the shorter the nasal, the longer the vowel. Thus Fava and Magno Caldognetto (1976: 57-8) ascertained that vowels before N + C[-voice] were as long as if in an open syllable, whereas N in the environment N + C[+voice] constituted a genuine coda, i.e., vowels were there as short as in a closed syllable. E.g.,

NC[-voice]	NC[+voice]
<i>campi</i> 112.8/45.1 ms.	<i>gambe</i> 97.7/142.8 ms.
<i>tempo</i> 120.3/75.1 ms.	<i>fondo</i> 75.1/150.4 ms.
<i>cento</i> 112.8/52.6 ms.	<i>lungo</i> 45.1/75.1 ms.

Uguzzoni (1975: 60-1) had earlier established that, from an historical perspective, Emilian treats mid-vowels followed by NC[-voice] as if in an open syllable, whereas those before NC[+voice] evolve as if in a closed syllable; for ex.,

nel dialetto di Benedetto [Pavullo nel Frignano (MO)] gli sviluppi divergenti delle vocali seguite da nessi nasali eterofoni [i.e., -voice] rispetto a quelle seguite da nessi nasali omofoni [i.e., +voice] si possono vedere chiaramente in questi esempi: (*i*) *siŋk* 'cinque' / *šëŋka* 'cinghia'; (*u*) *ün*t 'unto' / *öŋz* '(egli) unge'; (*e*, *è*) *dënter* 'dentro' / *vänd* '(egli) vende', *tëmp* 'tempo' / *setämber* 'settembre'; (*o*, *ò*) *prünt* 'pronto' / *önda* 'onda', *kürjka* 'conca' / *löŋg* 'lungo'; (*a*) *tënt* 'tanto' / *gränd* 'grande' (also cf. earlier 1971: 124, and, for more data from nearby dialects, 1979: 6-9).

In Romagnol likewise this distinction must have existed; for ex., in Bolognese, where however it is currently being effaced as the vowel system is compacted through mergers:¹⁵

¹⁴ In pairs such as *meant*: *meant*, *joins*: *joint*, *pens*: *pence*, Mayer (1903) determined the average duration of N before C[+voice] to be 194 msec. versus 122 msec. before C[-voice]—cit. ap. Jespersen (1948: 449). For rapid, informal English, Ferguson (1975: 183) transcribed *camp* as [kæp] versus *hand* as [hænd]. Note further that the anticipated suspension of sonority which shortens a vowel preceding a voiceless coda operates in English across a nasal + obstr. cluster, e.g., the same opposition observable in *add* [æ:d] : *at* [æt], *bad* [bæ:d] : *bat* [bæt] recurs in *and*: *ant*, *band*: *bent*, *send*: *sent*, suggesting an effective devoicing and weakening of the nasal in rapid speech, i.e., [æ:] t, [b̥t] versus [æ:nd, bænd].

¹⁵ Thus ap. Mainoldi (1967: xiii & q.vv.), while for Cocco (1970: 9n.9, 13n.16), *ai* is a mere socio-generational variant of *a*. This trend may have been present as far west as S.E. Piedmont, if Priocca (CN) *çänt* 'cento', *pučäinta* 'polenta', *surtimäint* 'proposta' [lit. 'sortimento'], *täimp*

V [-high] NC [-voice]
[-low]

däint 'dente'
läint 'lento'
täimp 'tempo'
väint 'vento'
väiŋk 'vinco'
zäint 'cento'

V [-high] NC [+voice]
[-low]

mända 'merenda'
ränd 'rendo' (vb.)
tänder 'tenero'
zänder 'genero'
tanda 'tenda'
vänder 'vendere'¹⁶

The differing syllabic valence is firmly recoverable in the Engadin; e.g., for Celerina (Schlarigna, Engiadin'Ota), Walberg (1907: 44-5) documented two distinct vowel evolutions according to the sonority of the following obstruent:

CONTRO > <i>künter</i> 'against'	* <i>bründü</i> > <i>brüents</i> 'bronze'
FRÖNTE > <i>frunt</i> 'forehead'	FUNDU > <i>fuents</i> 'farm, ranch'
MONTE > <i>munt</i> 'mountain'	MUNDU > <i>muent</i> 'clean, pure'
PONTE > <i>punt</i> 'bridge'	ROTUNDU > <i>arduont</i> 'round'
UNCIA > <i>ünša</i> 'ounce'	SECUNDU > <i>səguont</i> 'second'
UNGULA > <i>üŋgla</i> 'fingernail'	SPONDA > <i>špuända</i> 'bank, slope'

IUGU > <i>džuf</i> 'yoke'	CURSU(-A) > <i>kuers(a)</i> 'ran'
LUPU > <i>luf</i> 'wolf'	CULME(N) > <i>kučlm</i> 'peak, ridge'
NÖDU > <i>nuf</i> 'knot'	FORMA > <i>fuerna</i> 'mould'
SCÖPA > <i>šku</i> 'broom'	MUSTU > <i>mušt</i> 'must, pommace'
SCRÖFA > <i>šruva</i> 'sow'	TORTA (PANIS) > <i>tuarta</i> 'cake'

the same as:

(Note that *u* in open syllables likely represents the coalescence of an earlier falling diphthong **ou*, which left its 'hardened' trace in other contexts, e.g., CÖTE > *kuket* 'whetstone', FLÖRE > *fluker* 'flower', HÖRA > *ugra* 'hour', SPO[N]SA > *špägza* 'bride'

'tempo' genuinely contrast in the vernacular with *lengua* 'lingua', *vende* 'vendere'—cf. Toppino (1902: 522n4 et passim). For its clear presence west of the Panaro, cf. Uguzzoni's corrections (1975: 68-83) to Rohlfis and Schür. At Benedetto (Pavullo) *kë:mp* 'campo', *pië:nta* 'pianta' (reflecting an early lengthened **i*: > **æ* > **æ*:) contrast diachronically with *gränd* 'grande', *mända* 'manda', wherein the length is a more recent reanalysis deriving from laxness due to brevity in closed syllables, as is still preserved higher in the mountains, e.g. Boccasuolo (Palagnano) *gämba*, *gränd*, *vänga*, beside *ka:mp*, *pi:nta* (ib. 68-9). For earlier discussion of other points in Emilia-Romagna, cf. Weinrich (1958: 244-6). In more remote Romance types, the contrast was most assuredly decisive; e.g., in the lower Engadine, Sent CONTENTU > *kuñtün*, FRUMENTU > *fuñmünt*, UENTRE > *vüñtür* (the same as in open syllables: ACETU > *ačü*, BENE > *bün*, CANDĒLA > *kändäla*, CATENA > *kädätina*), as versus a stabler, closed-syllable reflex in *dävünt* 'far' < **de* + *ab* + *inde*, *fëndär* 'to split' < FENDERE, *mävenda* 'snack', *vëndär* 'to sell' (Pult 1897: 33-40).

¹⁶ Thus ap. Mainoldi (1967 q.vv.). At the turn of the century, Trauzzi & Ungarelli (1901), taking their cue from Gaudenzi (1889: 33) et passim, transcribe this *a* as still slightly palatalized, e.g., *mävända*, *vävänder*, *zävänder*, in contradistinction to a velarized *a* in identical context corresponding to *ö*/*ü*. For the same situation at Modena (where the falling diphthongs [evolving as if in open syllable] remain, e.g., *mävünt*, *rövümp*, *sävümp* the same as *böunt*, *vävünt*, while earlier *tönda*: *tävnda* have merged as *tävnda*), cf. Marri (1984: 153-5).

[Walberg 1907: 38]. For a similar differentiation in the lower Inn valley [i.e., -NT- as open, -ND- as closed], cf. Pult [1897: 20-3 et passim], De Poerck [1962: 80-1].

The Spanish school of Navarro Tomás and Amado Alonso was also alert to the relative length of the following occlusive in such sequences, e.g.,

NC[- voice] NC[+ voice]

ampo m = 70 / p = 110 ms.

ambo m = 100 / b = 55 ms.

venta n = 70 / t = 100 ms.

venta n = 90 / d = 50 ms.

terça n = 75 / k = 105 ms.

terça n = 90 / g = 60 ms.¹⁷

astutely deriving an historical inference from the differences observed:

los dos resultados extremos *lomo* [< LUMBU 'loin'], *iferno* [< INFERNU 'Hell'], son manifestaciones inequívocas de un opuesto papel que la nasal puede desempeñar en el grupo: [nasal] dominante [versus nasal] dominada—Espinosa (19302: 378).

Such a synchronic, articulatory discrepancy between the two contexts, opposed as to voice, whereby the N of NC[- voice] is lenis with respect to the N of NC[+ voice] as fortis, serves to explain the discrepant evolutionary paths taken by the sequences in numerous languages. E.g., in much of central and southern Italy, in Belgium and in the Pyrenees, Latin MB/ND evolved as **mm/ *nn*.¹⁸ Compare the fortis nasal spreading

¹⁷ For Italian, Jones (1950 = 1967: 125) pointed out that "when *t* is preceded by a strongly stressed vowel + *n*, it is noticeably longer than a single *t* preceded by a strongly stressed vowel only. Thus the *t* in *dante* 'Dante' is longer than that in *dare* 'you give'; it is in fact almost as long as the long ("doubled") *t* of *fatto*." Such a phonetic difference may account for the medieval northern Italian graphs with a geminate voiceless obstruent following a nasal, e.g., O Trev. *mentito* 'chin', OBologn. *chomettonssi* 'they commit themselves', *similiante* 'resembling, similar', *temperanza* 'moderation' (which modern editors hasten to clear away), and, conversely, the nasal gemination before a voiced obstruent used for modern Bolognese by Trauzzi & Ungarelli (1901), e.g., *fännz* 'fungo' (on. pl.), *lämmb* < LUMBU, *männb* < MUNDU, *piännb* < PLUMBU, versus *zaint* < CENTU, *point* < PUNCTU, *uainp* < TEMPU. For the situation in Ibero-Romance, cf. Blaylock (1966). Such reinforced post-nasal voiceless obclusives also crop up in Later Latin inscriptions, e.g., *Anttonia*, *Anttonius*, *Ponttiæ*, *vincantur*, *campidoctor* (cf. Leumann 1977: 219). From a physiologic vantage, these facts suggest that anticipatory raising of the velum accompanies chord separation, leaving an exclusively oral occlusion which fortifies the homorganic stop. As regards the medieval graphs, recall that they were often hyper-phonetic (as a result of slow, groping, syllabated transcription of pronunciation), no less than hypophonemic. Analogous gemination of voiceless obstruents after liquids, e.g., OFlor. *Berrii*, *partie*, *verso*, *voisse* (Schiaffini 1926: 265), very likely had a phonetic basis—cf. Sanga (forthcoming = May, 1989 *SLJ* meeting [Trento]).

¹⁸ Inasmuch as this is a nasal spreading or strengthening process, note that the strongest nasal, *ŋ*, most widely experienced such a "dominant" or fortition development, followed by *n*, whereas the weakest nasal, *ɲ*, only rarely behaves in tandem, e.g., Norwegian *Landsmäi* (= *Nyorsk*) with [mm, nn, ŋŋ] for *mb, nd, ng* (although *Rijkemäl* or *Bolemäl* still writes *nd*—cf. Haugen 1982: 82-3), or Land Dayak with *m, n*, and *ŋ* corresponding with Sea Dayak and Malay *mb, nd, ng*—cf. Scott (1964). In southern Italy, only limited areas of Sicily, Calabria, Puglia and the Salentine peninsula show *ng > ŋŋ*, evolving in parallel with *mb > mm*, *nd > nn*. John Trumper (p.c.) warns that Rohlfs (1966: 361 [§255]) missed the full extent of *ng > ŋŋ* in Calabria due to its socio-generational conditioning. An anonymous reader for this journal adds that the symmetrical evolution (involving *ng > ŋŋ*) is also present "in area barese e lucana meridionale e orientale" and suggests that the present-day want of symmetry may result from the absence of **ŋŋ* in the Italian inventory and thus it fails to find the corroboration of *mm/ŋŋ/nn*.

(= lag or permansive assimilation) before a voiced fricative, versus the nasal effacement or lenition with anticipatory spread of the voiceless oral occlusion in Old Norse, e.g.,

<p><i>*andar</i> > <i>annar</i> 'other' <i>*fnda</i> > <i>finna</i> 'to find' <i>*kunda</i> > <i>kunna</i> 'I could' <i>*munda</i> > <i>munn</i> 'mouth' <i>*sinda</i> > <i>sinn</i> 'voyage' <i>*tonda</i> > <i>tönn</i> 'tooth'¹⁹</p>	vs.	<p><i>bekk</i> 'bank' (OSwd. <i>bank</i>) <i>brekka</i> 'brink' (Swd. <i>brink</i>) <i>klepp</i> 'lump' (Swd. <i>klimp</i>) <i>kleitr</i> 'rock' (Swd. <i>klinter</i>) <i>skreppa</i> 'slip' (Swd. <i>skrympa</i>) <i>stuttr</i> 'short' (Swd. <i>stunter</i>)²⁰</p>
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These two divergent paths, i.e., of nasal weakening as against nasal dominance,²¹ both preserve the moraic structure of the Old Norse syllables

For Apulia, cf. Loporcaro (1988: 147); for Lucania in the negative, instead, Lausberg (1939: 97-8). In those scattered parts of central Sardinia where *mb > mm* and *nd > nn*, *ng* does not evolve to **ŋŋ*—Wagner (1941 [= Paulis 1984: 293f]), and Contini (1987: 143 & map 37). On the strong end of the scale, in Dolomitic Ladin *mb > m* has led the way—cf. Elwert (1947), Pellegrini (1954-55: 377), just as in Castilian (e.g., *lamer*, *lomo*, *paloma* versus *cuando*—thus pitting it against Aragonese and Catalan). In Aquitania, where both clusters early assimilated in favor of the nasal, the change *mb > m* lasted far longer than *nd > n*, thus HUMERU > **umbr* > **umbe* > *ume*, versus SANTIATE > *santat* (not **sanat*)—Rojjat (1932: 2, 216-7). In Old High German, to judge by orthographic evidence, *ng* seems to have followed both evolutionary paths in differing dialects, i.e., that of precocious weakening (as in Gothic—cf. infra n. 20), e.g., *chunigges* 'of the king' (on the way towards *chunig* ca. 830), *honeyge* 'honey' (< *honing* 'golden-colored'), *phenning* for *pfenning*, alongside the path of inertial nasal spreading (as in various Scandinavian dialects), e.g., *forscumme*, *frakunna* in the 8th-c. St. Gall MS of Chironian Notes (versus the Paris MS with *forscunga*, *fragunga*)—cf. Braune (1911: 105), Baesecke (1918: 123).

¹⁹ As the English glosses suggest, in other Germanic dialects in which the spirant was not voiced (cf. Goth. *anþar*, *munþs*, *vinþs*, *unþas*), the assimilatory process ran in the opposite direction, e.g., Engl. *other*, *couth*, *mouth*, *sithe* (obs.), *tooth*. The weakest nasal, the velar, was sufficiently ahead in leading the process that, before the velar fricative, it left only a long vowel already in early (primitive) Germanic (**Vjŋx* > **Vjx* > *-Vjx*), e.g., OHG. *brühita* 'brought' ← *bringan* 'to bring', *dähia* 'thought' ← *dänkan* 'to think' (Braune 1911: 105, Prokosch 1939: 86).

²⁰ Data from Noreen (1884: 76-7 et passim); cf. also Gutenbrunner (1951: 59, 74). Note that it is only the voiced fricative which succumbs to the nasal's inertial spread. Just as, inversely, only the voiceless stops, eroding the nasal's closure and sonority, operated in the opposite way. When, instead, the nasal occurred before a voiced stop, it was preserved, e.g., *kamb* 'comb', *lamb* 'lamb', *timbr* 'timber', *wamba* 'womb, stomach', *bind* 'I bind', *bund* 'hound', *land* 'land', *fingr* 'finger', *tunga* 'tongue'. (In cases of early apocope and word-final devoicing, the anticipatory desonorization and nasal weakening took place, thus the pret. *batt* and imp. *biti* contrast with pres. ind. *bindr* 'he binds', pret. plr. *bundom* 'we bound', etc. For both the relative and absolute chronology of these developments, cf. Moberg [1978]). Only the weakest nasal, the velar, assimilated in Gothic to a voiced stop if graphs such as *briggan* 'to bring', *drigkan* 'to drink', *fjgr* 'finger', *gagan* 'to go', *lags* 'long', *sagg* 'he sank', *siggwan* 'to sing', etc., are to be taken at their face value (i.e., if they were not influenced via Wulfila by Greek digamma)—cf. Wright (1954: 74-5).

²¹ The same divergent patterns of nasal lenition (preceding a surd) versus nasal fortition (preceding a sonorant) occur before stops in various Middle Indic languages, e.g., in the Khorosthi *Dharmapada* (3rd c. A.D.), with subsequent voicing of the intervocalic surd, e.g., *antara* > *adara*, *dāntab* > *dādū*, *hanti* > *hādī*, *kānti* > *kādī*, versus *chandās* > *channu*, *kranda* > *kana*, *vindati* > *vinadi* (Sen 1960: 13, 56, 70). The nasal erosion pattern is the more frequent of the two

at issue, just as did the cognate development reviewed above for Old English, wherein compensatory vowel lengthening took the place of a lengthened, ambisyllabic consonant (compare *amar* with *ōber* 'other', *mum* / *mūb* 'mouth', *tōnn* / *tōp* 'tooth'). Such cognate developments already begin to hint at the convertibility of the nasal coda, VN(C) > V̄V(C) (or later VV[C]) or VC(C), which will shortly become a Leitmotif of our analyses based upon timing constraints.²²

If pressed to judge the relative potential hazard of a context which tends to deprive a nasal of sonority as against that which deprives it of closure, I would incline to favor the latter,²³ since there are languages (such as Latin above) where nasal codas are eroded only before fricatives (never stops, ²⁴ e.g., CAMPUS, DENTEM, UNCUS 'hook'²⁵) and others still in which they are

changes, e.g., Sk. *tankū* > Prakrit *takā*, Hindi *tāk* 'coin'. Marathi presents the likely intermediate phase (conserving nasalization), e.g., *avta* > *āt*, *cañcu* > *cōc* (but no nasal loss before a sonorant: *bhāñḍā* > *bhāñḍ*, *cañḍra* > *cañḍ*, *nimba* > *nimb*)—cf. Bloch (1920: 82-85).

²² While the nasal erosion seen above in Latin could smoothly result in a phonemically lengthened vowel, given that language's quantity oppositions, in many Romance dialects (from which such a phonological length distinction had disappeared) where the same plebeian process was reëacted on a later crop of *-s/-f-* sequences, the result was fricative fortition, i.e., the type *pesar* for *persare* 'to ponder, think' as versus *pezar* 'to weigh' (concretely) inherited from pleb. Latin *PĒSARE* for *PĒSARE*, cf. OProv. *coselh* < *coselh* 'counsel' < *CONSILIU*, *esems* < *enems* 'together' < **insemel* for *SIMUL*, *masip* < *mansip* 'boy, manservant' < *MANCIPIU* (Appel 1918: 78), OCat. *cosòls* < *CONSULES*, *cosseyl* < *CONSILIU* (mod. Cat. *consell* with learned reaffirmation of *n*). Compare also Sard. *mazédu* < OSard. *masédu* < OSard. *masédu* 'tamed, tazoni' < OSard. *tesones* 'nets stretched to trap birds' < *TENSIONES*, versus more recent assimilations as in *bilassa* 'scale' < *bilansa*, *persare* 'to think' < *persare*, *kossolare* 'to console', *iskassare* 'to get out of the way' < *scansare*, *diskassu* 'rest, relief' < *Sp. descansar*—Wagner (1941 [= Paulis 1984: 296]) and cf. sup. n.12. There are late Latin graphic variants which also suggest this alternative, consonant-timed compensation, e.g., *messes* ~ *menses* for *MENSĒS*. In the light of such data, one might speculate that the frequent Old Spanish graphs of the sort *Alfonso*, *cansado*, *consejo*, *piensan* (as in *Cid* MSS) may represent similar s fortition as a consequence of nasal weakening. Recall that this was the Oscan result of acc. pl. **-ovs*, **-ems* and analogic **-ans*, e.g., *fehuss* 'walls' (Cippus *Abellanus* ap. *Vetter* 1953: 9), *vias* 'streets' (*Pompei*—*Vetter* 1953: 48), *whereti* *-ss* represents the same fortis sibilant that resulted from other assimilations (e.g., *meddiss* < **meddiks*, or with **-iff(o)s* dat. and abl. pl.: *analfiss*, *saferiss*). (Conversely, Umbrian attests to dialectal variation: *treif* [with vowel lengthening] for *trif* = *tris* [Leumann 1977: 145].)

²³ The phonetic reality of such a differential progress was already observed by Roussetot (1901 [= 1924: 546]), who noted in the Walloon dialect of Alost (= Aalst) a "double résultat de la syllabe *an*, selon qu'elle est suivie de *-s* ou de *-t*: *kāns* 'chance' [et] *kant* 'côté'. La nasalité de la voyelle est beaucoup plus intense dans le premier cas, à tel point que l'*n* a été presque entièrement absorbé."

²⁴ This class would include, at the Romance stage, affricates (i.e., stops with delayed release) as well. Compare in the Val Leventina (Sganzini 1925-26: 104, 116, 147, 203-6): AXUNGIA > *sofza* 'grease, suet', FUNGŌ > *fōjz* 'mushrooms', LONGE > (*da*) *lōjz* 'fat', PENSAT > *pañša*, PIANGERE > *piēs*, Longob. **ykanas* > *skējza* 'crutch, strut', as against no erosion in CINGULU > *senz* 'cinch, strap', **manducō* > *mēndži* 'I eat', SANCŪ > *sanis* (var. *senis*), TANTĪ > *tanis* (var. *tēnis*), the same as *lojz*, *mont*, *pont*, etc.

²⁵ Although some incipient weakening of the weakest caudal nasal, the velar, may be detected in the curious vowel lengthening (as a vestige of nasalization) observable in perfect participles such as CINGŪ < CINGŌ, FŪNCTU < FŪNGOR, IŪNCTU < IUNGŌ, PŪNCTU < PUNGŌ, SANCŪ < SANCŌ, ŪNCTU < UNG(U)Ō (Niedermann 1953: 73), wherein the root-final velar stop was devoiced before the suffix *-to*-. Cf. also QUINQUE *avec* *i* issu de **e* devant nasale gutturale tandis

weakened before voiced as well as voiceless fricatives, without being measurably affected before either grade of stop,²⁶ e.g., in the Val d'Antrona (Nicolet 1929: 50s et passim):

que *e* subsiste devant *n* dentale, par exemple, dans CENTUM" —Meillet 1937: 116, and further Grammont 1939: 220 (comparing TINGUŌ with Gr. *téggō*). By this same principle might be explained CONŪX (beside vars. CONTUNX and CONTŪX), which seems to violate through excessive weight [i.e., [-uŋks] as VVCCC] the syllabic canons posited by Panfilov (1977: 95). (It is impossible to know what the original value of Greek digamma may have been, i.e., whether **jg* ever had an allegro realization **jgg*.) In Gothic it was only the velar **ŋ* to assimilate to a following stop, if such graphs as *briggan* 'to bring', *figg* 'finger', *gaggan* 'to go', *laggs* 'long', etc., may be taken at face value (cf. Wright 1954: 74-5). In Old Provençal, it was velar **ŋ* to weaken before *g* into an oral tap reanalysed as *r*, e.g., CANONICA > *canongue* > *canongue* > *canongue*, DOMINICA > *dīmenegue* > *dīmenegue* > *dīmenegue*, MANICA > *manega* > *manega* > *manega* > *moregure* > *moregure* > *moregure* (Appel 1918: 78-9). In conservative central Sardinian, with nasal loss before fricatives (e.g., *-ns* > *-s*, *-NF/-MF* > *-ff*, and, for Nuorese, *-NTJ/-NCJ* > **nis* > *n̄* > (ð)ð—cf. supra n.12), as against nasal preservation before stops, it is significant that the few sporadic instances of nasal erosion in this context involve velar *ŋ*, e.g., Log. var. *addūkkas* 'cunquē' for *addūnkas* < *DUNC* + *UNQUAM* (DES 1,483 and Paulis 1984: 569), *affleku* 'expectation' for *afflīku* < Sp. *afinco* 'eagerness, acquisitiveness', Camp. var. *affrakakāi* 'to grab' for *affrankāi* (on *franka* 'branca'), *akka* 'where' for *ānka* (DES 1,85), *makkāi* 'to lack' for *mankāi*, but never **kappu* for *kappu*, **teppu* for *tempu*, etc. (The apparent anticipation of *b* over *m* in Belvi *ibbina* 'gut' for nearby *imbina* [and even *immina* at Tonara] < INGUINA [with accent shift—DES, 1,613 and Wagner 1941 (= Paulis 1984: 479)], against the general evolution seen in ANGUILLA > *ambidda* 'eel', QUINQUE > *kimbe* 'five', LINGUA > *limba* 'tongue', LANGUIDU > *lāmbidu* 'sated, stuffed', SANGUE[N] > *sābente* 'blood' [Wagner 1941 (= Paulis 1984: 226)], may well harken back instead to precocious erosion of velar *ŋ* before the etymological labio-velar *gw*, i.e., one might reconstruct **iggwina* from **iggwina*, with the standard development of the labio-velar thereafter as in AQUA > *abba* 'water', EQUA > *ebba* 'mare', SILIQUA > *silibba* 'pod'. Thus developments such as *ibbina*, cf. also *kibbānta* 'fifty' at nearby Busachi [beside *kimbe* 'five' however], would confirm the hypothesis of precocious weakening of the velar nasal *ŋ* rather than contradict it.) *N*, inferrably become velar, in the sequence *-NCT*, is the only nasal to be absorbed before an occlusive in lower Engadine, e.g., EXTINCTU > *šitt* 'snuffed-out', IUNCTA > *jitta* 'excess, overplus in a trade', PUNCTU > *pūtt* 'point of needle' (versus *DENTE* > *dānt*, GRANDE > *grōnt*, etc.—Pult 1897: 106 for Sent). In several Sursilvan varieties, *N* before *g/k* weakened a step ahead of *N* before other occlusives, coming to form an open syllable and thereby permitting a lengthened bimoraic nucleus, e.g., *brānpka* > *brānpka* 'paw', *isāngga* > *tsāngga* 'pliers, tongs' versus *grōnda*, *kōmp*, *tōnts* (Huonder 1900: 21-3). Recall that in this prevelar position alone, i.e., not before *nj/nđ* nor *m/mb*, Late Latin vowels were lengthened and tensed and thus closed in Tuscan, e.g., FUNGU > *fungo* 'mushroom' (not **fongo*), IUNGU > *giunco* 'reed' (not **giunco*), LINGUA > *lingua* 'tongue' (not **lengua*), LONGU > *lungo* 'long' (not **longo*), TINCA > *tinca* 'tench', UINCULU > *vinchio* (→ *vinco*) 'withy', or the Gmc. suffix *-ingo*. The expected mid-vowel results (just given with asterisks) begin around Arezzo to the South and Lucca to the West. Prior to the diffusion of the Florentine model, they were more widespread, e.g., Siense *tenche* was a Shibboleth (vis-à-vis Flor. *tinche*) circa 1526 (Gigli 1717: lxxvi for its passport function). To the precocious tendency of velar *ŋ* to transfer nasal resonance forward we shall return momentarily (infra §4.2—also n.27 for non-etymological insertion). The same closing tendency surfaces in Bolognese, although only with the more homorganic back (velar) vowels, e.g., *fonz* 'fungo' (pl.), *long* 'lungo', *ōngke* 'ughnia' (not **lāng*, *āngā*), versus *langua* 'lingua', *vānje* 'vinco' (from older *vānje*, etc.—cf. Coco 1970: 19, 24).

²⁶ Graphic var.s in Old Provençal suggest nasalization and nasal weakening before *v* no less than before *f*, e.g., CONUENIT > *conen* < *coben*, *comidar* > *comidar*, *comit* > *comi*, *enveja* > *enveia* (< INUDDIA), same as CONFUNDIT > *cofon* < *cofon*, *enfan* > *efan*, *enferm* > *eferm*, etc.—cf. Anglade (1921: 187-8) (who also notes occurrences in Sandhi, e.g., *bo voler* 'good will', *mo filh* 'my son', same as *mo saber* 'my opinion, understanding', and in contrast with preservation before stops, e.g., *mom payre* 'my father', *mon talen* 'my inclination', *de bon talen* 'willingly, in good faith', also intervocally *mon amic* 'my friend'). Likewise for OCat. *covent* <

brj^ošul ~ brjšul 'juniper'
 čejš ~ čěš 'prepared, neat'
 fūš ~ fūs 'mushroom(s)'
 mūža ~ mūza 'to milk'
 pīsa ~ pīsa 'pliers'
 rāmf ~ rāf 'crayfish'
 rāš ~ rās 'rancid'
 sūža ~ sūza 'suet'
 vāš ~ vās 'check'²⁷

but

banča 'bench'
 čamp 'field'
 gamba 'leg'
 ganda 'acorn'
 lanča 'bog'
 rōnda 'to render'
 runi/-da 'round'
 sampa 'paw'
 sant/-a 'saint'²⁸

CONUENTU, *cové* < CONUENIT, same as *devesa* < DEFENSA, *enceza* INCENSA, *ifant* < INFANTE—all instances which have been reversed by learned overlays—cf. Bacia i Margarit (1951: 194). In remoter areas, the process remains uncorrected, e.g., in Upper Engadine: Celerina (Schlarigna) *kuvliker* < CONUENIRE, *ivildža* (Church-word) < INUIDIA, *ivider* < INUITARE, *iviet* 'invitation', same as *kufurter* 'to comfort', *ifem* < INFER(N)U, *iflēr* < INFILARE, and *kuzdrin* 'cousin' < CONSORINU (Walberg 1907: 121-2).

The inverse index to such nasal evanescence, i.e., hypercorrect, adventitious nasal insertion before *s/z, š/ž*, is far more widely attested in northern Italy than its positive occurrence. (Just as in Old Provençal, where nasal epenthesis formed the obverse to loss [cf. supra n.22], e.g., *destressa* for *destressa*, *ensai*, *ensamentz*, *ensien*, *quains* [for *quaiscais* 'almost, nearly'], *roisimbol*—Appel [1918: 96-7].) But this documentary state of affairs is not atypical of tendential changes which initially occur in the more casual rapid, negligent speech register of a community and thus prompt a counter process (hypercorrection) in the literary record often before positive evidence surfaces in script. Schneller (1870: 75) dedicated a paragraph to the phenomenon in Ladino ("Einschiebung": e.g., *dozerna* 'dozen', *smozir* 'to bellow' < MUGIRE, *sonsin* 'plum'); Salvioni (1886: 223-4) cited numerous cases in north-central Lombard, e.g., *dozerna* 'dozina' < **duodecima* 'dozen', *gonža* 'gaggia' < GATA jay, magpie, *lavéns* 'lavaggio' (= 'turned stone vessel', 'pot-stone'?), *Manža* '(Val) Maggia', *mōvž* 'moggio' < MODIU 'bushel', *penž* 'peggio' < PERUS 'worse', *rōnža* 'roggia' (cf. *roxa* in Bonvesin) < [AR]KUCIA 'excavation, pit', mentioning 'frequent examples' nel milanese urbano e più nel rustico." (Cf. further Salvioni [1895: 78, 1907: 725], and Sganzi [1925: 26: 116, 204f] for Leventina.) Cases abound in older docs., e.g., *angonza* 'anguish' < ANGSTIA, *tonsego* 'poison' < TOXICU (Uguccone da Lodi), although some influence from the prefix IN- has been suggested since Mussafia (1873: 69) for such frequent forms as *invald* 'summer' < AESTATE, *insites* 'same' < **iste-ipsa*, and (paradoxically) *insifj* 'to go out' < EXIRE. (In the Valvestino also before *g*, i.e., the weakest [homorganic] velar nasal was implicitly evanescent and in variation as well, e.g., *formingo* 'little ant', *minglo* 'little flake, bit', *oringlo* 'nettle', *springlar* 'to glean', *zminglar* 'to cut up, dice', the same as *granžel*, *lenžer*, etc. [Battisti 1913: 33]. Cf. general Lomb.-Ven. *angonara* 'needleful of thread' **acónaria* on ACUS, *angulana* 'water-sprite' < **aguāna* [Prati 1908: 36], *an-langual* 'equal', *delenquar[e]* 'to melt' < DELIQUARE, and with inertial or permansive nasal resonance *minga* 'bit' < MICA.) The tendency is widespread to the east, cf. Ven. *ansa* < ANSA 'axe', *consa* < COSSA 'thing', *instà* < ISTA 'summer', *mensōra* < MENSURA 'selvedge', *skarpānda* < *skarpānda* 'beetle', *sissof* < SISOS 'chilins', *Chioçg* *sonsu* for *sissovo* 'whisper', *tansa* < TANSIA 'debt, tax', and is by no means recent (cf. *consa* in 13th-c. *Lanuda* & many MSS of the *Plainte* [ed. Linder 1898: *lextixil*]; nor is it absent to the West, e.g., Piem. *linger* 'leggero', *ninsola* 'nocciuola', *nōse* 'to bewitch' < NOQUERE, *ransie* 'rosicare' (cf. Aly Belfald 1933: 73, Salvioni 1898: 477, Toppino 1902: 545). Salvioni (1902-05: 242-3) cited numerous Friulan toponyms wherein the preceding nasal resonance induced reanalysis of **nīs* as *nīs*, e.g., *Bicininis*, *Buininis*, *Cicuinis*, *Lucinins*, *Malinins*, *Pantianinis*, *Preccinins*. In the Veneto, it presupposes a fortis or voiceless *s*, which also could occur following the off-glide *wau*, whether etymologic or accruing in the medieval period from the vocalization of *l* before dentals, whence the variants *causa*, *consa*, *cosva* with corrections *colsa* and *consa*, *aus*, *oss-artse* 'to dare', with

If we have thus far graded various types of medial coda positions as to their potential hazards for nasal stability,²⁹ it remains to distinguish the coda position of maximum jeopardy from the position of greatest stability.

2.3. Coda versus onset position.

While word-final coda position on a stressed nucleus emerges as the context of greatest risk for a nasal, sapping its sonorance and the general integrity of its closure through forward transfer to the preceding vowel, onset position is instead the context of maximum strength since here any anticipatory lowering or misalignment of the velum will tend to enhance rather than erode nasal identity. Indeed, if the foregoing vowel becomes markedly nasalized, the transition from it to the nasal's specific closure may be perceived as a light or fleeting velar nasal and thereupon be reproduced as such, i.e., with some dorsal tongue raising en route to, say, the apical contact for *n* (V⁷|nV) or the lip closing for *m* (V⁷|mV). Thus in many Gallo Italian dialects, the resonance of a nasal onset following a stressed vowel has spread forward across syllable juncture without any sacrifice of the original onset's status. For ex., Gaudenzi (1889: 32) observed that VNV in Bolognese:

tra vocali, purché tenga dietro alla sillaba accentata, si raddoppia: e allora la prima *n* diventa gutturale, la seconda resta dentale: il che equivale a dire che la *n* genera nella vocale accentata precedente una assonanza gutturale. Es.: *spagna* 'spina', *logna* 'luna', *curagna* 'corona'.³⁰

corrections *obartse* and *onsartse* (cf. Tuttle 1986). Such variation spun off frequent *n* insertion, e.g., OVen. *lonsengare* 'to flatter' ← Prov. *lausengar* (Salvioni 1890: 262n4), *ponçino* 'chick' PULICINU, *ponso* 'wrist' ← PULSU—Stussi (1965: 205), Ineichen (1957: 103, 1966: 569-70). Such insertion was especially widespread when abetted by a preceding nasal (via lag or inertial spreading across the vowel), e.g., *menza* 'milza' (spleen), *minga* 'milza (spleen)', *monto* 'molto' ('much'—also in the syntagm *montben*, *montben* < *molto bene* present through Emilia into Monferrato), and likewise in Sandhi producing *anto* 'alto', *antro* 'altro', with the phonosyntactic pattern still present in western Tuscan, e.g., *n' antra volta* but not **n' antro*—cf. Varanini (1983: 89), also Nenucci (1865: 11, 20) (for Pistoia). For *nf* → *ff*, cf. OTrev. *affanegar* 'to rave' for *anf*, highland Veneto *onfegar* > *ofegar* 'to smear', whence inversely *onfir* for *ofir* 'to offer', etc., also OVeron. *onfende* 'he offends' (also Uguccone da Lodi), Mil. *sonfiàs* (el nas) 'to blow nose'. In Sardinian dialects with (-ð)ð (cf. supra n.25), such adventitious nasal insertion (analogous with lag nasalization as in *manūda* 'handle' < **manūcca* (Wagner ap. Paulis 1984: 356-64). pot' < **brundiu*, *sent* 'thin strip of grass' (lit. 'belt' < CINGULU), *undža* 'fingernail' < UNGULA.

²⁸ Also before originally voiced affricates, i.e., stops with delayed release, e.g., *brunīs* 'bronze' < **brundiu*, *sent* 'thin strip of grass' (lit. 'belt' < CINGULU), *undža* 'fingernail' < UNGULA. E.g., *n* + voiceless fricative > *n* + voiced fricative > *n* + voiceless stop > *n* + voiced stop.

³⁰ Compare, for the earlier phase, Gorra's comment on Piacentino: "nei femminili in VnV lo strascico nasale d'uscita del maschile permane, ma il *n* ricompare, e nel singolare si unisce alla sillaba seguente, quindi *sā* 'sano', femm. *sāna*, cioè, *sā + na*, e così *tā + na*, *lā + na*, *bō + na*..." (1889: 149).

The same gradient of vowel receptivity ($a > o > e > u > i$ —soon to be clarified [infra §2.5]) also obtains for this further extension of nasalization. Thus, as stated, there are dialects wherein only stressed \bar{a} accepts nasality from a following nasal onset. For his native Piveronese (TO), already Flechia (1888-89 [publ. posthum. 1898: 118-91]) had a firm grasp on the situation:

È noto come il piemontese abbia insieme col genovese un così detto η faucale; ma la faucalizzazione di cotesto suono nel piemontese è di doppia Natura. Il torinese, o piuttosto l'alto piemontese in genere, ha codesta nasale faucalizzata e l'ha come suono semplice; mentre nel basso piemontese la nasale si raddoppia e si raddoppia in guisa che il primo n suoni faucale [ŋ] e il secondo dentale [n]; quindi mentre gl'it. *lana*, *catena*, *spina*, *corona*, *luna* nell'alto piemontese vengono a sonare *lana*, *kadena*, *spina*, *kuruna*, *luna*, nel basso si profferiscono *lagna*, *kadena*, *spina*, *kuruna*, *lagna*. Ora il piveronese che, fuor delle sue specialità, concorda generalmente col basso piemontese, non conosce punto cotesta faucalizzazione se non dopo l' \bar{a} tonica, mentre dopo le altre vocali presenta la nasale inalterata, vale a dire né doppia né faucale, corrispondendo per questo rispetto al dialetto canavesano che non soggiace punto alla legge della faucalizzazione; quindi [piv.] *bruvantagna* 'aggiunto di una specie di fave', *kantaragna* 'raganella', *davagna* 'dipana', *subjagna* 'salamandra', [agg. *gavajgavajna* 'bucato, forato'] *lagna* 'lana', *spagno* 'manico', [marzagna 'melanzana',] *paizagna* 'paesana', *piantagna* 'piantaggine', *piagnone* 'spianano', *terzagna* 'terzana', *valzagna* 'valligiana', ma *spina*, *buna*, *kuruna*, *bruna* 'tuona', *kuina* 'culla', *iuna*.³¹

Projecting rapidly forward, this evolutionary line bifurcates according as to whether the nasal sequence $-ŋn-$ underwent anticipatory or instead lag/permansive assimilation. By anticipating alveodental n , the forward spread of nasality was retracted and the ambisyllabic dental n , still written $-nn-$, came to be realigned as a fortis onset, i.e., $*\bar{V}ŋ|nV > *Vŋ|nV$ ³² >

³¹ Nigra by 1878: 37 contrasted the alveodental VnV which remained "incolume" in Canavese, with the short velar of Turin and the heterosyllabic nasal sequence of the Monferrato (ηn). In his great anthology of *Canti popolari del Piemonte* (1888), he utilized b to represent syllable juncture, e.g., Tur. *fascinha*, *funtinba* [= ηa] versus Monf. *chenbna* 'cuna', *crubna* 'corona', *fenbna* 'fina' [= ηn]. The sequence $-ŋn-$ was confirmed by Renier's Monferrine informant, Ant. Piccarolo (1896: 136). (The same graphic expedient has been used since Sarmento for this anomalous juncture in Galician.) The Turinese poet, Pinin Pacot, would later adopt a hyphen for the same function. (Aly-Belfadel [1933: 73-4, 93] merely muddled the waters in this regard.)

³² This reconstructed phase is preserved in parts of lower Piedmont, e.g., Gressio (CN) and Murazano (CN) *län|na*, Strevi (AL) *län|na* (from earlier $*län|na$ attested in surrounding zones—cf. Parry [1984: 62] for data, also Schädler [1903: 45-6] and Rohls [1966: 312]). Thus, for ex., the Alessandrine ethnographer, Gius. Ferrero (b. Carpeneto d'Aqui 1847), warned that "la semplice n si divide quasi in due, mettendo un intervallo di pronunzia tra esse. Per es., *sen-na*, *caden-na*, *funtan-na*, *cason-na*... *chin-na*, *lin-na*, *farin-na*' (1881 = 1889: 77). (N.B. the process only obtained with stressed vowel nuclei; thus *üna* as an autonomous pronoun 'one' → Monf. *in-na*, but as a proclitic indef. art. Monf. *ina fju* 'a flower', *ina levr* 'a hare'—1889: 63.) Ungarelli (1901: ix-xi), against the background of Bolognese $-ŋ na$, noted that certain country dialects had evolved $-n|na$: "Quando la n è doppia dopo e od o, la prima [ŋ] si pronunzia gutturale e l'altra dentale: *spen|na* 'spina', *furton|na* 'fortuna'... ed è in quest' n doppia che rilevasi una delle principali differenze fonetiche fra il dialetto cittadino e il dialetto rustico, giacché i rustici, specialmente i montanari, pronunziano *galen|na*, *furzen|na*, *furton|na* con tutt'e due le n dentali." For Parmigiano, Malaspina (1856: I, 7) used an apostrophe "a far posare la pronunzia... con

* $V|nV$.³³ Pio Rajna, although a native of Sondrio, after many years in Milan, observed that n in the context $\bar{V}nV$ there acquired:

un suono che l'alfabeto italiano non ci permette di ben rappresentare né con un n sola né con due, sebbene in mancanza di meglio, si sia pur costretti ad adottare l'uno o l'altro partito. Il femminile di *bon* = [bō] non è né *bona* né *bonna* letti all'italiana. L' n di questi casi è vibrata come la doppia toscana, ma più breve e compatta; ché, invece di ripartire le sue articolazioni tra la vocale antecedente e la seguente, le appoggia per intero alla seguente, quasi fosse scritto *bo-nna* (1880: 37).

Salvioni (1884: 156-7), who cited Rajna with approval, provided indirect evidence for the earlier ambi- or heterosyllabic phase in the form of

una pausa momentanea... come in *Patón'na* 'cagnaccia', *spén'na* 'zipolo', *zén'na* 'capruggine'. The phonetic value of this graph remains obscure. Some eighty years later, Ugo Pellis' inquiries at Parma (ALI Cd 5, 1938) recorded an urban dialect split along two evolutionary lines: the city center had preserved an earlier stage with a velar nasal coda, $-ŋ n-$, whereas, across the Torrente Parma, Rione Ognissanti (Borgo Arta) had vocalized the nasal coda as a palatal glide and eliminated nasalization ($*\bar{V}ŋ|n- > *V|n-$). The earlier existence of the ambisyllabic phase (there asterisked) is corroborated by the shortening > laxing > opening of the heirs to Latin \bar{i} and \bar{u} ; e.g., *coq(U)ina* 'kitchen' > center *kužéŋn'*, Oltretorrente *kužéŋn'*, *farina* 'flour' > cen. *faréŋn'*, Oltretorr. *faréŋn'*, MATUTINA 'morning' > *m'léŋn'*, *m'léŋn'*, PRUINA 'frost' > *bréŋn'*, *bréŋn'* (same as heirs to \bar{e} , e.g., CATENA > *k'éđéŋn'*, *k'éđéŋn'*, PLÉNA > *pléŋn'*, *pléŋn'*, UENA > *véŋn'*, *véŋn'*), and CUNA 'cradle' > center *kóŋn'*, Oltretorrente *kóŋn'*, LUNA 'moon' > *lónŋn'*, *l'éŋŋn'* (same as SONAT > *el-sóŋn'*, TONAT 'it thunders' > *e-tróŋn'*, *e-tróŋn'*). Since \bar{a} , as will be seen shortly for Bolognese, was intrinsically too long to accept the incremental weighting of forward transfer of nasality, forms with ancestral \bar{a} remain the same for both parts of town (i.e., nasal evolution was blocked from the inception), e.g., center and Oltretorrente *fontán'*, *kampán'*, *laar'*. For the stage with ambisyllabic, re-dentalized $-n|n-$ compare further in Sardinia, between the innovating Campidanese bloc with MANU > *mān* and that of conservative *mānu*, "dans les parlers de Fordongianus et d'Allai... [-N-] est réalisée régulièrement comme une géminée: *mānu* > *mānu* 'main', *sōnu* > *sōnu* 'sommel'" (Contini 1987: 136, also *čennāi* 'cenare'—map 36, and at Laconi *čenn'oi*, *mān'u*)—developments for which I would reconstruct an intermediate phase $*\bar{V}ŋ|n- > *V|n-$. (As for many Sardinian processes, this too occurs in Sandhi, e.g., *sa 'nura* 'the daughter-in-law' versus adjacent *sā 'ura* from $*sā'ŋ|ura$ —cf. Contini [1974: 107-12] for an additional sociolinguistic factor in the equation.)

³³ This result, after further apocope, fed the French results of the type *bonne* < BONA (vs. *bon*), *chienne* (vs. *chien*), *donne* < DONAT (vs. *don* < DONU), *sonne* < SONAT (vs. *son*), etc., which begin to appear during the 13th C. (Pope 1934: 168). In view of the northern Italian data, Fouché (1966: 567) seems hasty in dismissing them as never having had geminate or heterosyllabic value: "les graphies du type *bonne* < BONA, *bonne*, < BONA, *sonne* < SONAT, etc., ont été créées pour indiquer la nasalisation de la voyelle précédente... elles n'ont jamais prétendu *m* ou *n* geminés." Certainly $-nn-$ is likely to have represented $*-ŋn-$, and $-mm-$ may easily reflect $*-ŋm-$ (already Gauchat called attention to such a "son transitoire $-ŋ$ " for the Franco-Provençal of Dompiere [1890: 399-400], and it is well attested in Val d'Aosta today, e.g., Antagnod *fjāŋ|ma* 'flame', *krāj|ma* 'cream', *rāj|ma* 'branch'—Pellis ALI Bb5, nos. 748, 4407 & 3077, no less than in the Franco-Provençal of Montana, e.g., AMAT > *lāŋmā*, FLAMMA > *fāŋmā*, FUMŌ > *fjāŋmā*, $*krāmā$ > *krāj|ma*, LĪMA > *līj|ma*, PRĪMA > *prīj|ma* 'thin' [masc. *prīj*], RAMA > *rāj|ma* [Gerster 1927—although a few instances in which this sequence has evolved to a long, ambisyllabic m are also cited, e.g., CŌMA > *kōmā* 'mane', HOMINE > *ōmno* 'man', LACRIMA > *lāj|emmal*). For such a phase, $*\bar{V}ŋ|n-$, in older French, cf. the early vernacular result of adverbs composed with present participles and -MENTE, e.g., *ardement* < ARDENTE + MENTE, *avenement*, *nosachament*, *prudement*, which likely passed through the same stages as *gramment* < $*gā'ŋ|mēt$ < GRANDE + MENTE—cf. Nyrup (1936: 310-11). Recall that the homophony of *grammaire* 'grammar' and *grand-mère* 'grand-mother' created confusion for Molière's *Femmes savantes* (II, vi, 492)—as $*gā'ŋ|mēr$ or $*grammēr?$

compensatory shortening of *i*, e.g., *maremma* 'ciliogia amarina', *mezenna* 'mezzina', *quajcossoremma* 'qualche cosolina' (1884: 67-8).³⁴

Next to this path of restoration, there diverged the other which led, via lag or permansive assimilation, to more radical nasal weakening. I.e., where the intermediary *Vŋ|nV was compacted in an inertial or lag direction, the resulting ambisyllabic *Vŋ|ŋV would tend, by the intrinsic nature of the velar ŋ, to shift its syllabic allegiance in the opposite direction.³⁵ Whereas Milanese alveodental *Vŋ|nV resyllabified as V|nV, the strong tendency for velar ŋ to form only an arresting articulation (cfr. infra) caused it to cleave with the foregoing nucleus as a coda, Vŋ|V,³⁶ as in Turinese and Genoese (and Galician), and herein lay the seeds of its potential demise. It is not easy to find dialect dictionaries which graphically render the specific "coupe syllabique" in such cases,³⁷ but an acute ear such as Ugo Pellis' was at pains to distinguish juncture for dialects such as, say, Antagnod (Val d' Ayàs [AO])—ALI questionnaire Bb5, Sept., 1936), e.g.,

³⁴ As for the chronology of the process, it occurs in later Medieval documents, where it is "più frequente dopo *à, ò, è, che non dopo *i, ù*" (Salvioni 1898: 231), e.g., *menna* (versus unaccented *menar* 'to beat'), *penna* 'pain' (vs. unaccented *penoxo* 'painful'), *perdonna* (vs. *perdonerà* 'he will pardon'), *vanna* 'vain' (vs. *vantaa*). From the earlier Medieval period, it appears "Bonvesin non connesso il fenomeno di *-ena* da < -ina, che era nella Milano de' passati secoli" (Salvioni 1911: 374). Since the 18th C., the *-enna* type (with etymological long *i* compensatorily shortened in the newly-closed syllable) has been widely replaced by *-ina* wherever it could be identified with Italian cognates (Salvioni 1919: 532-3).*

³⁵ For this phase, compare the transcriptions of Stampa (1934: 54) for Vicosoprano in the upper Val Bregaglia (where conservative Lombard grades towards Romontsch): LĀNA > lāŋ^ŋα 'wool', koglaŋ^ŋα goat-dung', svalvāŋ^ŋα 'leather yoke-guard', lom paŋlāŋ^ŋα 'the pinecones' (pl.). Redolfi (1884: 165) had alluded to "Inlautendes *n* zwischen Vokalen > *ŋ* in Vicosoprano," and Stampa (1934: 93, 99, 116) confirmed the fact, e.g., BONA > bōŋα, CATENA > kaŋαŋα, CORONA > korāŋα, FOČĀNA > fočāŋα, LĀNA > lāŋα; but it was only in specifying the velarization of A that he made the syllabic transition precise: "Man könnte ebenso gut lāŋ^ŋα schreiben. Gewöhlich nur noch im Munde der Alten" (1934: 54).

³⁶ I.e., velar ŋ constitutes a conspicuous exception to the variously-named principles "of maximum open syllabicity," "of minimal coda and maximal onset," (Pulgram 1969: 27-8, Klausenburger 1970: 3, Bybee [Hooper] 1976: 190), or "rightward resyllabification" (Harris 1983: 56-e.g., Sp. *bas ido* → [ba|sido], *tiene alas* → [tjene|salas]). For the same causal syllabification of ŋ in Gallego, cf. infra n.87. The tendency to produce open syllables (or shift coda to onset) was noted by Consensus (5th C.) for late Latin, wherein sic ludir was pronounced Florentine graphs such as *imulto*, *invallegrezza*, *inuidienza*, *nomme* (Lib. Dist. Troia ap. Schiaffini 1926: 274), i.e., reading [i-nalto] not [in-nalto].

³⁷ Although for late-18th-c. Genoese, Parodi cites *Regole d'Ortografia* wherein *ŋ|ŋ (written ŋ) is clearly described:

si pronunzia in guisa, che alla vocale antecedente lascia attaccato il suono di una *n* vocale Francese, e poi essa suona come *n* Toscana innanzi alla vocale seguente. Così nella voce *peŋna* [= *peŋj na*] si pronunzia come se fosse *pen-*, colla *n* finale Francese, e poi *-na* Toscana, *pen-na* (1902-05: 351-2).

Following this ambisyllabic phase, "l'antico *ŋŋ* si ridusse, probabilmente durante il sec. XVIII o sulla fine di esso, a un semplice *ŋ*, vale a dire che la parte dental del suono a poco a poco si assimilò alla parte precedente velare: *lāŋna*" (ib.). Parodi did not specify the likely intermediate stage, *lāŋ|na > *lāŋŋ|a (with syllabic realignment), but he did note that the strengthened *ŋ|ŋ left in its wake stressed vowels which evolved as if in a closed syllable (thereby implying ambisyllabicity)—id. 353.

bōŋŋ|a 'buona', damiŋŋŋ|a 'damigiana', fontŋŋŋ|a 'cacio di latte intero', fontŋŋŋ|a 'fortuna', gyanŋŋ|a 'granella', ŋenisŋŋŋ|a 'genziana', kampāŋŋŋ|a 'campana', kantŋŋŋ|a 'osteria', lanŋŋ|a 'lana', nōŋŋŋ|a 'riposo delle vacche alle 11:30 AM', pjanŋŋ|a 'pianura', popōŋŋ|a 'bambola', ranŋŋ|a 'rana', soŋŋŋ|a 'suona' (vb.), troŋŋŋ|a 'tuona' (vb.).³⁸

Such Ayassin forms strongly suggest that syllabic realignment followed immediately upon assimilation to the velar locus and was simplified thereafter to produce the more familiar short *ŋ* coda of Turin, Asti, Genoa, etc. In such cognates, one is left with a simple velar nasal coda (no longer an onset), and thus it is not surprising that it should transfer forward its nasality while the upcoming vocalic aperture attenuates its closure, thus conducing to a mere nasalized vowel, i.e., bōŋŋ|a, cēŋŋ|a, galŋŋ|a, lāŋŋ|a, lūŋŋ|a are not far in the perception → production chain from bōā, cēā, galā, lā, lūā.³⁹ By way of illustration, compare the following cognates from the conservative Vallée de Cogne (where forward nasal spreading is no further on than at Piverone), with those from the neighboring Valsavarenche (Maisonasse), intercalating the phases from the Val d' Ayàs (i.e., those from Brusson [AIS pt. 123], and then, one step further along, those from Antagnod [just cited] some 8 km. up the Evançon), e.g.,

	Cogne	Antagnod	Brusson	Maisonasse
CAMPĀNA	kjempāŋna	kampantŋ a	kampātŋ a	kampā
COLLĀNA	kolāŋna	latŋŋ a	kolātŋ a	kolā
LĀNA	lāŋna	latŋŋ a	latŋ a	lā
BONA	bōŋna	bōŋŋ a	būtŋ a	bō
AUĒNA	aveŋna		averŋ a	avēŋ

³⁸ Pellis interviewed an Alpine guide who, notwithstanding his vigor and intelligence, provided conflicting testimony for the nasals. By glancing at the entire system, it seems legitimate to infer that the most autochthonous correspondence for -VNA was -ŋŋ|a following all vowels, including the most resistant to forward nasal transfer, i.e., e.g., fontŋŋŋ|a, forkelŋŋŋ|a 'forchetta', kantŋŋŋ|a, rontŋŋŋ|a 'they bray' (of donkeys), same as fontāŋŋ|a 'fountain', roŋŋŋ|a 'noontime rest of cattle'. Even the stonger nasals had coalesced in word-final position as -ŋ, e.g., atŋ 'years', aratŋ 'copper', fanŋ 'hunger', fanŋ 'smoke', also anŋŋŋ|a 'child', apreŋ 'he learns', poŋ 'bridge', veŋ 'wind'. Thus forms such as ehpēna 'thorn' < sēŋna, jarena 'flour' < FARĪNA likely represent an intrusive strain (recall that in many mountain habitats 'wheat-flour' was an import).

³⁹ The stage reached in, say, Novara di Sicilia, e.g., oŋŋa 'avena', fiēŋŋa 'finestra', kōŋŋu (≈ kaŋŋŋ) 'canale', kaŋŋŋa [= AIS II, 217 kadŋŋ] 'catena', kuūŋa 'corona' (AIS IV, 793), lēŋ 'lino', lūŋa 'luna'—data from Rohlfis (1966: 312), although I do not agree with his assertion that such forms represent "un antichissimo stadio del processo di nasalizzazione." Novara, isolated in the Peloritans, is the most Ligurian of Sicily's Gallo-Italian colonies (cf. Turtle 1976: 408), and thus has likely advanced from such Ligurian bases as *galŋŋŋ, *mulŋŋŋ, *raŋŋŋŋ to galāŋŋ 'hen', mulāŋŋ 'mill', raŋŋŋŋ 'grape' (data gathered 1975—cf. infra §4.4 for more conservative var.s gathered by Tropea 1963 [ALI II], e.g., ŋallēŋ 'hen', mmuiēŋ ~ mmuiēŋ 'mill', raŋŋŋŋ 'grape', although he too recorded a few var.s with a tendential palatal offglide, e.g., oŋŋŋŋ ~ oŋŋŋŋ 'earring', skēŋa ~ skēŋa 'back'). For the earliest documentation, v. Papaniti (1875: 281), where the local counterpart commented "lunŋŋŋ 'lontano'. Si pronunzia nasale, con un suono che difficilmente può esprimersi per iscritto: bisognerebbe sentirlo." (Cf. Tropea cit. lunŋŋŋ.) Although frequently warning about nasality, the correspondent never alludes to rhotacism—which, by Tropea's time represented a frequent source of variation (cf. infra §4.4, p.127).

CATĒNA
SPĪNA
COQ(U)ĪNA
UĪCĪNA

tšej̃|a
ēpēna
kjoččēna
vūzēna

tšēṽa
epē^a
kjoččē^a
vuzčē^{a-40}

At the term of this path of weakening, the heir to intervocalic N, i.e., *n* in onset position, may here and there effectively overtake that of word-final caudal N, where this latter has remained frozen, so to speak, as a light dorso-velar closure ⁴¹; thus at Ghigo di Prali (Val Germanasca—Pellis Aug., 1936—ALICAI, corrected by Geme 1970: 25-7) where *farīō* 'farina', *fejstō* 'fascina', *funtāō* 'fontana', *lāō* 'lana', *lūō plēō* 'luna piena', *sēve* 'cenerē', *tēve* 'tenero', ⁴¹ contrast with *biej̃*, *katīj̃*, *kāj̃*, *mežūj̃*, *paṽ*, *plej̃*, *tundīj̃*, etc. ⁴² Such bifurcating historical *fiuteres* explain why present-day dialects with radical nasal erosion may in their medieval stages document apparent nasal strengthening (as graphic gemination), e.g., OLIG. *lunna* versus mod. Lig. *lūṽ|a* (and Novara di Sicilia *lū^a*). ⁴³ Suffice it to say, in conclusion, that there are precious few dialects in which the disparate evolution of nasal codas versus nasal onsets has not occasioned widespread allomorphy. ⁴⁴

⁴⁰ Data from Waiser (1937: 28-9, 90 et passim). For Cogne, cf. also Fassò (1974: 236). Antagnod from Pellis ALI cit.; Brusson from ALS pt. 123 and Waiser (note that nasalization and nasal weakening do not appear to have reached the former high vowel originating from etymologic *i*; further note that, while Scheuermeier identified a light velar onset following caudal *n*, e.g., *laṽ* 'a wool', *senāj̃* 'a week', not so Waiser, e.g., *laṽ a*). For the fundamental trajectory *VnV* > **Vṽ|nV* > *Vṽ|nV*, as first articulated by Parodi (1902-05: 351-2—and then reiterated in his critique of Schädlel [1903] in *Studi Romanzi* 5 [1907]: 107]), cf. supra n. 37. (Simon's interpretation, that velar *n* is a Piedmontese intrusion in Val d'Aosta, is overly simplistic [1967: 83-4]).

⁴¹ This latter pair of proparoxytones imply **sēve* and **tēve*, wherein nasal spread and loss of closure preceded any syncope, thus rendering null the tendency to intercalate a transitional oral stop of the type **cendve*, **tendve*.

⁴² The same overtaking of caudal *n* by medial **Vṽ|* occurs in the Pyrenees, cf. Ronjat (1932: 2, 140); whence *n*-could be reintroduced on the basis of masc./fem. alternations of the sort: older *augun/angue* < **alīcūn|n|a* → mod. *augun/auguno*, *Gas-coun*/*Gascovo* → *Gascon*/*Gasconno*, creating the patchy distribution of variants typical of all morphological analogies. Likewise Galician *uj|a*, by analogy with masc. *uj*, replaced older *ua*.

⁴³ Thus in the 14th-c. *Laudario* of the Modenese Flagellants *cenna*, *cermame* 'sisters', *perma*, *plenna*, *romanne* 'it remains', *serenna* (Bertoni 1909: xxiv), or the 14th-c. civic statutes from Chieri (TO) where there are pairs such as *alcun/alcunna*, *bon/boonna*, *chun/chunna* 'each one' (m. & f.), etc. (Salvioni 1886: 348n1, 353), and likewise for OGen. *foran/foranna* 'outside, foreign', *loitani/loitanna* 'distant, far', *leom/leonna* 'lion(ess)', *sodan/sodanna* 'sudden' (Parodi 1901: 8, who observed 'frequente la scrizione *nn* per rendere il suono faucale *nn*').

⁴⁴ Even in the most advanced cases of nasal weakening, there remain vestiges of this basic positional dichotomy. For ex., in the Valtouranche, where intervocalic *n* has caught up with Romance final caudal **n* (and even overtaken it in the matter of denasalization, e.g., for higher front vowels LĀTĪNU|A *lē|lē^a* 'easy', PLĒNU|A > *plē|plē^a* 'full', as versus BONU|A > *bō|bō^a*, **brūn|ū^a* > *brō|brō^a* 'brown', GRĀNU|A > *grā|grā^a*, PLĀNU|A > *plā|plā^a*, SĀNU|A > *sā|sā^a*), the stronger nasals (NN, M, etc.), forming a later cohort, still attest to the coda's precedence over onsets, e.g., ANNU > *ā* 'year', *ĀERĀME*(N) *āā* 'copper', *ARĀNE* > *āā* 'spider', versus CANNA > *kāna* 'turned wooden cup', COLUMNA > *kolōn^a* 'post', **cutinna* > *kūwēna* 'pigskin, fatback', FEMINA > *fē^a* 'woman', IĪMA > *lōma* 'fille', PINNA > *pēna* 'pin, plug', PLŪMA > *plōma* 'feather', GMC. **spanna* > *ēpana* 'span', SOMNIU > *ser^o* 'sleep'. The same contrast also obtains outside main

2.4. Erosion of loci distinctions: patterns of nasal coda assimilation.

Anticipatory marking of oral articulators is one of the most chameleonic features of caudal nasals, which widely become homorganic with a following obstruent (cf. Ferguson 1975: 178, Lass 1984: 117). ⁴⁵ Less widely remarked, since it presupposes a more advanced degree of nasal transfer forward to the preceding vowel nucleus with concomitant diminution of the nasal coda's integrity (in order to foster lag or permansive assimilation), is the analogous assumption of the lip and tongue specifications of a foregoing vowel as in much of highland West Lombard and Ticinese; for ex., in the upper Val d'Antrona and the neighboring Val Bognanco: ⁴⁶

	Antronapiana	Lower V. Antrona	V. Bognanco
*attāne 'daddy'	(a)taṽ	(a)taṽ	ataṽ
CANE 'dog'	čap	keṽ	čaj
MANU 'hand'	maṽ	maṽ	maṽ
PANE 'bread'	paṽ	paṽ	paṽ
PLĀNU 'flat'	plaj̃	plaj̃	plaj̃
SĀNU 'healthy'	saṽ ⁴⁷	saṽ	saṽ
BONU 'good'	bom ⁴⁸	bun /boṽ	bun

stress: PANNU > *pā* 'cloth', but *panā* 'to dry', UANNU > *uā*, but *vanā* 'to winnow', as versus PANE > *pā* 'bread' and also *panā* 'baker', PLANU > *plā* 'flat' and also *plāōa* 'flatland, plain', from earlier **pāā* and **plāōa* with denasalization outside the main stress—cf. infra §4.4. (All data from Merlo 1934: 23-43, esp. 36n3, 38, 40). The same set of oppositions also obtains in Gascon and Galician.

⁴⁵ This assimilation is so commonplace and trivial as to surface rarely in standard orthographies, especially in phorosyncretic or Sandhi manifestations, e.g., It. *in chiesa* 'at church', *in compagnia* 'together', *in grado* 'able' (with [tʃ]), *in tempo* 'on time', *in testa* 'into one's head' (with [t]), *in malora* 'to Hell', *in pezzi* 'in pieces', *in piazza*, *in piedi* 'upright' (with [tʃ]), or Eng. *bread and butter* [brɛdmbʌtər], *by and by* [baɪ(ə)mbaɪ] (Jespersen 1904: 165-6). Ferguson, at the 1974 Berkeley *Nasālfest*, raised the tendency to the level of a universal:

The position of minimum contrast, in which nasal stops are most likely to be completely neutralized, is in clusters with a following oral stop. The normal shape of such clusters is homorganic, i.e., the nasal stop is fully assimilated to the place of articulation of the following oral stop. Homorganic nasal + oral stop clusters are among the commonest types of consonant clusters in human language, and clusters of this kind are also among the first consonant clusters to be acquired by the child learning his mother tongue (1975: 178).

⁴⁶ Data from Nicolet (1929). N.B. this lag or permansive assimilatory process is quite distinct from the sociolinguistically motivated generalization of fortis *-m* in other Romance dialects, e.g., Pèrigordine (Ronjat 1932: 2, 295), Trentine, Istriote (Pirano—Ive 1900: 79), or OPig. *beni*, *bom*, *cam*, *nam*, *paṽ*, etc., not to mention Sanskrit, Iranian, Latin (-M from **-n*), or, more recently, some dialects of Gheg Albanian (*ham*, *lem*, *shkëvem* corresponding to Tosk *bërë*, *lërë*, *shqyner* (with rhotacism of weakened, velar **-ŋ*)—for all of which, cf. Turtle forthcoming).

⁴⁷ Earlier anticipatory patterns still inhere in fixed syntagms, e.g., *paṽ* (or lower V. Antr. *paṽ*), but *paṽ* *bijāua* 'rye-bread', *paṽ* *ččē* 'baby-food' (of stewed, stale bread), *paṽ* *e vjṽ* (lower V. Antr. ...*vjṽ*) 'sorrel'.

⁴⁸ Widely neutralized phonologically and merged semantically with *bep* 'well, good' < BENE (cf. Nicolet 1929: 19-20, 110b), e.g., *bāzēpa sī* *bō bēp* 'bisogna essere ben buono'. Nicolet (1929: 50) provides a summary of the diffusion of **-ŋ* > *-m* after stressed *o/u*. For the likely trajectory BENE > **bēn* > **bōṽn* > **bōṽn* > **bōṽn* > **bōṽn*, cf. infra n.61. On the semantic side, although less extensively than in the South (cf. Rohlfs 1969: 243), in many northern Italian dialects, BONU

ignored by later writers (such as Merlo 1951⁵⁰), who apparently confounded linear sound correspondences with the phases and motives of the change. To begin clarifying these latter, one ought note that the process need not be a "package deal," such as that encountered at, say, Antronapiana (cf. sup.).⁵¹ There are two discrete forms of lag/permansive assimilation, which, although they presuppose the same fundamental backdrop of caudal nasal weakening (*-ŋ > *-ŋ), do not necessarily co-occur. On the one hand, the process of labialization is independently present in various scattered localities, e.g., Legnano (MI) *bùm* 'good', *fiùm* 'spine, vertebral column', *fupùm* 'grave (yard)', etc., versus *fiŋ*, *fiurŋ*, *viŋ*, *viŋ* 'un(o)',⁵²

as underlying, /bʊm/, whence were derived [bʊm], [bʊm], and the deriv. [bʊmín] (likewise the deriv. *paumét*, *paumúm* 'roll, bun' ← /paum/). Furthermore it implies that *-ŋ > -m occurred while the heir to Latin A still had a velar off-glide (PANE > *paʔŋ > *paum*) which was only there- after absorbed into the remaining, denasalized and lengthened *a: breaking as ae (*pa:m > *paem*). This latter stage is confirmed by all the more recently documented upper Engadine varieties I have seen, e.g., Gartner (1883: 86, 168, 182) for Samedan and S-chanf (CANE > *tye:m* 'dog', MANU > *mè:m* 'hand' (pl. *mè:mps*), PANE > *pè:m* 'bread'). The same process also occurred intervocally, with the same velar glide arising after A: thus Pallioppi cites *laema* 'wool' for *launa* < LANA, *raema* 'frog' for *rauna* < RANA (1857: 29-30), and thus Gartner *lè:ma*, *plè:ma* 'plane' PLANA (1883: 176, also 1910: 134), Walberg (1907: 14, 95) for Celerina *kulè:ma* 'collar, halter' < COLLANA, *fontè:ma* < FONTANA, *dzantè:ma* < GENTIANA, *plè:ma* < PLANA, Scheuemeier's interviews at Zuoz (191-20—AIS Pt. 28) netted similarly. In analogous fashion, a jod off-glide with front vowels palatalized *ŋ > ʃ, e.g., *fe:ŋ* 'hay' < *fe:ŋ < FENU, *ple:ŋ* < *ple:ŋ < PLÈNU, *se:ŋ* < *se:ŋ < SINU, *se:ŋ* < *se:ŋ < SERÈNU (Pallioppi 1857: 29), as did Latin long *i*, e.g., *cusdrŋŋ* [= *kuzdrŋŋ*] < CONSORŊNU, *farŋna* < FARŊNA, *fiŋŋ* < FĪNU (1857: 17). Where nasal weakening had not produced an underdetermined lateral *ŋ, the assimilatory processes did not obtain, e.g., in proparoxytones (ASINU > *é:zen* 'donkey', *co:c[ŋ]NU* > *kò:ŋen* 'red', *tu:ŋENE* > *djivè:ŋidjuna* 'young' (m. & f.), PECTINE > *pè:ŋen* 'comb') and outside the main stressed syllable (whence pairs such as *dum* 'gift' < DŊNU, but *dunèr* < DŊNARE, *farŋna* but *farŋnèr*, *mulŋn* but *mulnèr*, *tum* 'thunder' but *tunèr*).

⁵⁰ Treating the same phenomenon ca. 150 miles and many mountain divides to the East, Merlo noted "nel dialetto di Piè (fraz. di Iresivio [SO, Valtellina] la n ruscita finale si è palatalizzata dietro vocale palatale: *vij* 'fino', *céŋ* 'pieno', *teréŋ* 'terreno', *fèŋ* 'fieno', *béŋ*, *céŋ* 'piano', *ŋipŋŋŋŋ*" (1951: 1391n4—cf. further CANE > *čép* 'dog', MANU > *náp* 'hand').
⁵¹ For another well-documented case, Caveragno (Val Maggia), where /n/ → [m]/ó-#, *ú-#* versus [n]/á-#, *é-#*, *í-#*, *ú-#*—cf. Salvioni (1935 [posthum.]), also Nicolet (1929: 49-50) for summary of other locales, as well as Keller (1934: 219, 237). Most recently, the listing of suffixal variants compiled by Petri (1990: 66-79) for the VDSf, places in relief the want of congruence of -ŊNU > -ŋ with -ŊNE > -Ŋm; e.g., parts of the Blenio district have -ŋŋ, but none have *-Ŋm, parts of the Locarno district have -ŋŋ, but not *-Ŋm, whereas other neighboring areas have both; the same lack of overlap occurs in the Vallemaggia, and so forth. For the general retreat of such local developments in modern times, cf. Petri (1988: 160-4).

⁵² Whereas Busto Arsizio (MI), ca. 3 miles north, has a uniformly weak velar -ŋ, e.g., *bóŋ*, *fióŋ*, *fiŋŋŋŋ*, the same as *fèŋ*, *fiuét*, *vèŋ*, *vöŋ*—Marinoni (1955: [4-5]). In the Val Mäsino (a tributary of the Valtellina), Cataegio (SO) has *bagliüm* 'marito della balla', *cagnüm* 'verme che si forma nel formaggio stagionato', *cantüm* 'angolo', *colzüm* 'calzoni', *cuçüm* 'pigna, torsolo', *galüm* 'coscia', *lotüm* 'ortone', alongside *bazŋ* 'bacio', *foŋ* 'faina', *ledŋŋ*, 'factice, scorrevole', *manŋŋ* 'tovagliolo, and *grat* 'grano', *paŋ* 'pane' (data from Merlo 1951). From a completely unrelated area, cf. Val d'Avan *boum* 'good', *fauçum* 'falcon', *paoum* 'turkey', *posoum* 'poison' (< POTIÖNE)—Rohlf's (1970: 158). In Burgundy, Vielverge-Soissons (Côte d'Or—ALB Pt. 26) developed *á-m* from *-á-ŋ < -ŊNE and thereafter this stronger -m resisted while *-ŋ following other vowels was completely eroded, leaving thereby a stark contrast between *say*, *á* 'year', *šmè* 'road', *fwè* 'hay', *mèš* 'morning', *l mó rešá* 'le Mont-Roland', and *gššám* 'icicle' (83), *piššám* 'small pick' (313), *sa:žám* 'season'. Ronjat (1932: 295) identified the development in Périgord, and it must have

TONU 'thunder'	<i>trum</i>	<i>truŋ</i> /tròŋ	<i>truŋ</i>
-ŊNE (suffix)	<i>bastum</i>	<i>bastuŋ</i>	<i>bastuŋ</i>
'ankle, shin'	<i>garum</i>	<i>garuŋ</i>	<i>garuŋ</i>
'beggar'	<i>pitum</i>	<i>piuŋ</i>	<i>piuŋ</i>
'lung'	<i>pulum</i>	<i>puluŋ</i>	<i>puluŋ</i>
'stopper'	<i>stapum</i>	<i>stapuŋ</i>	<i>stapuŋ</i>
'hay-basket'	<i>švirum</i>	<i>šviruŋ</i>	<i>šviruŋ</i>
BENE 'well'	<i>beŋ/bòŋ</i>	...	<i>beŋ</i>
FENU 'hay'	<i>fòŋ</i>	<i>fèŋ</i>	<i>fèŋ</i>
PLÈNU 'full'	...	<i>pfej</i>	<i>pfej</i>
SERÈNU 'clear'	<i>saròŋ</i>	<i>saré</i>	<i>sareŋ</i>
FA(G)ĪN(A) 'marten'	<i>fuŋŋ</i>	<i>fuŋŋ</i>	<i>fuŋŋ</i>
LĪNU 'linen'	<i>lŋ</i>	<i>lŋ</i>	<i>lŋ</i>
MŌLĪNU 'mill'	<i>mulŋ</i>	<i>mulŋ</i>	<i>mulŋ</i>
PĪNU 'pine'	<i>pŋ</i>	<i>pŋ</i>	<i>pŋ</i>
PULLIČĪNU 'chick'	<i>pulžŋ</i>	<i>pulžŋ</i>	<i>pulžŋ</i>
SĪNU 'thorn'	<i>spŋ</i>	<i>spŋ</i>	<i>spŋ</i>
ŪČĪNU 'near'	<i>aužŋ</i>	<i>aužŋ</i>	<i>aužŋ</i>
ŪNU 'one/an'	<i>ŋ</i>	<i>ŋ</i>	<i>vŋŋ</i>

Inasmuch as this lag/permansive process affected only N weakened in word-final position, it still reverberates synchronically through contrasts such as /masch./: /fem./ (e.g., *awžŋ/awžna* 'neighbor', *āžŋ/āžna* 'donkey', *béŋ/bòna* (pl. *bom*) 'good', *ipŋ/ina* 'one' ('uno/una'), *pjaŋ/pjana* 'flat', *spŋŋ/spina*) or between primitive and derivative (e.g., *paŋ* → *panéra* 'bread-trough', *trum* → *trunà* 'to thunder'). Salvioni (1886: 215) had already understood the mainspring of such allophony, although he voiced a sage diachronic misgiving about the palatalization following A,⁴⁹ which was

has usurped the adverbial rôle of BENE, e.g., Friul. (Pesariis *vóol bóŋ*, Collina *vóos/ bóŋ* 'vuol bene'—ALI 1383, ASLEF Tav. 454). The syntagm *bon ben* / *ben bon* 'many', 'much' is also frequent from Aosta to Emilia (and in Gallo-Sicily), e.g., *Ayas baubèŋ de fomèle*, Parm. *bombé* 'domi' 'many women'. For BENE as a quantifier ('many, much') in Gallo-Romance, e.g., *bien de l'argent* 'lot of money', cf. most recently Gaatone (1990).

⁴⁹ After noting that n following word-final, stressed nuclei, which generally weakened to -ŋ, in these areas "si riduce, dopo vocal labiale, a -m: *bom*, *prasm*, *resom*, *padrom*, *pitom*, *bondom*, 'rapa' ... [e] s'altera costantemente in -ŋ dopo vocal palatale, talvolta anche dopo *ü* e *ö*, e più di frequente dopo *a*: *vŋŋ*, *piŋŋ*, *fŋŋ*, *vesŋŋ*, *ladŋŋ*, 'agile', *fèŋ* 'fieno', *beŋ*, *sareŋ*, *tareŋ*, *pièŋ*, *teŋ* < TENIT, *čerŋ*, *grenŋ*, *pièŋ* 'piano', *vŋŋ*, *nissŋŋ* ..." and specifying them to be "prodotti che... dipendono manifestamente dalla qualità della vocale che precede", he added: "L'a così vorrebbe *ŋ*, che certo è la nasale che più gli si confaccia; e in realtà si accompagnano il più delle volte." (Cf. also Salvioni 1907: 724-5.) One of the first synchronic descriptions of the lag or inertial lip-rounding process is likely that provided by Pallioppi (1857: 59) for the upper Engadine (P. was from Celerina):

l'n finel u precediànt al -s, resp. -a terminativ... pronunzains dopo ün u, iu et au scu m; p. ex. bun, buna, buns... paun, pauns... pronunziescha... bum, buma, bums... paern, paerns.

This rule shows that the masc. sg. realization [bʊm] (< *bʊŋ) had been effectively reanalyzed.

intermediary glide was jod, as attested in Old French graphs *main*, *pain*, *sain*.⁶¹ Such a divergence, pivoting upon the point of development of the weakly-positioned caudal nasal, splits dialects only a few km. apart; cf. in the Valtellina:

	Cevo (SO)	Teglio (SO)
CANE	kē < *kaī < *kaīn	kā < *kãw̃
DĒ-MĀNE	dumē < dumāī	dumā < *dumãw̃
MANU	mē < *māī < *māin	mā < *mãw̃
PANE	pē < *paī < *paīn	pā < *pãw̃
PLĀNU	pĕ < *pĕāī < *pĕāin	pĕā < *pĕãw̃62

Thus I would maintain that *á* and *é* did not of themselves occasion lag nasal palatalization, but only *i*, as it could come to be present in falling diphthongs **aj* **ej*, and then *i*.

A bit of collateral proof derives from a few archaic Burgundian dialects in which the process of lag nasal determination by a falling diphthong (palatalization by **ej* and rounding by **aw*) still figures as part of a

by the early 14th C. [Pope 1932: 400-01, 1934: 442], although *ò* was already on the retreat by Rousset's day [1891: 343], its echoes linger in a few early English borrowings, e.g., *aunt*, *gaunt*, *haunch*, *haunt*, *lauch*, *lawin*, *paunch*, *pawn*, *vauht* (and cf. late Mid. Engl. spellings such as *chonge* 'change', *penonce* 'penance')—Wright (1928: 102). For southwestern France, cf. Cremona (1954) and Nègre (1965). Where the velarization of -N- also occurs intervocally, so, too, may be the development of a velar glide (e.g., Bergün in the Grisons, also in Val d'Aosta—Cerlogne 1907: 4, 9).

⁶¹ And many northern Lombard locales, e.g., Gambaogno *mĕj*, *pĕj*, *sĕj* (with subsequent further weakening and velarization). Such an intercalated *ʃ* glide has arisen broadly in archaic western islets which still maintained an alveodental *n*, in the midst of more innovating areas with a velar *ŋ*, e.g., *fontana* 'fontana' (as versus *fontãna*), etc. identified as rustic pronunciations at Cairo Montenotte (SV) by Parry's informants (1984: 55, 59-61, where their wider distribution is also summarized, e.g., at Montezemolo [CN], S. Benedetto Belbo, Niella Belbo [CN], Cortemilia [CN], Cengio [SV], etc., as against larger flanking zones with velar *ŋ*). As further evidence of palatalization first by jod, compare the results in the dialect of Mòllia (VC, in the Valsesia, recorded by Pellis 1937, ALI Bb 7), with velar-*ŋ* after *í*, e.g., *kađiŋ* 'catino', *kamín* 'CAMINO', *liđiŋ* 'lettino', *mađniŋ* 'macinino per caffè', *muđiŋ* 'molino', *uđiŋ* 'orecchino', *viđiŋ* 'vicino', *vŋ* 'vino', but, since **é* became **ej* > *oj* (e.g., *pe[n]su* > *pojs*, *plu* > *pojl*, *sĕbu* > *sojŋ*, *undu* > *uöjŋ*), the result **bĕjŋ* > **böjŋ* evolved to > *böj* 'bene', *fojŋ* 'fieno', *vojŋ* 'sereno' (= 'clear, serene' [of weather]), and, since morphologic **i* was anticipated, the process also occurred with *A* in the plr., *kaŋ* > *köp* 'dogs', *maŋ* > *möp* 'hands' (compare *tant* > plr., *fojnt* 'molti' via **fejnt* from **tajnt* > *tantŋ*, *al-kamp* > *doi köjŋmp* 'two fields' from **kejŋmp* < **kajmp* for *kampi*), and likewise with **o*, *m-bütŋg* > *doi bütojŋ* 'two buttons', *m-muŋ* > *doi-möjŋ* 'two bricks', *pađrójŋ* 'bosses', *ravicojŋ* (plr.) 'rape greens' (compare for the metathesis of -i, **n-huñc* > *i-fojñc* 'mushrooms', *al-punt* > *doi-pöjnt* 'two bridges').

⁶² Data from Merlo (1951: 1378-9, 1391). For the velar intermediary at Teglio, cf. *sãkã* < SANGUE(N) 'blood'—Merlo (1951: 1379). As an inverse proof that **-ajn* stands behind -*ajŋ* (corresponding with -ANE/-ANU), where one finds the velarized vowel *ò*, *ò* < **õw̃*, one also finds a velar nasal or some weakened descendant thereof, e.g., *köjŋ*, *möjŋ*, *pojŋ*, but never **köjŋ*, **möjŋ*, **pojŋ*. In dialects with a sigmatic plural, the divergent realizations of **-n* could arise as a morphophonologic alternation, e.g., *čan* > plr. *čans*, *maŋ* > plr. *mans*, whence two differing offglides accordingly, as documented in Bifrun (ca. 1500—a native of Samedan): *manŋ* (= [mãŋʃ]) 'hand' versus plr. *mans* (= [mãŋsʃ])—cf. Mourin (1964: 195).

syllables (*pajs* 'peso', *paivre* 'pepe', *saj* 'sete', *tajna* 'tela'), in order to account for the phenomenon.⁵⁷ I would go so far as to affirm that -*n* following stressed *é* elsewhere also descends from an intermediary falling diphthong. For ex., it seems no accident that palatalized -*en* (*bep* < BENE, *fep* > FENU, *plep* < PLĒNU, *velĕp* < UENĒNU, etc.—Clauzetto ALI Agri9—Pellis 1926-29) crops up in western Friulan, precisely the area with AĈETU > *ažĕt* 'vinegar' (versus koiné *lajsĕt*), CAELU > *čĕjl* 'sky' (vs. *cil*), DECE > *dĕjs* 'ten' (vs. *dis*), DIGITU > *dĕjt* 'finger' (vs. *dĕt*), FRIGIDU > *frĕjt* 'cold' (vs. *frĕt*), NIUE > *nĕjŋ* 'snow' (vs. *nĕf*), PICE > *pĕjs* 'pitch' (vs. *pĕs*)—cf. Marchetti (1967: 49, 51) and Iliescu (1972: 41, 55, 71).⁵⁸ The change has appeared recently among some speakers of contemporary Bolognese, e.g., Coco (1970: 13) cites without comment *vrĕjŋ* < SĒRĒNU, *vlĕjŋ* < UENĒNU for earlier *vrĕjŋ*, *vlĕjŋ* (as in Mainoldi 1967: 156b, 181a, and, a generation earlier, Ungarelli 1901: 258, 291, Gaudenzi 1889: 32, with *vrĕjŋ*, *vlĕjŋ*, but cf. Comacchio *vlĕpŋ*—AIS Pt. 439, ALI Cfi0—Pellis 1928).⁵⁹

The second ingredient in our account, having thus brought the importance of jod into relief, requires postulating that same palatal glide between stressed *à* and *n*. Here we are succoured by the oft-observed tendency for a (nasalized) glide to develop between *à* and caudal *n* (cf. Pellegrini 1961). In terms of relative chronology, if the nasal had already weakened to *ŋ*, the homorganic glide was velar, e.g., **kãw̃ŋ*, **mãw̃ŋ*, **pãw̃ŋ*,⁶⁰ but if -*n* still maintained its alveodental place of articulation, the

⁵⁷ Compare from the neighboring town of Priocca (CN) the presence of such a diphthong in the context of a nasal coda before a surd, e.g., *saĩnt* 'cento', *pulãina* 'polenta', *surimãĩnt* 'proposta' (lit. 'sortimento'), *tãĩmp* 'tempo', corresponding with Castellinaldo *saĩnt*, *pulãnta*, *surimãĩnt*, *tãĩmp*—Toppino (1902: 522n4, 1913: 26). A similar suggestion, i.e., that a diphthong **ej* was responsible for palatalizing velar **-ŋ*, was offered fleetingly by von Ertmayer (1902: 448: **ĕjŋ*, **ĕjŋ* [aus -*ĕjŋ*]). Earlier still, Rousset (1891: 221-2), having observed the palatalization of *n* in scattered N. W. Italian areas, noted: 'quelque chose d'analogue se remarque dans la prononciation de mon père pour CANEM et CAMNUM... [>] *ĕjŋ*, *ĕmĩŋ* (ou *ĕj*, *ĕmĩŋ*)... je suppose donc pour CANEM... **ĕjajŋ* au début de l'évolution.'

⁵⁸ Among the same descendants of immigrants to Rumania from Barcis and Maniago with -*en*, Iliescu cit. also documented palatalization following *i*, e.g., *fĕne* > *fĕjŋ*, *mũlĕnu* > *mũlĕjŋ*, *ũtũnu* > *vũjŋ*.

⁵⁹ For the reduction of the diphthong *ai* to *á* among younger speakers, cf. Coco (1970: 13n16, 20). Note that only word-final, coda *ŋ* was susceptible to this palatalization; medial *n* > -*n* does not participate, e.g., *auŋna* < AUĒNA, *uŋna* < UĒNA. And, note further, even this insertion of -*n* is a recent analogical result of the vowel merger of Coco's generation (*ai* > short *a*); older authors (Mainoldi 1967, Trauzzi & Ungarelli 1901), who still maintained a diphthong, have no nasal weakening, e.g., *avãina*, *vãina* ap. Mainoldi (1967: 15b, 178a). For the absence of forward nasal transfer onto a bimoraic nucleus, cf. infra §4.3.1.

⁶⁰ Whence such Romauntisch forms as Samnaun *čãun* 'dog', *dũmann* 'tomorrow', *grãun* 'grain', *maun* 'hand', *paun* 'bread' (Ritter 1981: 60, 311-13)—from earlier **čãw̃ŋ*, *mãw̃ŋ*, etc., or the frequent northern Italian cognates *köjŋ*, *möjŋ*, *pojŋ* (whence *koj*, *moj*, *poj*), especially frequent around the Lombard periphery, e.g., *Olginate*, *Lezzeno* (CO), *Galliate*, *Oleggio*, *Treccate* (NO), *Lomello*, *Voghera* (PV)—based upon Ugo Pellis' ALI data. Huonder (1900: 22n1) was among the first to reconstruct an intermediate velar *ŋ* to account for *auŋ* < AN: 'ŋ besteht heute noch in vielen Mundarten Graubündens und dürfte früher wohl allgemein üblich gewesen sein.' For the reaffirmations of stronger -*n* (and in some locales yet stronger -*m*), cf. Tuttle (forthcoming). Since this velarized variant was characteristic of northwestern France (*auŋ* for *an* in Anglo-Norman)

271), and can be found synchronically in the differing degrees of nasalization associable with various vowels as in the Breton of Plougrescant (Jackson 1961: 39f). Ruhlen (1975: 340), working with a hundred languages from fifteen different stocks, reached a like conclusion:

Low vowels are more susceptible to vowel nasalization than mid-vowels, which in turn are more susceptible than high vowels. Consequently, vowel nasalization characteristically spreads from low through mid to high, and vowel denasalization reverses this process, moving from high through mid to low.⁶⁶

If, as an adjunct to the correlate of height or closure, we were pressed to add a specification of place, based upon Romance data, it would be that back vowels more readily absorb nasality than front—if for no other reason, then because they foster velarization of the non-velar nasals, which will momentarily be shown as a characteristic intermediary phase in forward nasal transfer and nasal weakening. For the present, given a trajectory of voiced nasal weakening $VN > \tilde{V}N > \tilde{V}\eta > \tilde{V}\eta > \tilde{V} > V$, to claim vowels more homorganic with η would better accommodate (and even accelerate) the process does not seem extravagant. In the case of the mid back vowel before N, the raised dorsum coupled with a relaxed velum already produces resonances identified as \bar{o} or $\bar{o}\eta$. Recall that \bar{o} is far less different perceptually from o than are other nasal vowels from their oral counterparts—cf. Wright (1975: 371).⁶⁷ Within the Gallo-Italian bloc, this

⁶⁶ Twoscore years earlier, Pope had deduced this sequential relationship for Middle and Modern French, wherein “the process [of denasalization] began with the vowels last and least strongly nasalized, i.e., the high vowels *i* and *ü*... and ended in Early Modern French with the low vowels *a* and *o*” (1934: 171). It seems opportune to point out here that, while I agree with Chen’s corroboration (based upon Chinese dialects) of Ohala (and, unbeknownst to him, of Roussetot), that “nasalization spreads from [low] to [high] vowels” (1975: 88ff), Romance data do not support his corollary that “denasalization follows a first-in first-out pattern” (ibid. 97)—details in Turtle (forthcoming). Compare, most obviously, the French developments just cited. For a contemporary intermediate phase on Italian soil, compare the Franco-Provençal of the Valtournanche (data from Merlo 1934: 23-43), where denasalization has occurred in the etymologic -VNA sequence for all vowels save \bar{a} , \bar{o} and \bar{o} (< \bar{u} before N), e.g., COLLANA > *kolāa* ‘collar for mule’, GRANA > *grāa* ‘bead, berry’, LANA > *lāa* ‘wool’, RANA > *rāa* ‘frog’, TANA > *tāa* ‘den, sty’, BONA > *bōa* ‘good’, NŌNA > *nōa* ‘noon’, BIS + dim. suff. **-ōna* > *bēsōa* ‘twin (girl)’, **brīna* > *brōa* ‘brown’, **katā* + *ūnæ* > *kā:ōæ* ‘each of them’ (fem.), JĒŪNA > *gōa* ‘fast’, as versus denasalization in AUĒNA > *avēa* ‘oats’, PĒNA > *pēa* ‘pain’, PĒNA > *plēa* ‘ful’, STRĒNA > *strēa* ‘engagement present’, and COŪ(U)ŪNA > *čōzēa* ‘kitchen’, LATĪNA > *lēa* ‘easy’ (adj. fem.), SPĒNA > *spēa* ‘horn’, TĪNA > *tēa* ‘vat’, UČĪNA > *vōzēa* ‘neighbor (woman)’—the correspondences with \bar{a} have further var.s *ēa* ~ *ōa* (“pronunzia oscillante da persona a persona”—Merlo 1934: 32n3, also 23n2). (Merlo’s transcription for length, V \bar{a} , has here been rendered V̄. Likewise in the upper Diois (Drôme)—Ronjat 1932:286.)

⁶⁷ It is such greater acoustic proximity which accounts for the toleration of assonances in *o*/ \bar{o} in Old French verse fully a century after the oral: nasal opposition had excluded them for *e*/ \bar{e} —cf. Straka (1955: 253-7). As for the resistance of \bar{a} (which boasts the tightest velic closure as its concomitant) vis-à-vis \bar{u} , von Ertmayer (1902: 439) noted for western Trentine “Wegen der Entnasalierung [by implication of other stressed vowels before word-final η] beachte man *win* [‘wine’], *pin* [‘full’]—with closing in most of N. Italy by foregoing *jod* (**ppi* < *pi*-), *fin* [‘fine’], *kamin* [‘road’] in Molveno” (wherein the final -*nn* represented alveodental [r- η]).

relative chronology can be recovered from the staggered spread of nasalization and nasal weakening within small domains, e.g., in the Valtellina, compare conservative Bormio in the upper valley, with Teglio some 50 km. downstream, as versus the advanced state at Albosaggia, just across the Adda from the provincial capital of Sondrio (data from Merlo 1951):

	Bormio	Teglio	Albosaggia
CANE ‘dog’	<i>kəŋ</i>	<i>kā</i>	<i>ka</i> :
DĒ-MĀNE ‘tomorrow’	<i>duməŋ</i>	<i>dumā</i>	<i>duma</i> :
MANU ‘hand’	<i>məŋ</i>	<i>mā</i>	<i>ma</i> :
PANE ‘bread’	<i>pəŋ</i>	<i>pā</i>	<i>pa</i> :
BONU ‘good’	<i>bəŋ</i>	<i>bū</i>	<i>bu</i> :
PRĀHENSIŌNE	<i>prezōŋ</i>	<i>prezū</i>	<i>prezū</i> :
BENE ‘well’	<i>bəŋ</i>	<i>bē</i>	<i>be</i> :
FĒNU ‘hay’	<i>fəŋ</i>	<i>fē</i>	<i>fe</i> :
TERRĒNU ‘ground’	<i>terəŋ</i>	<i>terē</i>	<i>tere</i> :
LĪNU ‘flax, linen’	<i>liŋ</i>	<i>liŋ</i>	<i>li</i> :
MŌLĪNU ‘mill’	<i>mulŋ</i>	<i>mulŋ</i>	<i>mul</i> :
UČĪNU ‘NEAR’	<i>veziŋ</i>	<i>viziŋ</i>	<i>vizi</i> :
UĪNU ‘wine’	<i>viŋ</i>	<i>viŋ</i>	<i>vi</i> :
NĒCŪNU ‘no one’	<i>negūŋ</i>	<i>negūŋ</i>	<i>nigū</i> :

The final column of data from Albosaggia (one could have equally used Sostila [Val Fabiolo] or the Val d’Aigna of the Armisa⁶⁸) in which the failing echo of nasality has left a lengthened vowel, hints at a still more critical vocalic parameter of nasal weakening which now needs to be addressed.

3. *Accentuo-syllabic determinants in nasal evolution: rôle of the timing axis.*

While the various vowels’ acceptance of nasality has just now been related to velic opening versus velic closure as concomitants of their production, this factor, the same as all those which have thus far been illustrated, may be overridden by another, one reigning supreme among all extrinsic determinants throughout the Romance domain. This pivots on an accentually-induced distinction between vowel nuclei which forces us to introduce a supervenient corollary along the temporal or prosodic parameter. Stressed vowel nuclei admit significant nasalization well before otherwise identical unstressed nuclei. Such anticipation or forward transfer of the nasal feature enhances the timing weight of the nucleus so that, where a

⁶⁸ Cf. Valsecchi Pontiggia (1960)—for a copy of which I wish to thank the “Pio Rajna” Library of Sondrio.

maximal bimoraic canon is in effect for stressed syllables, there alone will forward nasal transfer or nasalization—here understood as the first historical phase of nasal weakening—be favored. Inversely, since unstressed syllables will ideally have a monomoraic nucleus, these will prove less apt to receive anticipatory nasality.

3.1. Resistance of nasals in proparoxytones.

Thus at Albosaggia the final nasal, so radically eroded following the main-stressed vowels (cf. supra CANE > *kà*; FENU > *fé*; UINU > *vi*), remains firm following an unstressed vowel, e.g., CÀLIGINE > *kalíz-en* 'soot', FRAXINU > *fràsen* 'ash-tree', IUUENE > *gúen* 'young', PECTINE > *péç-en* 'comb' (Merlo 1951: 1393-6). Just over the Orobian watershed, Bergamasco shows an identical asymmetry: alongside CANE > *kà*, CARBÖNE > *karbù*, MÖLINU > *müli*, etc., compare such proparoxytones as ASINU > *àzen* 'donkey', CÀLIGINE > *kalözen* 'soot', CARPINE > *kàrpen* 'hornbeam', FRAXINU > *fràsen* 'ash-tree', INCÜDINE → **incüdüine* > *incözen* 'anvil', IUUENE > *züen* 'young(man)', PECTINE > *pèten* 'comb', and so forth. This sharply differentiated eastern Lombard evolutionary pattern carries to the west shore of Lake Garda, where Lombard currently meets Veneto, e.g., Salò BENE > *be*, BONU > *bu*, CANE > *ka*, versus preservation in *àzen*, *kàrpen*, *pèten*, *rùnden* 'rondine' ('swallow'), *sànguen* 'dogwood, wild cornel' < SANGUINE (data from Bonfadini & Razzi 1984).

The mention of Veneto, however, immediately lays the accentuo-moraic explanation open to an historically-motivated objection. The lowland Veneto koine opposes heavily nasalized forms such as *béty*, *bōty*, *kāty*, etc. with apocope, to proparoxytones in which apocope has not occurred, e.g., *anküzene*, *àzeno*, *fràseno*, *fresküzene* 'cradle-cap', *kalüzene*, *kàrpano*, *kòfano* 'coffer' (also 'Noah's ark' [shellfish] < COPHINU), and thus *n* still forms an alveodental onset. The undulatory stress pattern of early and conservative Romance dialects granted greater accentual relief to the counter-tonic final vowel than to that immediately postonic, thereby preserving it longer in the face of advancing apocope after resonants. (Compare the analogous preservation following R/L, e.g., Ven. *mèrcore* 'Wednesday', *pépare* 'pepper', *sénare* 'ashes' [versus *fior* 'flower', *mar* 'sea'] or *sántolo* 'godfather', *stròpolo* 'plug, stopper' [vs. *sal* 'salt', *sol* 'sun']). Thus the longer resistance of final *-e/o* in proparoxytones⁶⁹ would have combined with the open-

⁶⁹ The greater resistance to apocope in proparoxytones may also be inferred by the divergent evolution of *-NE* in Old Gallego-Portuguese, where erosion of intervocalic *-N-* overtook that of word-final **n* (cf. supra §2.3), e.g., OPtg. *ben*, *can*, *pam* versus *chantaçee* [= *tsantãzêe*] < PLANTÁGINE, 13th-c. (*blomes* < HOMINES (not **homes* or **homs*), *vermes* (Petro Menino) < **vermies*, which exhibit the same development as *-NU* (recall that *-U* was more resistant to apocope than *-E*) and *-NA*, e.g., DIAGONU > *diagoo* FRAXINU > *fraxeno* (in 1265) > *freixo* > mod. *freixo*,

syllable preference or onset-forming principle of "rightward syllabification"⁷⁰ to have made the final *-n*'s of former proparoxytones a far later or more recent cohort of word-final nasal codas. And this discrepancy in their relative chronology might be thought to suffice in reconciling the forementioned eastern Lombard contrasts of the type *àzen*, *anküzen*, *fràsen*, with *be*, *bo*, *ka*, etc.⁷¹

3.2. Alternative proofs of the accentuo-moraic constraint on nasalization.

As discussed above §2.2, in the same eastern Lombard dialects just cited, the *N* of nasal + voiceless obstruent caudal sequences underwent radical forward transfer of nasality and eventual deletion, e.g., CAMPU > *kap*, DENTE > *det* (pl. *deç*), MONTE > *mut*. But such anticipated, shifted nasality (with subsequent weakening of the nasal consonant) could only occur with the primary-stressed nucleus: thus Bergam. *kap* 'field', but *kampègna* 'broad field, countryside' and *kampèr* 'watchman' (over fields), *formét* 'grain' < FRUMENTU, but *furmentù* 'corn, maize' (+ *-ÖNE*), *zèt* 'people' < GENTE, but *zentàja* 'riff-raff, trash' (+ *-ÀLLA*), *mut* but *mutàgna* 'mountain' (+ *-ANEA*),

GENINU > *gemo*, **aràmenu* (for ERÀMINE) > *aramio*, **càimenu* (for CULMINE) > *cumio*, **xàmenu* (for EXÀMINE) > *e(n)hamio*, ORPHANU > *orfano* > *orfo* > *orfoo*, RAPHANU > *rabao*, TERMINÖS > OGal. *termios*, OPtg. *termbos*, **vimenü* (for UIMINE) > *vimio*, the same as FEMINA > *femea*, LAM(M)INA > *lamea* > *lamia*, LEGÜMINA > *legümea*, SABANA (pl.) > *savaa* (15th c. *Cron. Frades Menores*), **serotina* > *serodea*. (Variants of the *aramio*, *cumio* type occur alongside the neuter pattern with accusative the same as nominative, ERÀME(N) > *arame*, CULME(N) > *cume*, etc.—cf. García de Diego 1909: 52, Lindley Cintra 1958: 265-6, 314-5.) For Castilian, the data is less decisive due to the advent of syncope and restructuring of the type *alambré*, *cumbre*, *enjambre*, *estambre*, *hambre*, *lumbre*, nonetheless the contrast of *cuévano*, *uéfano*, *rábano*, *zángano* 'drone', with *borrén* < BORRÁGINE, *herrén* < *ferren* < FARRÁGINE, *hollín* < FULLÍGINE, *llantén* < PLANTÁGINE, suggests apocope in *-NE* preceded that in *-NU*.

⁷⁰ As onsets these same nasals are firmly maintained, e.g., Bergam. *karbù* 'coal' < CARBÖNE, but *karbuner* 'charcoal-burner' < CARBÖNARIU, *müli* 'mill' < MÖLINU, but *möliner* 'miller' < MÖLINARIU, Albosaggia *müli* vs. *müliné*, Salò *müli* vs. *müliner*, and so forth.

⁷¹ In western Lombard, the contrast is expressed through the resistance of a firmer, alveodental nasal (with relatively slight forward nasalization) in proparoxytones, e.g., standard Milanese *àzen*, *càrpen*, *èben*, *ebano*, *fràsen*, *òmen*, *òrfen*, *òrghen*, *pèçen* 'comb', *tràpen* 'drill', *vèrmen* (Salvioni 1884: 96). The same diaphasic distinction can be recovered in peripheral Lombard areas to the east, e.g., Valvesino *àzan* 'donkey', *àrzán* 'dike, levee', *ègan* 'elderberry' (Sambucus ebulus), *rèndan* 'swallow'. Likewise for Emilian, cf. Parmigiano with *bò*, *göfi*, *trò*, etc., versus *àzen*, *àrzen*, *garófen*, *góven*, *òrfen*, *òrghen*, *péten*, *tràpen* and the comment of Boselli & Piagnoli (1904: 53, 55) to the effect that "la nasalizzazione nelle parole proparossitone non ha avuto agio di compirsi." In Old and western Catalan, **-n* in proparoxytones resisted enough longer than that immediately following the main stress (BENE > *bé*, BONU > *bò*, CANE > *cà*) for it to be shored up by the coronality of the plural marker *-s*, producing a morphophonologic alternation of the sort: ASINU > *ase* → pl. *àsens*, BORRÁGINE > *borrage* → pl. *borragens*, COPHINU > *cove* → pl. *covens*, FRAXINU > *freixe* → pl. *freixens*, HOMINE > *home* → pl. *homens*, IUUENE > *jove* → pl. *iovens*, LENDINE > *leme* → pl. *lemens* 'lice' (ca. 1400), *llemens* (1647—cf. DECL/Cat. 5, 144), MARGINE > *marge* → pl. *margens*, ORDINE > *orde* → pl. *ordens*, ORPHANU > *orfe* → pl. *orfens*, etc.—cf. Badia i Margarit (1951: 225, 250), Coromines (1971: 302-4, 313-4), Rasico (1982: 219, 229, 231). The pattern far outlasted sporadic medieval instances of *cans* < CANES, and even attracted other lexemes into its orbit, e.g., *llevens* for *lleves* 'pot-hooks' (cf. DCVB 6, 980b, DECL/Cat. 5, 189).

put 'bridge' < PONTE but *puntit* 'projection, promontory' < PONTILE (Vegetius), *tat* 'so much' < TANTU but *tanti* 'a little bit' (+ -INU), *tep* 'weather' < TEMPU, but *tempésta* 'squall, storm' < TEMPESTA(S). The same situation obtains at the other points just cited, e.g., Salò, the Valvestino, Albosaggia in the Valtellina. Further up the Adda from this latter town, at Teglio (cit. supra §2.4, 2.5), where the weakening of N before stops remains incipient, the process occurs only with primary phrasal stress, e.g., *kwãt*, *tãt* "ma tant, kwant nella protonia sintattica," e.g., *tant* *gãk* 'tanto bianco' (Merlo 1951: 1379n3). The superior value of this data rests in the immutable coda rôle of N; no "rightward" cleavage with an historically more resistant final vowel as in the proparoxytones (the Ven. *rùzene* 'rust' < AERÜGINE type explaining Lomb. *rùzer*) can compromise the attribution of cause.

In those few dialects in which forward transfer and nasal weakening advanced to intervocalic position, a limitation to a foregoing stressed nucleus provides equally sound evidence. For ex., in many of the nasalizing Sardinian dialects, such transfer and nasal loss did not advance outside the main-stressed nucleus, e.g., Villanova Truschedu **angòni* > *angòt* 'lamb', but *angonéddu* 'little lamb', **trãnu* > *trãt* 'earthenware pan', but *trãncèddu* 'little...' (Contini 1987: 457 with further ex.s from other locales).

3.3. More rapid loss of nasality in unstressed nuclei as negative evidence.

Having just sought evidence of a stress-to-length relation in the greater stability of the caudal N following an unstressed vowel, I believe an inverse proof of the same correlation can be found in the fugitive, unstable nature of such nasalization where it did occur. In dialects where anticipated nasality was transferred forward even onto the unstressed nuclei of proparoxytones, these vowels shed that excessive weighting rather quickly. The Ligurian group provides a good case in point. A few conservative varieties still preserve -*Vne*, a very rare few intermediate types show -*Vŋ* (although this is implicit in the 13th-c. docs., e.g., *rusen/rusem* in the Anon. Genov.—cf. Tuttle 1991), while the innovating majority has a straight oral vowel (none documented in the VPL show the intermediate phase *-*V*); thus CÀLIGINE 'haze, soot' > *kuizène* or *ku(r)ize*, but not **ku(r)izèŋ*, INCÜDINE > **incüGINE* > *anküžè/ankize*, but not **anküžèŋ* (even though nasality has not been eliminated from the *bèŋ*, *büŋ*, *kãŋ* type).⁷² Likewise various Sardinian

⁷² Frequent variants in -*u*, e.g., *azu* for *àze* < ASINU, *buraxu* for *buraxe* < BORRÄGINE, recall the neighboring Piedmontese type, where an extremely weak, underdetermined vowel likely acquired velar color before *-*ŋ*, i.e., ASINU > **azəŋ* (cf. *asen* in the Serm. Subalpini) > **azəŋ* > **azu* > *azu*. Cf. for Piedmontese, AGGERE → **argine* > *eru*, CÀLIGINE > **caligine* > *calazu*, CAPRÄGINE > *cravazu*, CARDINE > *giuru*, LUMINE > *lumu*, PECTINE > *penit*,

dialects, having passed through the phase just cited (§3.2) and having carried forward nasal transfer onto unstressed nuclei, proceeded to denasalize these alone, e.g., ACINA 'grape' > *ãrã* > *ãrã*, Camp. *kãvuna* 'bill-hook' (DES 324b) > *kãvã* > *kãvua*, FEMINA 'woman' > *femmã* > *femmia* (Wagner 1941: 63 [= 1984: 110-11], Contini 1987: 456-7, and infra §4.4). These last Sardinian data anticipate several processes yet to be discussed, most saliently the extension of nasal transfer to unstressed nuclei—a phase documented in a relatively small geographic subset of the other phenomena and following them in terms of relative chronology. From the vantage of seriation or historical rule-ordering, instead, there occurred intervening stages and constraints which require that one now begin to integrate another gamut of factors intrinsic to the nasal consonants themselves.

4. Intrinsic determinants.

If the foregoing stand as conspicuous external determinants of nasal evolution, they are flanked by intrinsic differences within the nasal inventory possessed of no less decisive diachronic effects. *Grosso modo*, the more complexly-articulated nasals boast a phonetic timing advantage in Italy, alongside their greater phonological relief in terms of markedness.

4.1. The "m *ghaiarda*"⁷³ in northern Italy.

A bit over a decade ago, I was puzzled as to why apocope around Fanzolo (TV), which deleted *-*ej* *-*o* following *r*, no less than after *r*//, did not take place after *m* (which seemed to figure in the same feature class—or, inversely, moving a couple of km. northeast of downtown Fanzolo, towards Barcón, why it took place only in areas which apocopated after complex word-final codas as well (cf. Tuttle 1981-82: 20).⁷⁴

PLANTÄGINE > *piantazu*, PRÜRIGINE > *prüzu*, **vermine* > *vermu*. This evolutionary pattern, present as far south as the Val di Magra, has heretofore been treated as a random *voyelle d'appui* (Rohlf 1966: 181, 1968: 188).

⁷³ *Ghaiarda* 'strong, vigorous', the Baroque equivalent of 'fortis' (i.e., opposed to *dolce* 'lenis', remaining current in 19th-c. writers [e.g., Flectia, Fulci], including Salvioni who may well have imbibed it at its earliest attested source in Gian Ambrosio Biffi, rather than from later Tuscan grammarians, such as Buommattei and Salvini), is here used in opposition to modern authors who have loosely referred to ambi- or heterosyllabic *mm* as a phoneme. In the northern Italian dialects I have thus far surveyed, [mm] is a mere allophone of [m], fully predictable in its occurrence on the basis of the accentuo-syllabic parameters we are seeking to present. E.g., in Bolognese, a single underlying [m] has a fortis, ambisyllabic realization, [mm], only when immediately following primary-stressed vowels save *a* (for data and discussion, cf. infra §4.3.2).

⁷⁴ Compare, from the other extreme of Italy, in the Lucanian areas where final vowels are deleted in almost all contexts, their last vestige as schwa resists longest in proparoxytones (due to secondary stress) and following *m*: "besonders nach *m* das *a* gerne erhalten bleibt (*a fama*,

after palatal *n* or etymologically ambisyllabic *-nm-*.⁷⁷ Before the turn of the century, Rousselot (1891: 82f) had recorded that *m* (in an artificial token *mamama*) varied from 140 to 180 milliseconds, that *n* (in *nunana*) ran 130-150 msec., while alveodental *n* (in *nananan*) counted only 100-120 msec.⁷⁸ Other pioneers observed that the labials as a class were longer than other occlusives, both oral and nasal.⁷⁹ On the other hand, far less has been written speculating as to why this state of facts should be so. Thaxter (1989: 9) proposes the following articulatory explanation:

The active articulator in the production of the alveolar [nasal] is the tongue, the apex of the tongue to be precise. This has been shown to be a very agile articulator which can move quickly [to and] from its position during the production of a vowel to any point on the roof of the mouth... The active articulators in the production of a bilabial are the lips... The suggestion is that the lips can effectively close around the production of a vowel, thus shortening the preceding vowel. This makes for a relatively short preceding vowel and a longer consonant. [Conversely,] the movement of a bilabial into the following vowel will be slow, since the lips must open before the vowel can be produced. The alveolar, however, being pronounced with the nimble apex, will not last as long since to produce the following vowel the tongue needs merely to release from the roof of the mouth... there is nothing special to bilabial nasals; [their length] is a result of place of articulation—bilabial versus alveolar.

⁷⁷ Besides resisting syncope, the final *m* of complex codas, accruing from later processes such as apocope, will tend to resyllabify by calling forth an anaptyctic, homorganic vowel, e.g., Lomb. *dōrom* 'dormé', *vērom* 'biscia', Em.-Rom. *ānulum* 'olmo', *cānulum* 'colmo', etc.—cit. sup. n. 74.

⁷⁸ On the level of perception, *m* has long been known as the most readily identifiable of nasals—cf. Rousselot (1901 [= 1924]: 573f); Malécot (1936: 282), segmenting natural speech, found an *m* could be identified 96% of the time, *n* = 56%, and velar *ŋ* only 12%. Cf. Farnetani (1979a and 1979b) for a sound survey of more recent research. On the other hand, caudal velar *ŋ* is frequently confused with a nasalized vowel (Farnetani 1979a: 45). The greater relief of *m*, vis-à-vis *n* or *ŋ*, is no less manifest in word-medial coda position. For ex., at Ravenna, Ugo Pellis (1928—ALI Cf 17) distinguished many instances with loss of closure for caudal **n* and **ŋ*, versus merely weakening for *m*, e.g., *gg^mp* 'gambe', *e-ro^mp* 'rompono', *šē^mpar* 'sempre', *trā^mpol* 'trampoli', versus *bāā^ke* 'panca', *bjā^ke* 'biancol-ā', *lōō^ke* 'lungghi', *māā^ke* 'manca', *mōō^ke* 'monco', and *frōō^re* 'fronte', *parē^te* 'parente', *pō^re* 'punta', *sāā^lol* 'santolo, padrino'.

⁷⁹ Mavor (1903), working with Danzig German, then British English, then Swedish, came up with the following table (for word-final occurrence in monosyllables = "Auslaut [auf einsilbige Wörter]"):

	nach langem Vokal	nach kurzem Vokal
<i>t</i>	101.	119.
<i>k</i>	120.	133.
<i>p</i>	126.	148.
<i>m</i>	155.	178.

For more recent discussion of the greater duration of bilabials as a class, with collateral effects on adjacent vowels, cf. Fischer-Jørgensen (1964: 177, 186, 201).

4.2. The scale of nasal strength in northern Italy ($m > n > \eta$).

An analogous correlation between agility of the active organs, effort, and duration would seem to obtain between apical and laminal tongue closure in order to account for the conspicuous length of *n* vis-à-vis that of *m*. Panconelli-Calzia (1904: 21) supplemented timing analyses of *n* and *n̄* (and their correlated effects on the vowel nucleus they close), e.g.,

<i>an</i>		<i>an̄</i>	
Durée de la voyelle qui précède l' <i>n</i>	Durée de l' <i>n</i>	Durée de la voyelle qui précède l' <i>n̄</i>	Durée de l' <i>n̄</i>
<i>a</i> = 20	<i>n</i> = 7	<i>a</i> = 15	<i>n̄</i> = 22
<i>a</i> = 23	<i>n</i> = 6	<i>a</i> = 12	<i>n̄</i> = 24

with palatograms which reveal a broad, lamino-palatal contact, implying a good deal more physical pressure, for *n̄*⁸⁰ in contrast with a far lighter, apico-alveolar touch for *n*.⁸¹

Extending our line of analysis to its other extreme, the lightest touch of all, requiring least lingual effort, is that homorganic with the lowered velum, namely *ŋ*.⁸² (The lowering of the velum already produces a narrowing at that locus and engages coarticulators whereby even a slight dorsal raising might produce a more gesturally compact closure; *ŋ* would thus form the least effortful, least complex nasal coda.) This is the nasal coda most often confused with a mere nasalized vowel (cf. Farnetani 1979a: 45). Diachronically it is the last closure through which all other nasal sonorants tend to pass en route towards evanescence (cf. the Barcon, Altivole data just contrasted with Fanzolano sup. §4.1). Since the velum drops before the dorsal coarticulator rises, it tends by nature to form an arresting, rather than a releasing articulation;⁸³ therefore it is not surprisingly the world's

⁸⁰ One needs be warned that Paconelli-Calzia's data, reflecting the habits of a middle-class Roman, may dramatize this opposition more than in other languages. Recall /*n̄*/ is effectively geminate when intervocalic in central Italian—perhaps even as an inertial effect of its origin in two earlier segments, first Latin -*n̄*l-, then -*gn*-. (A lengthened *n̄* occurs in other languages which fused two former segments, e.g., Pali *anna* < **anna*, *puṅṅa* < **puṅṅa*, also *raṅṅa* < **raṅṅa*.) On general lengthening before /*od*/, cf. more recently Murray & Vennemann (1983), focussing on Germanic, but reporting unpublished comments by Vincent (1973) on Italian.

⁸¹ Compare also the palatograms of Josselyn (1900) as clarified by Magno Caldognetto (1973: 47) and, for a northern Italian dialect (Bellunese), Paloran (1942-43 cit. ap. Tagliavini 1969: 88).

⁸² The palatogram of which tends almost to constitute a negative mirror image of effortful *n̄*. Besides Paconelli-Calzia loc. cit. for Roman Italian, cf. Rousselot (1901 [= 1924]: 610) for Parisian French.

⁸³ Of all the nasals, velar *ŋ* conduces to the highest level of anticipatory or forward-spreading nasalization (versus *m*, with the least). Rousselot (1901 [= 1924: 536-7]) already called attention to this phonetic fact (e.g., Gourdon [Lot] *fūṅ* 'boitorn, lees' versus *fūm* 'smoke' wherein "u dans *fūm* 'fumée' est moins nasalisé"). While the general timing of velic lowering is language specific

doesn't matter' (cf. Parodi 1902-03: 351),⁸⁵ or else (2) it came, through an elimination of allomorphy, to form an unusual coda as in Gallego, where *ej* and *uj* retain their velarized -*ŋ* coda even before vowels, e.g., *ej|uj*, *ej|outros* replacing earlier *nij*, *noutros*, *pon un ou dous* 'put one or two [= *pón ún ow dóws*] (cf. Veiga Arias 1976: 105-107⁸⁶), just as analogic *uj|a* (written *unba* wherein "desde Sarmiento hasta D[ámaso] Alonso... están de acuerdo los autores en que la *b* de *unba* representa una linde [silábica]" — Otero [1966: 21]), based upon *uj*, replaced older *ua* (< *ŪNA*).⁸⁷ The resistance of velar -*ŋ* to form an onset has vexed synchronic studies of Italian "in bocca meneghina," i.e., as pronounced by Milanese who carry over Lombard -*ŋ* for Tuscan -*n*, wherein that most basic Sandhi rule of "rightward" resyllabification comes a crupper, e.g., *al|daltri* 'to others', *Dotto|rAntonio*, *tra|meletrico* 'streetcar', but *coj|altri* 'with others', *noj|ora* 'not now' in the face of Tuscan *co|naltri*, *no|nora* 'id.'—cf. Fiorelli (1958: 127n31).⁸⁸

⁸⁵ The same allophony, tied to the level of stress as this affected the acceptance of nasalization with its suite of subsequent weakening and velarization), characterizes Germanaschese (cit.), where proclitic *bon|bun* 'good' (e.g., *bonuro* 'early', *bonzur* 'good-day', *bun vèpre* 'good evening', *muntun|sun* 'my, thy, his/her', *ùn* 'a(n)') are not velarized, as occurs instead with free-standing (i.e., with independent lexical stress) *bun* 'capable' (e.g., *bun a rién* 'good for nothing, incapable'), *új* 'one' (prn.) or straight nouns such as *dunj* 'gift', *munj* 'brick', *paŋ* 'bread', *rej* 'kidney', *suŋ* 'sound', etc. (Genre 1973: *xix*).

⁸⁶ This same caudal syllabification with weakened velar *ŋ* was proposed by Pensado (1985) to account for its reinforcement with an oral occlusion before *wau*, e.g., MANUALE > *mangual* 'flail (as weapon)'. Her forthcoming monograph (Chap. 6, §§2.2.3.2ff) will treat the issue in great detail.

⁸⁷ For the situation in Gallego, cf. further various "recomposed" prefixal verbs, wherein the velar nasal coda, having spread its nasality forward, lingered as an oral velar release before an upcoming vowel, e.g., **ej|ladir* > *engadir*, **ej|alar* > *engalar*—a process identified by Dámaso Alonso (1954: 214), along with primitive → derivative pairs such as *paŋ* 'bread' → **paŋ|etro* > *paŋgetro* 'baker', which would have substituted any putative direct descendant of **panarri*, i.e., **paetro* (Lipski 1975: 190-1). Cf. also mod. dial. var.s with "e paragógica" such as *koradónj* 'e for corazón 'heart', *radónj* 'e for razón 'reason' (Veiga Arias 1976: 105, 107). The same author also notes two atonic nasal coda allophones according to two varieties (geographic? generational?) of syllabification: "hay ocasiones en que es posible más de una silabación. En efecto, en la frase *cantán os galos* cabe silabear: [kán-tarj-os-gá-los] o bien [kán-ta-nos-gá-los]" (1976: 121). Is this latter alveo-dental variant the vestige of an earlier stage (as in Genoese sup.) or merely an intrusive Hispanism? To the south, Leite de Vasconcellos (1900: 192, 211) pointed out for Mirandese that "na ligação de uma palavra acabada em nasal, pelo menos -*ŋ*, -*i*, com outra que comece por vogal... desenvolve-se a consoante *n*... por ex.: *ú ŋ ome*, *á ŋ oditos*, *tomabá ŋ esta*." His ambiguous transcriptions were clarified by Moura Santos (1967: 210, 214 & map 7) for this and for adjacent counties (e.g., Bragança: *sãⁿ amiyus* 'they are friends', *sãⁿ a bír* 'they are coming', *bãⁿ alí* 'they go there'; although she does not syllabify lexemes such as *lãpa* 'wool', *masãpa* 'apple', *rãpa* 'frog', *ãpa* 'one' [f.]—but a bit east at Valverde in the Serra de Gata *ũj* [a— Fink [1929: 47n3]). Even the situation in English dialects may have been less clearcut than our received pronunciations now suggest. Wallis (1953: 17) noted two variant syllabic divisions, implying that *anger*, *finger*, *longer* might behave like *singer* (rather than like modern *fin-ger*): "aliter sonabitur -*n* in *longer*, *stronger*, *anger*... aliter vero in *long-er*, *strong-er*, *ang-er* [emphasis mine]... Item, dum dicunt alii, *in-quam*, *tan-quam*... vel *in-q-wam*, *tan-q-uam*." (Although Wallis' modern editor discounts the second possibility [cf. Kemp 1972: 161n46], compare the same variation noted for [substandard] Midlands English by Jones [1962: 206 (8631)].)

⁸⁸ This leftward cleavage occurs in the general context of the Lombard (and northern) "tendenza a realizzare le parole come unità staccate, ben individuabili all'interno della catena

least frequent nasal in strong, onset position.⁸⁴ So closely-linked is *ŋ* to the preceding vowel nucleus (via anticipatory velic lowering and consequent forward transfer of its feature [+nasal]) that it constitutes a conspicuous exception to the axiom that a single intervocalic consonant will universally form an onset (cf. infra nn. 86-7). E.g., in rapid speech, sequences of the *at-at-at...*, *ap-ap-ap...* sort will tend to resyllabify as *ta-ta-ta...*, *pa-pa-pa...*, but not so *aŋ-aŋ-aŋ...* (which, if anything, tightens the caudal bond as *ãŋ-ãŋ-ãŋ...*). As just observed (supra §2.3), when intervocalic -N- (a tautosyllabic onset) weakened, via forward transfer or spreading of its nasal feature, the intermediate results ran *VNV* > *~Vŋ|ŋV* (as in Bolognese), whence via the path of further weakening, > **~Vŋ|ŋV* > *Vŋŋ|V* (as at Antagnod, via > *~Vŋ|ŋV* as at an Brusson [AIS Pt. 123]), and eventually > *~Vŋ|V* (as in Turinese, Genoese, etc.). Where caudal -*ŋ* became reanalyzed as underlying at the morphemic level, it occasioned two surface realizations as when occurring prevocalically outside the main stress: either (1) it preserved a **vestigial** alveo-dental allophone as in Gen. *|iŋ|* but *i|nAmèrika* 'in A.', *|juŋ|* but *ù|namigu* 'a friend', *|nuŋ|* but *nu|nimporta* 'it

(cf. Straka 1955: 270-2, Clumeck 1975: 139-40 and Anderson 1976), velar *ŋ* leads the game in those languages where it occurs. From an articulatory or gestural, neuro-motor vantage, the organic compactness of rearward dorsal raising with velum lowering may facilitate prompter velic activity and thereby account for *ŋ*'s fostering earlier and more intense resonance. As to the issue of intensity, Ladefoged (1972: 35) discusses the possibility of two phonic degrees of nasality in Chinantec, e.g., *ha* 'so, such' / *hã* 'spreads open' / *hã* 'foam, froth', based upon Merrifield's (1963: 5 [data on 14]) affirmation that "actualization of the two degrees differs in quantity and in timing. A heavy nasalization involves full opening of the velic and nasalization of all elements of the syllable. Light nasalization involves a late opening of the velic after the vowel has been initiated and not so full an opening." In the Romance area, however, any "grades" of nasalization remain subphonemic, notwithstanding stray comments which might suggest otherwise, e.g., Malagoli for highland Emilian: "Coll'ŋ velare s'accompagna un aumento ossia un doppio grado di nasalizzazione della vocale precedente" (at Novellara—1910: 50) and "Le vocali sono nasalizzate... davanti a nasale, e tale nasaltà aumenta d'un grado davanti a *ŋ* velare... Col *ŋ* velare... s'accompagna anche qui [a Valèstral... un doppio grado di nasalizzazione della vocale precedente]" (1934: 65-6). But nowhere (thus far) have I found any phonologic opposition which pivots on the degree of nasalization (rather than on some other attendant feature of the historically diverse nasals themselves), i.e., nowhere are pairs of the sort *pane* 'bread': *panno* 'cloth' or *seno* 'breast': *senno* 'sense, wisdom' reduced to **pã*: **pã*, **sẽ*: **sẽ* (or, alternatively, **pãŋ*: **sẽŋ*: **sẽŋ*). Note that in English, as well, there are several restrictive indices which attest to the relative weakness of *ŋ vis-à-vis* the other nasals. "No English word can begin with [ŋ]. This sound can occur only within or at the end of a word [i.e., in coda position], and even in these circumstances it does not behave like the other nasals. It can be preceded only by the vowels [i, e, æ, a, ɔ, ɜ] [i.e., neither fully high (with maximal velic closure), nor long, nor diphthongs (since the consequent forward transfer of nasality would render a pre-existing VV nucleus extraheavy)]"—Ladefoged (1975: 54). The anomalous nature of Engl. [ŋ], which conspicuously failed to pattern with [m] and [n], had already troubled Sapir (1925: 49, and cf. further Jones [1962: 98n1] and Vachek [1964]).

⁸⁴ Recall that in Vietnamese initial *ŋg*- is prenasalized stop, wherein the arresting occlusion is strong and thus it contrasts with the same grapheme word-finally [Vŋ], with its heavy, forward-spreading nasalization—cf. Chodzko 1932: 16 and Emeneau 1951: 14-16. The initial *ŋ*- of Standard Thai turns up informally and dialectally as a prenasalized velar stop [ŋ̣].

Thus in northern Italy *m* and *n* behave (or behaved historically) the same as etymologically heterosyllabic (geminate) -NN-, i.e., they conditioned a foregoing stressed vowel nucleus as if they formed a coda no less than an onset, in contradistinction to simple *n*.⁸⁹ Note that this last statement needed to be hedged with a stress-based qualification. Such implicit heterosyllabic reanalysis becomes manifest in but a **single** context: where the foregoing nucleus bore the main stress and thus could tolerate a coda; e.g., Valsésia *ànnuja* 'aunt' < AMITA, (n)čimma 'on) top' < CĪMA, *lamma* 'blade' < LAM(t)NA, *limma* 'file' < LĪMA, *līmnuju* 'border of grass between two fields' < LIMITE, *pummi* 'apples' < PŌMĪ, versus *gūmī* 'to sigh, sob' < GEMERE, *rīmá* 'animal' < ANIMĀLE (Sporri 1918: 403, 688, 741⁹⁰), or Borgomanero *fūmma* 'smoke' versus *fūmè* 'to smoke', etc. (Pagani 1918 and Scheuemeier 1928—AIS Pt. 129). To account for so critical a condition, it needs be remembered that we are dealing with dialects of mixed isochrony. As Bertinetto (1981: 169-71) warned, between Pike's pure dichotomy of systems dominated either by syllabic timing or by stress timing, most languages integrate these poles of temporal organization in some blended form. In northern Italy, as in Romance more generally, a **bimoraic** canon obtained only for main-stressed syllables, while the more weakly-stressed categories manifest, if anything, a tendency towards monomoraism (unless a complex inherited coda thwarted smooth reduction). On this latter score, note at Cortona, *apetito* 'appetito', *batàglia* 'battaglia', *capello* 'cappello', *cativo* 'cattivo', *fusèto* 'fossato', *matino* 'mattino' (data from Nicchiarelli

parlata," according to the lexico-orthographic breaks in the written language which stood as the prime vehicle for the historical diffusion of Italian in the North (Sanga p.c. and 1984: 6). Note further that in the Marche, when central-southern Italian nasal strengthening (NB > *mm*, ND > *nn*—or call it lag nasal spreading) met (and to some extent overlaid) northern Italian weakening (or anticipatory forward transfer), the world-medial, velarized *ŋ* coda came to constitute a phonetic anomaly. For Fermo, Bonvicini (1964: 7) specified unusually palpable disjuncture in -*ŋ* *p*-/*ŋ* *b*-. "tra l'articolazione dei due fonemi [sic]... c'è sempre una breve pausa, per cui la scrittura foneticamente esatta è: *ŋ* *p* e *ŋ* *b*. Esempi: *caj'biu*, *caj'biná*, *caj'pà*, *caj'pà* 'compare', *caj'prá*, *poj'pa* 'pompa'. (In all likelihood, *ká'ŋ* *bju* 'cambio', etc., as in Veneto *kəŋ* *bjo*, *təŋ* *po* with extremely tight or close contact [Jespersen's *fester* *Anschluss* or *fester Verbindung*—1904: 198, also Martinet 1966] linking *ŋ* to the foregoing vowel.)

⁸⁹ Compare the modern Italian data for [n] : [nn] : [ɲɲ] reported by Fava and Magno Caldognetto (1976: 54), wherein the latter pair move *pari passu* in neat opposition to simple [n]. In Cremonese, where vowels were lengthened in open syllables and shortened in closed syllables, *m* (and *p*) shortened the foregoing nucleus as if they were ambisyllabic, e.g., *fám* 'hunger' and *váp* 'spider', same as *pán* 'cloth' < PANNU, versus *pá-ŋ* 'bread' < PANE (Rossini 1975: 190). As to the surprising lateness of degemination in northern Italy, cf. Zamboni (1976: 328-32) and Uguzzoni (1974: 243-5, 1975: 73n100—with refs. to Schür for Romagnolo).

⁹⁰ Note that this data was from Rossa; in other towns, fortis */m/* → [mm] was associated with *mb*, e.g., *ámmbja*, *ámmbju*, *límmbju* for *ámmbja* for *súmmja* < SMĪA 'monkey', etc. (Sporri 1918: 696); yet this secondary, sociolinguistic process likewise implies the long, fortis perception of *m*.

1938 cit. ap. Rohlfs 1966: 323 [§229], cf. further Weinrich 1958: 171),⁹¹ wherein the underlying geminate has been reduced in unstressed position ((C)VVC/ → [(C)V]). Conversely, the lack of (lower mid-) vowel lengthening (with subsequence breaking into a diphthong⁹²) in arhizotonic verb forms has occasioned the apophony familiar from the standard Italian paradigm, e.g., *siède* 'he/she sits' vs. *sedéte* 'you sit', *vuòle* 'he/she wants' vs. *voléte* 'you want'.⁹³

4.3.1. Coda deletion/coda suppletion: compensatory VC adjustments as proof of the bimoraic stressed-syllable canon.

Repetti (1989) and Young (1991) have reviewed evidence from Borgo San Sepolcro (AR) to the Val Germanasca (TO—cf. Genre 1973) which demonstrates how the accentual feature of primary or main stress interacts with syllabic timing in Italy. On the one hand, codas may be reduced wherever possible following an open, become a phonetically [+long], stressed vowel; on the other, codas may be supplied following a short stressed vowel. Both expedients, coda deletion/coda suppletion, serve the bimoraic stressed-syllable canon, either by reducing "extraheavy" (actual or potential trimoraic) syllables, or by augmenting those which were hypometric or underweight, i.e., monomoraic.

The former strategy (coda deletion or reduction) could be practiced only where Latin geminates survived as such; thus at Borgo San Sepolcro (AR) when the shortening of [+low] vowels (**a*, **e*, **o*) in a closed syllable fed into the common Romance cycle of laxing > opening > new lengthening (inasmuch as greater aperture breeds greater duration), extraheavy syllables

⁹¹ The process occurs in old docs. from Perugia and Città di Castello (Castellani 1972 [= 1980: 2, 494-501) as well as in Old Aretine (e.g., *cittá*, *galine*, *polastri*, *tereno*, *tesuto*), although with less regularity (enough to occasion skepticism about their phonetic value in Serriani 1972: 111-2). The same compensatory reduction of geminates, occurring in stressed syllables, takes a more radical form slightly to the north, at Borgo San Sepolcro (AR—further discussion, infra §4.3.1). Here, compensatory interaction first shortened vowels in closed syllables, thereby laxing and opening them, and subsequently lengthened them as a timing function of their greater aperture, encouraging suppression of the consonantal coda wherever possible, e.g., ANNU > *á* *no*, CANNA > *ká* *ná*, CAPPÁ > *ká* *pá*, CARRU > *ká* *ro*, and generating extraheavy syllables where such coda reduction was not feasible, e.g., ALTU > *á* *lto*, ARCA > *árka*—cf. Young (1991—also summarizing earlier studies) and, for data, Menlo (1929), Zanchi Alberti (1937:39).

⁹² I.e., curtailment in unstressed position caused merger in the direction of the shorter, higher mid-vowels, *e* and *o*.

⁹³ In varieties of Italo-Romance wherein the lengthening of higher mid-vowels analogously led to their breaking into a (falling) diphthong, this process likewise was restricted to the main-stressed nucleus, e.g., Agnonese (CB) *ii* *la* *váita* 'lo vedo' versus *lo véta* *fojja* 'lo vedo io' (both = 'I see it'—with marked inversion to focus on subject—Ziccardi [1910: 408-10]). Such phrasal accent alternations were surveyed by Rohlfs (1938), departing from his AIS findings, e.g., map 1510 'a thin thread' from the Adriatic (Vico del Gargano) *nu* *fiúla* *fojja*, but in isolation *nu* *fojja* 'a thread', to the Tyrrhenian (Pozzuoli) *nu* *fiúla* *fojja*, but *nu* *fojja*.

resulted (or at least became imminent at the phonetic level), wherein the geminates were reduced to simple onsets, e.g., ANELLU > anèlo 'ring', FERRU > fèro 'iron', GEMMA > gèma 'bud', LECTU > lèto 'bed', PECTU > pèto 'chest', SEPTÉ > sète 'seven', TERRA > tèra 'land', versus earlier lengthening in open syllables which led to new tensing of the open peak [**iè* > *ié*] as in HERI > ièri 'yesterday', LAETU > lièto 'happy', MEL(E) > mièle 'honey', PEDE > piède 'foot', SÆPE > sièpe 'hedgè';⁹⁴ analogous lengthening of A in open syllables led to breaking as **æ* whence *ä*, whereas in closed syllables, shorter *a* remained evenly low and open and thereby later became longer with identical coda reduction, whence pairs such as *māna* 'hand' < MANU (with fem. gender marking) versus *mana* 'handful' (= It. *manna*) < MANUA, *pāla* 'shovel' < PALA versus *pala* 'bale, ball' (= It. *palla*) < Gmc. **palla*—cf. Young 1991 for details and bibliography (also assessment of Nocentini 1985).

In northern Italian Gallo-Romance, with earlier reduction of geminates (not syllabically motivated), the problem arose on the opposite end of the timing ("weight") scale: with hypometrical (or "underweight") syllables (i.e., monomoraic syllables in main stressed position). For ex., in the Val Germanasca (lucidly analyzed by Genre [1973], whence the data cited infra), the rise of a bimoraic canon for main-stressed syllables called forth a wave of gemination, e.g., *arcaddo* 'arcade, portico', *bimmo* 'two-year-old goat or lamb', *blaggio* 'boast, ostentation', *canno* 'canè', *crosto* 'cellar'. Where, instead, the stressed nucleus was already bimoraic such caudal enhancement was superfluous, e.g., with long vowels or with diphthongs: *aigo* 'water' (not **aiggo*), *airo* 'threshing floor' (not **airoo*), *auo* *caudo* 'warm wind, scirocco' (< AURA CALIDA), *čèimo* 'chain', *čauzo* 'stocking', *dimo* 'tenth', *doit* 'tactful' (< DOCTU). Since this development occurred well after the apocope of non-low vowels (which produced word-final caudal consonants), it gave rise to historical coda/coda-onset alternations such as *čat/čat|to* 'cat' (m. & f.), *fat/fad|do* 'insipid', *flap/flap|po* 'flabby', *gop/gob|bo* 'hunchbacked', *gram/gram|mo* 'nasty'. (But note there is no such caudal reinforcement after long vowels or diphthongs, e.g., *dreit/dreito* 'straight', *freč/frečo* 'fresh', *freit/freido* 'cold', *gât/gâto* 'spoilt, wasted'—i.e., never **dreit|to*, **freč|čo*, etc., which would have been overlong or extraheavy.) Needless to say, outside the main stress, the bimoraic canon was not in effect, whence alternations such as *eicramâr* 'to skim' on *crammo* 'cream', *eicimâr* 'id.' on *eicimmo* 'foam, scum', *enflamâr* 'to light' on *flammo* 'flame',

⁹⁴ As regards the diphthong, earlier pan-Tuscan lengthening of **ë* in an open syllable had already produced breaking. In other parts of Tuscany, when such lengthening occurred earlier in terms of relative chronology, it was equated with tensing and thereby occasioned closing in open syllables, e.g., Sambuca (Pistoia) CAECU > *čégo* 'blind', CAELU > *čélo* 'sky', FEL(E) > *fèle* 'bile', SERU > *sévo* 'why', and COR > *córe* 'heart', FOCU > *fógo* 'fire', LOCU > *lógo* 'place', ROTA > *róda* 'wheel' (Rohlfis 1966: 109, 136ff).

plimâr 'to pluck' on *plimmo* 'feather', etc. As Genre (1973: XLIII-XLIV, n. 8) made clear:

Le consonanti lunghe ([ambisillabiche] doppie, nella trascrizione) si trovano solo in posizione immediatamente postonica: quando, per la mobilità dell'accento, la vocale che le precede diviene atona, esse sono pronunciate brevi (come in francese) e sono trascritte con un solo segno. Es.: *battu* '[to] batto', *ciabbro* 'capra', ma *batitu* 'battevo', *ciabri* 'capretto'.

Such coda-suppletion was first described (as encountered in a less complete form) in the Franco-Provençal Val d'Illicez by Fankhauser (1910: 331-5),⁹⁵ who noted, with reference to "v und die Sonanten M, N, L, R.":

Diese fünf Konsonanten haben das gemeinsam, dass sie vortönig einfach, nachtonig geüht erscheinen,

citing as evidence numerous morphophonologic alternations such as rhotic/arhizotonic apophony in the verb paradigm, e.g., CLAUÁRE > *clavá* 'to nail', but CLAUAT > *cláv:ə*, LAUÁRE > *lavá* 'to wash', but LAUAT > *láv:ə*, LEUÁRE > *levá* 'to raise', but LEUAT > *láv:ə*, for liquids: CŪRÁRE > *kúr:ə*, FĪLÁRE > *fólá* 'to spin', but FĪLAT > *fópl:ə*, GELÁRE > *dzalá* 'to freeze', but GELAT > *dzál:ə*, PLŌRÁRE > *płorá* 'to cry', but PLŌRAT > *płóré:ə*, and likewise with nouns and derivatives: MŪLU + *ittu* > *mwulé* vs. MŪLA > *múl:ə* 'mule', **viláticu* > *vóládo* 'village' vs. UĪLLA > *vél:ə* 'town', for nasals, AMÁRE > *amá* 'to love', but AMAT > *ám:ə*, LĪMÁRE > *límá* 'to file', but LĪMA > *lím:ə* 'file', PŌMÁRIUM > *pomá* 'apple-tree', but PŌMA > *póm:ə* 'apple', **pannára* 'to wipe with a cloth' > *paná*, but **panna* > *pán:ə* 'dishcloth', SONÁRE > *sóná* 'to make sound', but SONAT > *són:ə*, TONÁRE > *tóná* 'to thunder', but TONAT > *tón:ə* 'it thunders'.⁹⁷ In a later remark, Fankhauser (1910: 335) added instances wherein the pattern had been extended to plain stops, e.g., *abadá* 'to raise up' whence *abád:ə* (3rd sg.), *aligá* 'to stare openmouthed' → *alúg:ə* (3rd sg.), *robá* 'to steal' → *rob:ə* (3rd sg.).⁹⁸ While

⁹⁵ Pult (1897: 114-6) had encountered an analogous phenomenon in the lower Engadine, but had considered the geminates to descend directly from their Latin prototypes, noting merely that "avant l'accent, les consonnes doubles deviennent simples."

⁹⁶ Etymologic -RR- had not yet been reduced and thus has no fortis: lenis alternations, e.g., *ferá* 'to shoe (with iron)', same as *fer:ə* (3rd sg.), *será* 'to shut', same as *ser:ə* (3rd sg.)—Id. 334.

⁹⁷ For simple -N- one must reconstruct earlier forward transfer of nasality to a stressed nucleus, followed by anticipatory realignment of the weakened nasal coda as alveo-dental, i.e., **V^hl^h* > **V^hl^h*—the frequent evolution seen above for rural Bolognese, etc. Stronger, Latin geminate -NN- never entered this weakening process with forward transfer of nasality and concomitant velarization, thus **pannat* 'he/she winnows' > *ván:ə* with no nasalization, vs. FONTANA 'fountain' > *fontán:ə*, LANA 'wool' > *lán:ə* (Fankhauser 1910: 333). An analogous lengthening of *m* after primary stress occurs in Swiss German dialects, where it is tentatively limited to the context following a short vowel, e.g., *hamm^r*, *him^r*, *nam^r* 'Namen', *xrömm^r* 'Kräuter', versus *lamm* 'Lamm', *lim^e* 'leimen' (Sütterlin 1924: 277-8).

⁹⁸ The system of affricates and fricatives do not pattern with the stops, perhaps because they were already enmeshed in another grid of fortis: lenis oppositions, e.g., COAGULÁRE 'to curdle' > *kakí*, but *kadzə* (3rd sg.), **mollíare* 'to soak, soften' > *mčəxi*, but *mčəðə* (3rd sg.), also cardinal and ordinal numbers: *óðə* '11', *dóðə* '12', *tréðə* '13' → *óðimo* '11th', *dóðimo* '12th', *tréðimo* '13th', etc. (Fankhauser 1910: 290, 337-9).

still nominally attributing coda suppletion to "l'accent d'intensité," Duraffour (1932: 3-4) came closer to the core of its cause by relating stress and duration:

Cette intensité plus forte est solidaire d'une variation plus grande des durées... [dont] les effets... se manifestent d'abord au voisinage immédiate de la voyelle intense: lorsque cette voyelle est brève, la consonne qui suit, par conséquent initiale de la syllabe finale, est plus tendue, plus prolongée dans sa tenue, au point de donner souvent l'impression d'une gémée conservée, comme dans *soppa* 'soupe'. Mais le *t* de *gottà* 'goutte' est le même que celui de *rottà* 'route', différent de celui de *kràttà* 'caverne' et de *pàttà* 'pâte' [i.e., avec voyelles longues]: il s'agit donc ici d'un phénomène [secondaire] de compensation.⁹⁹

4.3.2. Compensatory syllabic processes and the nasals.

What can such compensatory processes tell about nasalization, on the one hand, and about the relative strengths of various nasals on the other? To begin with, in lower Germanaschese,¹⁰⁰ where -N-nasalized the foregoing stressed vowel both word-finally and intervocalically, but in the latter position saw alveodental -N- reaffirmed with consequent withdrawal of heavy nasality,¹⁰¹ the denasalized vowel continues to behave as if it were bimoraic (i.e., the same as if it were a long vowel or a diphthong), e.g., *brũj/brũno* 'brown', *bũj/bũno* 'good', *grãj* 'grain' / *grano* 'minute particle, kernel, seed', *plãj* 'flatland' / *plano* 'jackplane', *plẽj/pleno* 'full', *sãj/sano* 'healthy', *vãj/vano* 'vain', *vẽj/vẽzino* 'neighbor', *vilẽj/vileno* 'nasty, ugly' (and not

⁹⁹ Regrettably, the Grenoble expert then muddled the waters with additional ethnic hypotheses of cause (1932: 5), which lingered on into Keller (1958: 103-04), who nonetheless provided a good overview of the process' distribution in Val d'Aosta, where it assumes a wide-ranging structural presence, e.g., La Thuile *sãtta* 'cat' < CATTA, *vẽvva* 'widow' < URVA, *viãdo* 'empty' < **voçittu*, same as *lĩmmã* < LIMAT vs. *lĩmẽ* 'to file' < LIMARE, just as seen for the neighboring Valgermanasca.

¹⁰⁰ By lower is meant from Prali downwards. In intervocalic position, from an inferrable earlier stage with nasal transfer and a weakened velar nasal coda, **V^h/N-* (as seen above § 2.3 for Bologna, Cogné, and much of the Monferrato [n. 31]), Ghigo and the higher valley continued along the path of weakening, i.e., total velar assimilation and subsequent loss of even the velar coda (as illustrated supra § 2.2 for Maisonasse in the Valsavarenche or for Novara di Sicilia n. 39—cf. infra § 4.4 for more details on the latter); e.g.,

	upper valley	lower valley
*brũnu/-a	brũj/brũno	brũj/brũno 'brown'
BONUJ/-A	bũj/bũno	bũj/bũno 'good'
GRãNUJ/-A	grãj/grãno	grãj/grãno 'grain'
SãNUJ/-A	sãj/sãno	sãj/sãno

¹⁰¹ At issue is the area from Prali downwards, where anticipatory assimilation of the caudal velar to the alveodental onset, i.e., **V^h/N-* > **V^h/N-* (as just seen in the Val d'Illicez and earlier in much of lower Piedmont [n. 32] and rustic Bolognese), occasioned rightward resyllabification and retraction of heavy nasality, i.e., **V^h/N-*, a return to the situation in spoken Latin with a simple nasal onset, as in Milanese, *save* that the denasalized vowel retained its greater duration or weight.

*brũn|no, *bun|no, *gran|no, etc.), the same as *čẽno* 'chain' < CATENA, *fẽno* 'marten' < FAGINA, *fũano* 'stalk of leeks, onions', *ğam/ğano* 'yellow', *rẽno* 'queen', *tauno* 'bumble-bee', etc. The stronger nasals (*m, ɲ, n:*), instead, which did not nasalize the foregoing vowel (or at least not palpably) and which thus did not initiate the chain of forward nasal transfer/nasal-weakening/velarization, became subject to the same caudal suppletion (lengthening) strategy common to all stops following short vowel nuclei, e.g., *bap|no*, *bim|no*, *can|no*, *crem|no* (just noted above), whence also the same alternation of final coda versus reinforced coda/onset also just noted, e.g., *don* 'grandfather' versus *donno* 'lady', *fũm* 'smoke' vs. *fũmmo* 'pipe', *ğẽm* 'sigh, sob' vs. *ğẽmme* 'to sob', *gram|grammo* 'nasty' (m. & f.), *pan* 'cloth' vs. *panno* (*d'mẽlio*) 'cornhusk', *pum* 'apple' vs. *pũmmo* 'oblong, winter apple', *ram* vs. *ramma* 'branch' (the same as *cat|catto*, *fai|faddo*, etc.). In sum, just as nasalization causes lengthening (i.e., ceteris paribus, a nasalized vowel is longer than its oral counterpart in laboratory findings), a formerly nasalized vowel may continue to count for two moræ, the same as a long vowel or a diphthong (cf. the Latin, English, Indic, and Lombard ex. s. cit. sup. § 2.2). The lack of compensatory consonant suppletion to provide a coda for feminines such as *bu:no*, *grã:no*, *sa:no*, etc. seems a clear vestige of the length engendered in the stressed nucleus by anticipatory nasal transfer.¹⁰²

Along this deletion/suppletion axis, other northern Italian dialects tend to fall out according to the language-specific relative chronology of inherited Latin coda-simplification (degemination) interlocking with the affirmation of the bimoraic canon. A difference in this relative chronology occasioned one of the more conspicuous oppositions between eastern and western Lombard vocalism. If the compensatory vowel shortening process took hold before *i* and *ũ* had lost their vestigial marking for length (an inertial, increasingly redundant feature in Later Spoken Latin), they followed the laxing, opening trajectory of short *i* and *ũ*; whereas, if their height feature alone were relevant by the time degemination occurred (coda/onset > simple onset), this aperture remained unaltered (notwithstanding a reduction in phonetic length as in Milanese¹⁰³); e.g.,

¹⁰² For important clarifications of the distribution of fortis/lenis consonants in relation to long/short vowels in Germanaschese, see most recently Genre (1987 → forthcoming).

¹⁰³ On the syllabic compensatory process in Milanese (as described by Gian Ambrosio Biffi at the start of the 17th C.), cf. Lepšy (1965: 167f, 172ff) and Sanga (1988: 294f). For the east-west Lombard opposition in general, cf. Bontadini (1987: 495). For Late Latin syllabic compensation processes ('abrégement compensatoire' / *Ersatzkürzung* matched by "allongement compensatoire" / *Ersatzdehnung*), the literature is vast (cf. Zamboni 1976, de Chene 1979, Bichakjian 1986, Basbøll 1989, Hayes 1989) and ancient (cf. Aulus Gellius' comment "nam detrimentum literæ productione syllabæ compensatur" — *Noctes att.* II, 17, 9). An elegant fin-de-siècle formulation was offered by Grammont (1894 [= 1891]: 319-20) when treating "la loi de l'équilibre [qui] préside à la pondération des syllabes" at Damprichard (Franche-Comté). While consonantal coda suppletion would become the prime strategy in northern Italy, later spoken Latin, where vowel length remained phonemic, likewise appears to have operated vowel-lengthening to judge

	Western Lomb.	Eastern Lomb.
BRÜTTU 'heavy'	brüt	bröt
FÏXE 'tenaciously'	fis	fés
FRÏCTU 'fried'	früt	frët
FRÛCTU 'fruit'	früt	frët
GRYLLU 'cricket'	grì	grél
ÖSTIU (late var. <i>üstiu</i>) 'opening'	üs/üs	ös/ös
	šima ¹⁰⁵	šöma ¹⁰⁶
CÏMA 'tip, top'	fjüm	fjöm
FLÛME(N) 'river'	füm	föm
FÛMU 'smoke'	zögn	zögn
JÛNIU 'June'	lima	lema
LÏMA 'file'	läm	löm
LÛME(N) 'light'	pjüma	pjöma
PLÛMA 'feather'	pigna	pegna
PÏNEA 'pine (cone)'	prüm/prüm(a) ¹⁰⁷	pröm/pröm(a)
PRÛMU/A 'first'	pügn	pögn
PÛGNU 'fist'		

Note that already in this process the strong nasals behaved in tandem with caudal consonants to produce an identical dialect split, e.g.,

	šima ¹⁰⁵	šöma ¹⁰⁶
CÏMA 'tip, top'	fjüm	fjöm
FLÛME(N) 'river'	füm	föm
FÛMU 'smoke'	zögn	zögn
JÛNIU 'June'	lima	lema
LÏMA 'file'	läm	löm
LÛME(N) 'light'	pjüma	pjöma
PLÛMA 'feather'	pigna	pegna
PÏNEA 'pine (cone)'	prüm/prüm(a) ¹⁰⁷	pröm/pröm(a)
PRÛMU/A 'first'	pügn	pögn
PÛGNU 'fist'		

The same sort of compensatory strategies (deletion/suppletion) to favor a stressed **bimoraic** syllable occurred across the Po to the south and the east, but with a significant twist which corroborates the intrinsic (phonetic) length

by Consentius (5th C.) censure of pronunciations such as *cēves*, *pīper* for *CERES*, *PIPER* and the fact that numerous loans to Germanic harken back to a long stressed vowel in open syllables, e.g., for *BREVE*, *CERESIA*, *CROCU*, *CRUCE*, *ELEMOSYNA*, *FEBRE*, *PETRU*, *SCHOLA*, *SPECULU*.

¹⁰⁴ Cf. Salvioni (1884: 198-9—suppl. by Cherubini 1899ff: q.vv.) and Sanga (1987: 41-2). In terms of relative chronology, *ü* has been uniformly fronted > *i*, and this **ü*, subsequently lax in closed syllables, BRÜTTU > **brütta* > *brötta* > *brött*, remained distinct from *lax o* (as descended from *ö/u* in closed syllables, e.g., BUCCA > *bōka*, GURTA > *gōta*—cf. Sanga 1987: 40-1). The full closed-syllable laxing of **i* > *e* and **ü* > *ö* is not attested until the 19th C. (Sanga 1984: 60 and, for modern exs., 1987: 41, 44). Sanga alerts (p.c. 2 July '90) that even in western Lombard *i/iü* have become phonemically short, contrasting with lengthened *i/iü* in open syllables and thereby transmitting as a **quantitative** length opposition the distinction earlier made **qualitative** to the east (cf. also Sanga 1989: 186).

¹⁰⁵ Standard or traditional Milanese orthography uses *mm*, but it is not ambi- or heterosyllabic and thus, to avoid confusion, has here been reduced to *m*. Biffi used but one *m*, however, already his contemporary, Fabio Varese (ca. 1570-1630) used *mm* in a less sophisticated, more phonetic orthography (cf. Stella et al. 1979: 103ss—judging by MSS of a generation later), which had become standard by the time of Maggi (cf. Isella 1964: 2, 29 et passim).

¹⁰⁶ Such anticipatory engagement of the lips is commonplace for *i* > *ü*, cf. *prüma* for *prima* < *PRĪMA*, *šimja* < *SIMĪA*, and here implies an intermediary **šimja* (attested dialectally), whence *šöma*.

¹⁰⁷ The OMil. var. *pröuma* in Biffi's *Prissian* (= [pröimə]) rather than *prüma* is perplexing—cf. Salvioni (1919: 532). Given the paired /*masc.*/ nature of *prüm/prüm*, conceivably this adjective came under the influence of pairs such as *vüü* 'uno' vs. *vöna* 'una' to spin off this fem. var. *pröma*—Sanga p.c. 2 July '90. For Mil. *-enna* < *-INA*, cf. supra n. 34.

of the strong nasals,¹⁰⁸ no less than the fundamental combinatory requirement of the bimoraic canon, i.e., long vowel + short consonant (= simple onset) versus short vowel + long consonant (= coda + onset).¹⁰⁹ For ex., in Bolognese, stressed short vowels called forth a consonantal coda, either by straight gemination (for simple intervocalic oral consonants), e.g., *bóff* 'owl' < BÜFÖ, *dégg* 'I say' < DĪCÖ, *mégga* 'nothing' < MĪCA 'flake', *móll* 'mule' < MÜLU, *mótt(a)* 'mure' < MÜTU/A (m. & f.), *pella* 'pestle' < PĪLA, *scävva* 'broom' < SCÖPA,¹¹¹ or by tightened, caudal contact (*fester*

¹⁰⁸ By way of analogy, cf. the tendential shortening of long vowels before *m* in the passage from Middle to Modern English, e.g., OE *crāma* > ME *croume* > mod. *crumb* [krʌm] (not *[krʌm]), OE *plūme* > ME *ploume* > mod. *plum* [plʌm] (not *[plʌm]), *pūma* > *thoume* > *thumb* [θʌm], versus the maintenance of length in *dūn* > *down*, *tū* > *town*, etc. (Jespersen 1948: 237—although the adjustment was never uniform, e.g., OE *nūm* > Me *roum* > mod. *room* [ru:m] but dialectally [rʌm]; cf. also Wright 1928: 29 et passim). Within the Romance domain, note the vowel shortening before *m* reconstructible for Dampriehard (Franche-Compté): while denasalization left in its wake a lengthened vowel, e.g., *pūn* < **pāna* < **pōna*, *vūn* < **vāna* < **vōna*, any such length was eliminated preceding *-m*, e.g., *pūm* < **pāma* < **pōma*, *šēm*, **šēma* < **FLAMMA* (not **pām* or **šēm*)—cf. Grammont (1894: 339).

¹⁰⁹ Besides Latin var. of the CŪPA/CUPPA sort, the same tendency to commute V:C into VCC, operating historically, differentiated Indic languages; e.g., Sk. *lāṅga* 'berry' → Pāli *lāṅka* but also Prakrit *lāṅkā*, and, at a later era, Gujarati *lāṅu* 'sweet' versus Hindi *lāṅḍu*, Guj. *pākū* 'ripe' vs. Hn. *pākū* (Sen 1960). For the synchronic process, cf. such English contrasts as [i:] → [e], e.g., *betweave* → (past part.) *bereft*, *deal* → *dealt*, *feel* → *felt*, or *heal* → (abstr.) *health*, *steal* → *stealth*, etc. (Jespersen 1948: 120-6).

¹¹⁰ Historically, the development of *i* and *ü* in open syllables presents one of the lingering *crucis* of Bolognese phonology. The division of competing results is neat (cf. Coco 1970: 15-6, 25-6): some follow the general northern Italian and Gallo-Romance pattern, e.g., *amīg* < AMĪCU, *fīl* < FĪLU, *alsī* 'lye' < LIXTUA, *nīd* < NĪDU, *spīga* < SPICA, *urīga* < URTĪCA, *vīd* < UĪTE, *vū* < UŪU, just as *crād* < CRĀDU, *cāl* < CĀLU, *fās* < FĀSU, *lāz* < LŪCE, *madūr* < MĀTŪRU, while others, instead, have a shortened source vowel and a lengthened consonant (coda + onset), as just cited above, *dégg* < DĪCÖ, *mégga* < MĪCA, *móll* < MÖLU, *mótt* < MŪTU, *padóll* 'swamp' < PADŪLE, *pella* < PĪLA, *peppa* 'pipe' < PĪPA. Some of these latter show a lack of lenition (*vetta* < UĪTA), implying interrupted or not wholly vernacular transmission (cf. Uguzzoni 1971: 129p35), but others do not (*degg* < DĪCÖ, *megg* < MĪCA). Some seem by their semantics semi-learned or else exotic (*avvèll* < APRĪLE, *barèll* < Gallo-Rom. *baril* 'barrel', *mèll* < MĪLLE, *scrett* < SCRĪPTU, *scröppel* 'scurple' < SCRŪPULU, the same as *stéppit* 'threshold' < STRĪPTE (as against more vernacular *öner* 'udder' < ŪBERE, *söwer* 'cork' < SŪBERE, *lāvūd* 'tepid' < TĒPIDU (as against 'munky' < TURBĪDU), but, again, others do not (*brèll* 'osier' [Salix viminalis] as *brillās* 1320 in Pier de' Crescenzi). The anomalous developments also cut in the opposite direction, i.e., sporadic failure to shorten vowels in a closed syllable, e.g., *frūt* (not **frott*) < FRŪCTU (cf. Trauzzi 1901: *xxiii*). Sanga p.c. 2 July '90 reminds me that the high, tense vowel pair likewise evolves anomalously in eastern Lombard; e.g., *i* was shortened, laxed and opened in an historically closed syllable in (FRĪCU > *rēs*, FĪCTU > *fēc*, **vadīcula* > *radéc*, although a few items suggest coda suppletion in former open syllables as well, e.g., **battīle* for **battīle* > *badel*, **vīta* for UĪTA > *lūjēla*)—Sanga (1987: 42-44). Inversely, **e* from *i/ē* was lengthened in an open syllable in typical Gallo-Romance fashion, but thereafter subsequent tensing as a function of such length favored closing the peak element of a falling diphthong (PĪRU > **peira* > *pir*, SERA > **sera* > *sira*, TĒLA > **teila* > *tīda*).

¹¹¹ Also where the short vowel derives from a Latin closed syllable, e.g., *angvella* 'eel' < ANGVĪLLA, *būcca* 'mouth' < BUCCA 'puffed cheeks', *dett* 'said' < DĪCTU, *frett* 'fried' < FRĪCTU, *grèll* 'cricket' < GRĪLLU, *oss* 'doorway' < Late Lat. ŪSTU (for ÖSTU), *rätt* 'broken' < RUPTU, *rās* 'red' < RUSSU, *sācc* 'dry' < SICCU, *tārr* 'tower' < TURRE, *tās* 'cough' < TUSSE, although here one hesitates to claim that such geminates boast uninterrupted status as such. (Rather, they were more likely supplied or "resurrected" by the short vowel + syllable-closing coda principle.)

Anschluss), spreading the first element of complex onset clusters, e.g., *boss* 'bust, trunk' < BUSTU, *cråspa* 'curl' < CRISPA, *cråsta* 'crest' < CRISTA, *foss* '(tree-)trunk' < FUSTE, *gråsta* 'crust' < CRUSTA, *måsst* 'must' < MUSTU, *påssa* 'fishing' < **pisca* (devb. n.), *ross* 'sweepings' < RUSCU 'butcher's broom', *tråsst(a)* 'sad, wretched' < TRISTE,¹¹² but the process never occurs following *a*, the intrinsic duration of which must have already counted as two moræ [= *a*]; i.e., in open syllables, *a* lengthened to the point of breaking into a diphthong > **æ*, since reduced to è—cf. Trauzzi (1901: *xv*, *xvii*), Coco (1970: 3), while even in closed syllables (where its aperture survived in a relatively shorter articulation), its intrinsic duration did not call forth caudal suppletion,¹¹³ e.g.,

CARU > *cær* 'dear' CABALLU/-A > *cavåll(a)* 'horse/mare'
 CLÅRU > *ciær* 'clear' CAPPÀ > *cåpa* 'cape, mantle'
 LİMÅCA > *lumåga* 'snail' CARRU > *cår* 'cart, wagon'
 MÅGU > *mæg* 'magician' CAITU/-A > *gått(a)* 'cat'
 PACAT > *pæga* '(he) pays' CRASSU/-A > *gråss(a)* 'fat'
 PACE > *pæz* 'peace' LACTE > *låt* 'milk'
 PALU > *pæl* 'pole' MASSA > *måsa* 'mass'
 SALE > *sæl* 'salt' UACCA > *våca* 'cow'

And, in like fashion, *båsta* 'it is enough', *guåsta* 'spoilt, wasted', (*p*)*låstra* 'stone griddle', *måsti* 'male' (< MASCULU), *nåspa* 'skein-winding reel', *påsta* 'dough', *råspa* 'rasp', *våsca* 'tub' (same as *fæsta* 'feast, holiday' < FESTA, *påsta* 'stall' < POSITA, *tæsta* 'head' < TESTA).¹¹⁴

¹¹² The same graphic expedient to distinguish lengthened consonants following short vowels was adopted by Norwegian, e.g., *fullt* 'full' vs. *fult* 'sly', *visste* 'knew' vs. *viste* 'showed' [vi.ste] vs. [vis.te] (Kloster Jensen 1962: 679-80).

¹¹³ The same as following other long vowels (descending from a Latin closed syllable which caused precocious compensatory shortening, thence laxing > opening), whence in turn a new cycle of commutation of intrasyllabic relations, i.e., VC > V: versus V: > VC, so reversed the etymological distribution of fortis/lenis consonants that Maranesi (1893: x) noted it as a significant source of interference for Modenese Italian:

Difetto capitale dei Modenesi è di pronunziare spessissimo semplici le consonanti doppie [italiane] e le doppie e viceversa.

E.g., Mod. *bòt* = It. *botto* 'blow' versus *bótt* 'sapper, shoot', Mod. *mòl* = It. *molle* 'soft, loose' vs. *móll* = *mulo* 'mule', *mòt* 'movement' vs. *mótt(a)* 'mute', *pela* 'skin' vs. *pella* 'pestle'.

¹¹⁴ Likewise the nasal fortition preceding a voiced stop (cf. sup. nn. 15-16) was blocked by stressed *å*, e.g., *gianda* 'acorn' < GLANDE, *grand* 'big' < GRANDE, versus *månn* 'world' < MUNDU, *månnda*, *vånnder*, etc. (cf. Trauzzi 1901: xxxii). Etymological coda/onset clusters, closing the stressed syllable, provided the context for long vowels or falling diphthongs (via the forementioned compensatory process of Late spoken Latin shortening, thence laxing/opening, and thus new lengthening), e.g., *dås* 'fleece of one sheep' < DOSSU for DORSU, *fåurna* < FORMA, *pévdga* < PERTICA, *tæpæ* < TALPA, *tåuren* 'lathe' < TORNU, *tåurta* 'cake' < TORTA (sc. PANIS) 'twisted (bread)'. In many areas *a* in this environment is presently [+long], but this length represents a more recent, secondary reanalysis of greater aperture deriving from earlier laxity as the result of brevity. For ex., *grånd*, *månnda* in middle Frignano (MO) seem to derive from a phase *grånd*, *månnda*, still preserved higher up in the hills, e.g., at Boccassuolo (Palagnano), whereas earlier lengthening of *a* in open syllables led to its breaking (**æ*: > **æ*: > *å*/e)—cf. Uguzzoni (1975: 68-9, 1979: 7).

Against the backdrop of this simple compensatory rule, the strong nasals were integrated as being *ipso facto* ambi- or heterosyllabic (i.e., the same as etymologic -NN-, e.g., PINNA > *pånna* 'feather', SOMN(T)U > *sånn* [= *sån*] 'sleep' with alveodental *n*); e.g.,

COTŌNEU > *gåggn* 'quince' **cérume(n)* > *ziromm* 'wax'
 FLŪME(N) > *fionm* 'river' FLŪMU > *fionm* 'smoke'
 LĪMA > *lemma* 'file' LŪME(N) > *lomm* 'light'
 PLŪMA > *piomma* 'feather' PRĪMU/-A > *premm(a)* 'first'

Save that nasal strength was here on a collision course, from a syllabic timing vantage, with the intrinsically long vowel *å*. I.e., here the scale of nasal strength (with its durational correlate) locked horns with that of vowel strength, and the latter came away the victor.¹¹⁶ E.g.,

BALNEU > *bågn* 'bath' ÆRÅME(N) > *råm* 'copper'
 **cania* > *cågn* 'bitch' CLÅMŌ > *ciåm* 'I call'
 CASTÅNEU > *castågn* 'chestnut' COR(T)ÅME(N) > *curåm* 'leather'
 CAPITÅNEA > *cavdågn* 'ditch' EXÅME(N) > *såm* 'swarm of bees'
 ARÅNEU > *rågn* 'spider' FLAMMA > *fiåma* 'flame'
 STANEU > *stågn* 'tin' LAMĪNA > *låma* 'blade'

Thus, in synchronic terms, the lenis allophones of /*m*/, /*n*/, /*l*/ and /*ŋ*/, standing as simple onsets (more broadly present outside the main stressed context), remain unaltered following *å*.¹¹⁸ The situation with Latin simple intervocalic -N- is perfectly analogous. Here, recall (cf. sup. §2.3), anticipatory (forward-spreading) nasalization occasioned the rise of a velar

¹¹⁵ This awkward trigraph (of Trauzzi & Ungarelli 1901: xviii, xx et passim) represents /*ŋ*/ (as already described by Gaudenzi 1889: 49). Older northern Italian texts preferred *gn*, e.g., OMod. *denigno*, *langna*, *rengno* (Bertoni 1909: xxiv), OGen. *lengni* 'boats' (Parodi 1898: 99), OVenet. *pengno*, *remangna*, *vadangna*, *vegnna* (Stussi 1965: xxviii), the same as in the Center-South (where modern pronunciations corroborate fortis coda/onset value).

¹¹⁶ For analogous reduction of the strong nasal -*nn*- in the lower Engadine (*šenna* 'manure cart', *pænna* 'feather') after *A* (> **åw*?) alone (*kona* > CANNA, *vøn* < UANNU), cf. Pylt (1897: 115).

¹¹⁷ Descending from -*nn*-, e.g., CANNA 'cane' > *cåna* (pl. *cån*—distinct from *cågn* < CANE 'dog' with velarization), PANNU 'cloth' > *pån* and *påna* 'cream' (= 'sheet risen to surface of milk')—distinct from *pånj* < PANE 'bread', SOMNU 'sleep' > *sån*—distinct from *sågnna* 'it rings' < SONAT. (Compare the characteristic gemination with short vowels, e.g., PINNA 'feather' > *pånna*).

¹¹⁸ Likewise there is no fortition of *m* before a voiced stop following *å*, as just observed (supra nn. 15, 16, 114) for *nd*, e.g., *gamba* (not **gamba*) versus *ciåmmba* 'colomba', *låmmb* 'lombo', *piåmmb* 'piombo'. Once again Uguzzoni's data from the Frignano suggest that *a* evolved through two stages. Initially it needed (t) to be relatively shorter in strong nasal, syllable-closing contexts than it was in open syllables (or before nasal + voiceless consonant sequences—for which, cf. supra §2.2), before (z) its intrinsically broader aperture feature could breed an enhanced length analysis; e.g., upper Frignano *gåmba*, *råm* seem to preserve the antecedent for mid-Frign. *gåmba*, *råm*, since earlier lengthening would have resulted in breaking and closing (*æ*: > *å*/e) as in mid-Frign. *kærmp* versus upper Frign. *kærmp* (Uguzzoni 1979: 7).

coda as transition to the alveodental onset, e.g., CŌRŌNA 'crown' > *cūrāŋ|na*, CŪNA 'cradle' *coŋ|na*, FOCŪNA 'furnace' > *fuzég|na*, FORŪNA 'fate' > *furtoŋ|na*, GALLĪNA 'hen' | *galeŋ|na*, JĒJŪNA 'fasting' (fem.) > *dzoŋ|na*, LŪNA 'moon' > *loŋ|na*; however, the process was blocked for *ā* just as for bimoraic nuclei comprised of diphthongs, e.g.,

CAMPĀNA > *campæ:na* 'bell' CATĒNA > *cadā|na* 'chain'

GRĀNA > *græ:na* 'seed'

FARRĀGINE > *frāi|na* 'forage'

FONTĀNA > *funtæ:na* 'fountain'

UĒNA > *vāi|na* 'vein'¹¹⁹

I.e., *ā* evolves in this position as in any other open syllable (cf. sup. for data). Forward transfer of nasality with its subsequent velar caudal transition was not acceptable where the extant stressed nucleus already counted for two moræ;¹²⁰ such transfer would by implication have resulted in extraheavy weighting.¹²¹ Only an account which takes as its premise a bimoraic canon for stressed syllables and integrates intrinsic durational properties (presented here hierarchically as *m* > *ŋ* > *n* > *ŋ* and *a* > *o*...) can explain the neat, three-way Bolognese distribution of lengthened vs. weakened vs. stable nasals. No less than Germanaschese, Bolognese shows that a nasalized vowel may easily count for two moræ, the same as a long vowel or a diphthong. Thus it is no accident that denasalization characteristically leaves a bimoraic nucleus in its immediate wake (*V̄* > *V*); as seen above § 2.5 at Albosaggia (SO) or in the Val d'Antrona (NO), in Latin,¹²² English, Middle and modern Indic (§ 2.2). Nor is it unexpected

¹¹⁹ Once again, as just mentioned for -NN- (supra n. 117), the reduction of *ā* to short *a* seems to be having as a consequence the generalization of -ŋ|n- in these formerly diphthongal contexts as well, to judge by modern forms such as *avāŋ|na* 'oats' < AUĒNA, *vāŋ|na* 'vein' < UĒNA, cited by Cocco (1970: 62—cf. also Schür 1974: 33-4).

¹²⁰ This timing-based block in the face of forward nasal shifting obtained in the lower Engadine even for word-final nasals. At Sent, for ex., mid-vowel breaking preceded nasal weakening and the resulting falling diphthong arrested the process, producing the asymmetry noted by Pult (1897: 94): "-n finale devient gutturale après *a*, *i*, et *u* romans: *paŋ*, *pāŋ*, *maŋ*, *duŋ* < DŌNUM, *būŋ*. Après une diphthongue ce changement n'a pas lieu: *ŋām* < FENUM, *bāin* < BENE, *vāin* < UENIT, *nāin* < RĒNĒ(S) 'dos'."

¹²¹ A collateral argument, although weaker since it departs from non-occurrence or *ex silentio*, can be found in the resistance of unaccented and, by implication, canonically monomoraic syllables to accept the forward spread of nasality. As a weight-enhancing feature, nasality would in these contexts have likewise engendered extraheaviness; e.g., LŪNA > *loŋ|na* 'moon' versus *lanuata* 'semi-circular kniŋe' (not **loŋ|nāta* or **luŋ|nāta*), PANE > *pāŋ* 'bread' versus *panait* 'loaf', *panāta* 'basket' (not **paŋ|nātt*, **paŋ|nātt*).

¹²² Where nasal loss left a long vowel as seen above (Archaic *cōsol* vs. Classical *CONSUL*, etc.), whereas other assimilations caused gemination if the foregoing nucleus were not already long, e.g., *DOSSU* (V arro) for *DORSU*, but *SŪSUM* (Cato) for *SŪRSUM*; thus, when the participial suffix *-to- was added to a root ending in a dental, long vowels and diphthongs called for shortened S; compare:

FODIŌ	→	FOSSU	but	{	AUDEŌ	→	AUSU	→	RĀDŌ	→	RĀSU	(not *RĀSSU)
PATOR	→	PASSU		{	CLAUDEŌ	→	CLAUSU	→	RĪDEŌ	→	RĪSU	(not *RĪSSU)
PERCUTIŌ	→	CUSSU		{	LAEDŌ	→	LĀESU	→	ŪTOR	→	ŪSU	(not *ŪSSU)

that the moraic structure, suprasegmental and overarching, should prove slower to change than individual segments in their narrower vicissitudes (cf. Hayes 1989).

4.4. Shifting nasalization as nucleus lightening: inverse proof of moraic constraints.

If nasalization adds timing weight to a nucleus (both from the vantage of articulatory complexity and by realigning the syllabic allegiance of a following nasal onset which develops a close, caudal bond), where a monomoraic ideal arises for unstressed syllables, as the counterpoise to the bimoraic norm in effect for those bearing the main stress, the former will tend to shed their extra nasal weight. This tendency could be implemented most simply in languages where forward transfer of nasality had reached the stage of fully-eroded oral closure, e.g., Valsavarensine *bōā*, *kampāā*, *lāā*, *vazčēā*, Valtorrens *bōā*, *plāā*, *plēā*, or Novara di Sicilia ARĒNA > *arrēā*, 'sand', AUĒNA > *uēā* 'oats', CATĒNA > *k'adēā* 'chain', FARĪNA > *ffaēā* 'flour', GALLĪNA > *gallēā* 'hen', LŪNA > *llōā* 'moon', MANU > *mēū* 'hand', PLĒNU > *čēū* 'full', RAGINA > *racčēā* 'grape', UĪCĪNU > *v'zēū* 'near'. Inasmuch as the nasal process tends to invest contiguous segments (with no oral interruption), nasalization frequently spreads to both vowels, as in Germanaschese CĒNA > *sīō* 'supper', ŪNA UĒNA > *ūō vēō* 'a vein',¹²³ or in much of southeastern Sardinia, e.g., LŪNA > *lūā* 'moon', MANU > *māū* 'hand', SONU > *sōū* 'sound' (Contini 1987: 135-6 & map 36). Such a situation was like to have obtained in pre-literary Gallego-Portuguese and pre-literary Rumanian. However, the tendency to bring unstressed nuclei down to monomoraic weight prompted their denasalization; such a lightening strategy underlies therefore the shifting of nasality that has long been observed in Rumanian and Gallego-Portuguese as a fait-accompli; i.e., after the nasality was restricted to the main-stressed nucleus, wherever this occurred preconsonantly, the upcoming oral occlusion could precipitate a homorganic nasalized oral closure as a form of transition which was even encoded graphically, e.g., Rum. CANŪTU > **kā(ŋ)ut* > **kā(ŋ)ut*¹²⁴ > *cārut* 'grey-haired', FŪLIGINE > *funīgine* 'soot' (DLR II, 1, 194b), **genucūlu* > *genuŋcū(u)* ~ *gerūncūu* 'knee' (DLR II, 1, 248a), **grānūceu*

(Leumann 1977: 197-8). Lengthening as a trace of vanished nasalization may even have been present with word-final vowels to judge by Quintilian's comments on the curious graphs of Cato the Elder, e.g., *dice* for *DIEM*, *dicae* for *DIAM*, *faciae* for *FACIAM* (Lindsay 1894: 61, 121 and cf. Allen 1965: 30).

¹²³ Cf. Genrè's (1970: 25) corrections to Pellis, where the "nasalizzazione si distribuisce nella stessa misura sulle due vocali contigue, interessandole tuttavia solo parzialmente. Più esattamente, di norma l'intacco nasale copre la seconda e rispettivamente la prima metà (o poco più) dei due suoni [-V'V-]."

¹²⁴ For rhotacism, cf. infra n. 127.

> *gráúni* 'grain' (DLR II, 1, 30b), (IM)PETĪGINE > *pecíngine* 'herpes, impetigo' (DLR VIII, 2, 376a), JŪNICE → **jū'ŭca* > *junínca* ~ *jurínca* 'heifer' (DLR II, 2, 56b), MANDUCŌ > **mā'ũncō* > *mā'ũnc* 'I eat', MANIPULU > **mā'ũc'lu* > *mā'ũnc'bi* ~ *mā'ũnc'biu* 'handful, sheaf', MINŪTU > *mā'ũnt* ~ *mā'ũnt* 'small, minute', **minū'tiā* > *mā'ũntiā* 'entrails, guts', PANICU > *pā'ũnc* 'millet', **rēnuculu* > *rā'ũnc'hi(u)* 'kidney, innards'—cf. Titkin (1900: 493), Nandriș (1963: 252-3). For older Portuguese, Cornu (1888: 752) had already presented many relevant correspondences, e.g., *bento* 'blessed' < **bēito* < BENEDICTU, *cinza* 'ashes, embers' < **cēiza* < **cinsia*, *gando* 'livestock' < **gādo* < **ganātu*, *maunça* 'handful' < **māūca* < **manūcea*, *miunças* < MINŪTIÆ, *paunça* < **panicea*, *zimbrow* < **zūibrow* < IŪNĪPERU, and García de Diego (1909: 193) added further ex.s from Galician, e.g., CĀNĀLICULA > **kā(ʰ)ac̄la* > **kāēla* > **kaēla* > *quenlla* 'ditch', **cnuculu* > **ke(ʰ)élo* > *coenllo* 'hare', FENUCULU > **fē(ʰ)ólo* > **feólo* > *fionllo* 'fennel', **genuculu* > *geonllo* (mod. *xionllo*) 'knee', IMPETĪGINE > **impedigine* > *empinxe* 'herpes, impetigo', **liniculu* > *lenllo* 'homespun cloth', MANIPULU > **manuculu* > *monllo* 'handful'¹²³; and Meyer-Lübke (1921: 561) correlated them with the cognate Rumanian development: "Dem portg. *maunça*, *miunça* entsprich rum. *grăunța*." These data, from Romance blocs at the geographic extremes, do not document directly the intermediate phase,¹²⁶ that of primary interest here, namely the shift of nasalization from atonic to tonic nuclei, prior to any obstruentization of the successive nasal to oral transition. However, that phase was clearly documented for Novara di Sicilia by Giovanni Tropea (1963—ALI II 6).

Before turning to the relevant data for intervocalic -N- and the shift of nasalization from its original (= etymological) seat to the adjacent stressed nucleus, a preliminary clarification needs be made: at Novara di Sicilia, in variation with the complete loss of oral closure recorded above, Tropea (1963) also documented a light apical tap [ɾ], apparently identical with the vestigial tongue movement corresponding to intervocalic R and L, e.g., PLĒNU

¹²³ Carmen Pensado (p.c. 16 June '90 and 1985: 48-50) warns that, where there was no oral stop to provide an occlusive transition, the nasality tended to evanesce altogether, e.g., GĒNERĀLE > *geral*, UENERĀ > *uieira*, UĪMĪNĀRU > *vimieiro*. Furthermore, the on-going tendency to denasalize could even operate before stops, e.g., *gādo* for *ganādo* < **ganātu*, *miúdo* < MINŪTU, *pada* < **panūta*, and was especially frequent before continuants (an environment of nasal jeopardy in general), e.g., ANĒLLU > *elo* (not **enllo*), FENĒSTRA > *fresta* (not **frensta*), FŪNĀRU > *fueiro* (not **fueiro*)—although counter-examples are not lacking, e.g., CĀNĀLE > *canle*, GĒNERU > *gero*, MAN(U)ĀLE > *manle* (but var. *mal*).

¹²⁶ The asterisked phases just cited above are my crude interpolations; although Lindley Cintra (1958: 70) cites vars. from the Foros de Castelo Rodrigo which suggest such intermediaries, e.g., *conellos* ~ *coellos* whence **coellos* as the antecedent to *coenllos*, *ganado* ~ *ganado*, implying **gādo* 'do for the transition to *ganādo*. Note that the process also occurred in southeastern Sardinia, e.g., GENUC'LU > **gēng'lu* > *gettgu* 'knee', RĒTNĀCULŌS > *oriūngus* 'reins', PASTINĀCA > *pištāngca* 'carrot'—"in alcuni parlari rustici [campidanesi]... in questi casi la n prende una coloratura velare" (Virdis 1978: 53).

> *č'ēu* ~ *č'iru* 'full', *ma dduzzēa* ~ *ma zuzzēa* 'dozen', FĪNU > *ffīru* 'fine', LANA > *llēqa* 'wool', **lur(i)dōna* > *lurdūra* 'slattern, sloppy woman', PANE > *pēri* ~ *pēri* 'bread', RĒGINA > *rēgēa* ~ *rēgēa* 'queen', **scāpellīnu* > **skāp'ellēu* ~ *skāp'ellīru* 'stonecutter, same as for **l'j'j'*, e.g., *bbrukkūrō* 'broccoli', *cauliflowēr*, CĀNĀLE > **kalamu* > *k'apēu* 'sprout, curved tile', CŪLU > *kēlu* ~ *kkuru*, **filanderīnu* > *ffrann'zēu* 'cloth-seller', PALA > *ppara* 'pole', **salēra* > *ssalēra* 'salt-cellar', SCALA > *skāra*, **taolino* > *t'avurēu* 'sm. table', UĒNĒNU > **velēnu* > *v'zēu* 'poison'. The variants with *r* seem to correspond with weakened *n* of later derivation, either as present in borrowings, e.g., *artallēra* 'kite' (*alalena*), *k'mūri* 'town administration' (*comune*), *mmēkk'za* 'sewing machine', *mmō'z'kku* 'monk', *ppis'zēra* 'shutter, blinds' (*persiana*), *pprumūri* 'lung' (*polmone*), *ruff'zēru* 'go-between, marriage-broker' (*ruffiano*), *ss'ott'mēza* (*settimana*), or as due to the internal relative chronology of nasal weakening, e.g., outside the main stress *bbastō* 'club' versus *bbastrūrēda* 'blow with club', *k'arēu* 'tile' vs. *k'arēu* 'tile-maker', *ppē* 'bread' vs. *pparit'zēri* 'baker' (< **panettiere*), *vēu* 'wine' vs. *v'zēt'u* 'weak wine', or where early apocope and precocious nasal transfer likely alternated with preservation of the plural marker *-i (which also occasioned metaphonic closing), as for the suffix *-ōnē/ōni > *-ō'j-ū'j > -ō'j-ū'ri, e.g., *bbardō* → plr. *bbardūri* 'packsaddle(s) for donkey', *bbussō* → *bbussūri* 'corner(s) of room, nook(s)', *bbrukkūrō* → plr. *bbrukkūrūri* 'cauliflower', *k'ap'pō* → *k'ap'pūri* 'capon(s)', *ppiččō* → *ppiččūri* 'pigeon(s)', *ssabbō* → *ssabbūri* 'soap(s)'. Even if in origin [V] and [Vɾ] were predictable allophones, their alternation now seems purely phonostylistic, allegro vs. lento, 127 (and even

¹²⁷ Curiously, Papani's correspondent for Novara di Sicilia, who fretted a good deal over nasality, never once alluded to any intercalated tongue tap: thus for Tropea's *bōra* 'bene' < BONU, one finds *bāa*, as in *bāa bāa* 'ben bene' ("ma la difficoltà sta nella pronunzia nasale"—1875: 281)—for the northern type **ben-bon*, cf. supra n.48. A fleeting tongue movement of some kind forms a not infrequent oral correspondent to an evanescent nasal closure, often in the more careful, lento register. Thus in the Valtouranche, Keller (1958: 66-70) perceived "r" where Merlo recorded only *ʃ*. On the other hand, Merlo (1938 I = 1959: 156-66) duly documented N- > r- in the Ligurian hinterland, e.g., Pigna (IM) BONA > *bona*, PLĒNA > *čepa*, SĀNA > *sara*. Nearby, Papani's correspondent for Perinaldo (IM) had explained his digraph -rr- as "un suono che non batterebbe né di n né di r", e.g., *bastōr-rā* 'to beat', *caicūrr-za* 'some one' (f.), *lūrr-za* 'moon' (1875: 362). (Compare Ferguson's comment: "I am told that in the Pawnee language, observers often can't tell whether it is an [r] or an [ɾ] that's being said"—1975: 4.) For similar "rhotacism" in Franco-Provençal, i.e., the type *ferēra* 'window', *jarra* 'hen', *rr ome* 'a man', cf. Morosi (1890: 373), Rousselot (1891: 221), Ronjat (1932: 141). In Provençal, rhotacism involved only the more resistant nasal in postonic syllables (i.e., in proparoxytones, e.g., *cassarri* > *cass'eri*, FRAXINU > *frax'seri*, RHODANU > *roz'eri*), and numerous toponyms in -ANCOS > -ARGUS, or in pretonic syllables (e.g., CANONICU > *can'oghe*, DOMINICU > *dimer'ghe*)—Anglade (1921: 126, 129, 163). For Rumanian, old texts register graphic variations such as *genune* ~ *genure* ~ *genire* 'abyss, gulf, ocean', *pure* ~ *purre* ~ *pure* 'to place, put' (Titkin 1900: 495), in which -rr- might reasonably represent *-VɾV; cf. Further OTransilvanian vars. ARĒNA > *arīna* ~ *arīna* 'sand', BONU > *burru* ~ *buru* 'good', QUEM > *cinre* ~ *cinre* 'whom'—Titkin (1905: 57) and, more generally, Rosetti (1924). The Tosk variety of Albanian splits on this point with Gheg, e.g., ARĒNA > *rēv'e* 'sand', CANABE > *kēr(č)ep* 'hemp', DIANA > *zēre* 'fairly', FRAXINU > *frax'sēr* 'ash-

led Tropea's respondent to the insertion of \check{V}_r and \check{V} in non-etymological contexts, e.g., *riarēa* 'nightstand' ← **ort'a(D)era*, cf. *riēu* ← **ori'vāle* < URINALE, *p'ariti'eri* 'baker' < **panettiere*, *p'pammēu* 'dovecot' ← **pa(D)umbēu* < PALUMBARIU).

For the process of nasal spread and denasalization now to be illustrated, the more evolved, rapid-speech variants inferrably formed the base for the shifting of nasality. E.g. CANISTRU > **kā'vēstru* > **kāvēstru* > *k'ā'vēstru* 'basket', CATENA > *k'kaēa* versus **catenācu* > **k'kadēzzu* > *k'kadēzzu* 'latch, lock, bolt', DIUNACULA > (Catal.?) **in + dev'i'ālla* 'riddle' > *nūv'i'ēlla* 'locusta verdissima' (lit. 'guess-what' = avoidance term? or, conceivably informant confusion, cf. *ndimmāglu* 'praying mantis' given for Recalmuto [AG] in VS 3, 139b), FENESTRA > **fē'vestra* > *f'ē'v'ēstra* 'window', FENUCULU > **fē'ōccu* > *ff'ōccu* > 'fennel', GALLĪNA > *lallēa* 'hen', versus **gall'v'eru* > *xall'v'eru* 'henhouse' and **gall'v'ēlla* > *gall'v'ēlla* 'ladybug', GENISTA > **gē'vestra* > *viē'v'ēstra* 'scotchbroom', **genuculu* > *viōccu* 'knee', **inguinālia* > *ngi'ālla* 'innards', **kaldā'v'ēllu* > *k'odaēllu* 'sm. cauldron for washing', **kampā'v'ottu* > *k'ampa'v'ottu* 'horse-bell', **manūcea* > **mā'v'izza* > *mmaūzza* 'little hand', **statiōnāta* > **staz'ō'āda* > *staz'ēda* 'seasoned, aged' (f. sg.), Gr.-Lat. TEGANU > **ti'sā'v'u* > *t'v'v'ēu* 'earthenware pan' vs. dim. *t'v'v'iaēllu*, TENACULA > **tē'v'ālla* > *t'v'ēlla* 'pliers, tongs', **tīn-ōccu* > *t'v'ōzzu* 'washtub', UĪNU > *vēu* vs. **vīnācea* > *v'ēzza*, **vīnītu* > *v'v'ēt'u* *dilute, weak wine*. It seems obvious that Nuorise forms such as *ff'ōccu* 'fennel', *viōccu* 'knee' are but one step away from the Galician cognates *fionllo*, *xionllo*, etc. (cit. sup.) Once again a prosodic constraint, in the present instance operating negatively (i.e., to lighten unstressed nuclei), has overridden the intrinsic scale of vowel receptivity to nasality (cf. supra §2.5), thus unstressed **ā* has been denasalized in favor of stressed *e*, *o* or *u* which could more smoothly tolerate the bimoraic timing weight implicit in nasalization, e.g., **grā'v'ēt'u* > **grā't'v'u* > *grā't'v'u* 'pomegranate', *k'ampa'v'ōt'u* 'horse-bell', *k'odaēllu* 'sm. cauldron', *mmaūzza* 'little hand'. To distill an axiom from such data, one might affirm that in dialects where a prosodic organization of mixed isochrony comes to the fore (i.e., positively associating duration and stress), the shorter, unstressed nuclei will be first denasalized.

tree', *tīna* > *trē* 'wine-jug', UEMĒNU > *v(ē)v'ēr* 'poison', UĪNU > *v'v'ē* 'wine', versus Gheg *rānē* *frāš'v'ēn*, *rānē*, *v'v'ē* (Pellegriani 1977: 14, 99, 145, Landi 1989: 112 et passim). In absolute final position, both dialects show radical weakening, but, in the indefinite inflected forms, the opposition resurfaces, e.g., Gheg *drā* 'tree, wood' → *drāni*, *mulli* 'mill' → *mulliini*, *pē* 'thread' → *pēni*, *zā* 'voice' → *zani*, and Tosk *drū/drūri*, *mulli/mulliiri*, *pel'peli*, *zē/zēri*. As a further variant tongue movement substituting the faded oral closure of *ŋ*, Tagliavini (1926: 57) observed a slight retroflexion in eastern Comelican (Campolongo and Costalta): [ʎ] 'leggermente invertita, ma in modo così tenue che solo un orecchio molto fino ed abituato e dopo un certo esercizio può accorgersene.'

A final corollary might here be added to the effect that the shortest nuclei of all, the intertonic, will most widely resist the forward spread of nasality and, in those cases where such nasalization does occur (as the final phase of a larger trend), these nuclei will shed nasality before all others. This is the "last-in → first-out" principle (cf. sup. n. 66) reformulated in prosodic terms. Thus in the Sardinian area of nasalization, the most widely denasalized items are precisely proparoxytones, e.g., ACINA > *āyia* > *āyia* 'grape', FEMINA > *fēmniā* > *fēmniā* 'woman', FLŪMINE > *frūmmi* 'river', HOMINE, > *ōmmi* 'man', *kāvuna* > *kāvūa* > *kāvua* 'bill-hook' — Wagner (1941: 63 [= 19842: 110-11]), Contini (1987: 456-7).¹²⁸ Glancing back at various of the northern Italian data cited above, protracted resistance to nasalization and precocity in denasalization can now be grasped as but two sides of the same prosodic coin. Compare, for the former, Mil. *āsen* 'donkey', *ōmen* 'man', *ōfen* 'orphan', *pēccen* 'comb', *trāpen* 'drill', *vēmnen* 'worm', as versus *bō* 'good', *cā* 'dog', *fē* 'hay' (Salvioni 1884: 96, 203) or Valvest. *ārzān* 'dike' < **argine* for AGGERE, *ēgan* 'elderberry' < **ēgano* for **evanu* ← EBULU, *ōman* 'man' as versus *bu* 'good', *fē* 'hay', etc., and, for the latter instead, Ventim. *ase* 'donkey' < ASINU, *burnaixe* 'borrage' < BORRĀGINE, *carixe* 'soot' < CĀLĪGINE, *frasciu* 'ash-tree' < FRAXINU, *rixe* 'rust' < AERŪGINE, as versus *bēŋ* 'well', *bōŋ* 'good', *grāŋ* 'grain' (Azaretti 1982: 98-9 and cf. sup. n. 72), Turin. *cardu* 'hinge' < CARDINE, *ērsu* 'dike, levee', < **argine* for AGGERE, *giuvu* 'young (man)' < IUUENE, *lūmu* 'light' < LŪMINE, *vermu* 'worm' < UERMINE (with earlier weak, indistinct or underdetermined *voyelle d'appui* acquiring velar character from **-ŋ*), versus *bēŋ*, *bōŋ*, etc.

5. Conclusion.

The aims of this paper are basically twofold:

(1) To set up some general parameters for nasal weakening grounded in their intrinsic, phonetic nature as affecting the production → perception → reproduction chain. Thus the various nasals have been arrayed here along a scale of intrinsic strength ($\mu > \rho > \nu > \eta$) which finds corroboration in diachronic evidence (greater > lesser stability). As extrinsic correlates to the nasal weakening process, a scale of vowel receptivity was illustrated (wherein aperture and position combined as follows: $a > o > e > u > i$), and, of greater significance, an accentuo-syllabic constraint (primary versus lower levels of stress).

¹²⁸ And, conversely, within the same zone, neighboring dialects preserve N in this context alongside nasalization and weakening elsewhere, e.g., Ruinas *ā* *ōmmiini* 'a man' (not **ōmmi* or **ōmmiini*), *sāmmiini* 'blood' < SANGUINE (not **sāmmi* or **sāmmiini*), alongside *oll'iōt* < *olitiini* 'arbutus', *prūtiū* < *prūtiini* 'dust', etc. (Contini 1987: 455-7).

(2) This latter, overriding criterion can only be explained in metrical (or temporal-prosodic) terms. In the Romance dialects examined, a nasalized vowel tends to count for two moræ, the same as a long vowel or a diphthong. Where a bimoraic canon arises for main-stressed syllables, these will first tolerate the forward spread of nasality and, therefore, eventual nasal coda weakening.¹²⁹ (Only later, if ever, will the nasal weakening processes pass on to unstressed nuclei, which, conversely, tend towards a monomoraic ideal in Romance). Thus the paper's second thrust is to substantiate the validity of a bimoraic canon for stressed syllables in—at the very least—northern Italy.

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¹²⁹ For Romance instances of nasal strengthening, as well as other forms of weakening (e.g., rhotacism), cf. Tuttle (forthcoming).

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