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Sonorant patterns in consonant clusters of West Slavonic –
What's wrong with the left edge of words?

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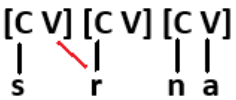
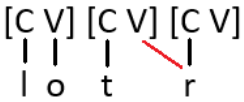
This study is aimed to describe syllabic consonant forming patterns within a CVCV Phonology frame. We analyse West Slavonic languages and Slovene with some evidence from English. A spreading analysis is generally used to describe syllabic consonant formation (Balogné Bérces 2005, Blaho 2004, Caratini et al. 2011, Scheer 2004). Szigetvári 1999, Scheer 2004, Garami 2019, among others, argue for a left-branching structure, in which a consonantal head spreads onto a vocalic position on its left while Rowicka 1999 and Blaho 2004 assume a right-branching structure. Previous studies argue against a monopositional nuclear representation of syllabic consonants.

The left edge of words, that is, sonorants in word-initial position are examined in this paper since they seem to show asymmetry in their behaviour. As Caratini et al. say the direction of syllabic consonant formation depends on which empty V position is active. In addition, more recently, Savu 2019 proposes that branching direction is determined by which adjacent empty V needs licensing/silencing. Following their idea we argue that SCF depends on whether the sonorant's own empty V or the empty V belonging to another CV slot is more attractive for the sonorant. This mechanism distinguishes types of word-initial SCF.

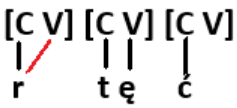
(1) Word-internal syllabic consonants in Slovak



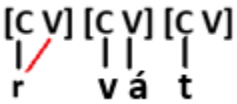
(2) Word-final syllabic consonants in Czech



(3) Word-initial trapped consonants in Polish



(4) Word-initial trapped consonants in Czech



Sonorants in word-internal or word-final position in Czech, Slovak and Slovene are left-branchers. In the case of Polish, Czech and Slovak the word-initial sonorant spreads to its right-hand-side V, but does not adopt its vocalic features – that is, it becomes "trapped" (a non-syllabic sonority violation). Apparently, spreading to a V position of a "neighbouring" CV slot makes a stronger relation than attaching to an own V. However, if we take a look at word-initial sonorants in Slovene in words like *rdeč* 'red' we face some difficulties (see Jones 2002). The trill at the beginning of the word is syllabic but has no possible V slot on its left-hand-side to spread to. Furthermore, in words like Slovak *hrdlo* 'throat' not every empty nuclear position can be licensed by left-spreading. In these cases the sonorants may spread to their right-hand-side. Our idea is that syllabic consonants prefer left-branching unless they are forced to spread right.

* The authors are listed in alphabetical order.

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Final Obstruent Devoicing, Vowel Lengthening and L.

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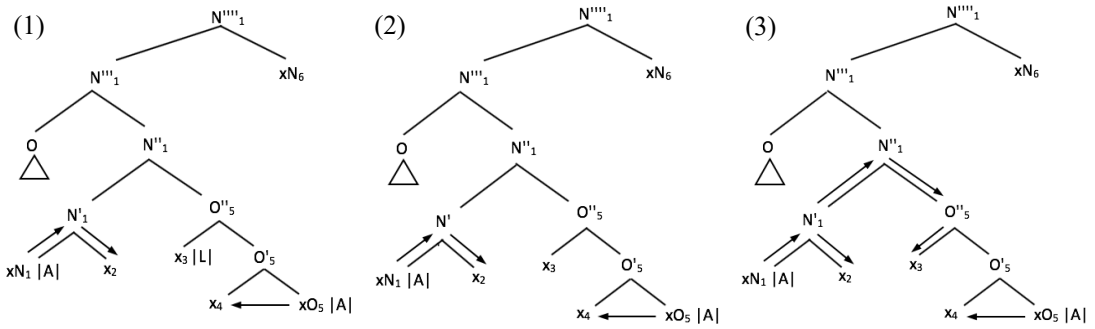
This paper considers the relationship between vowel length and final obstruent devoicing (FOD) in Northern Italo-Romance varieties with the aim to investigate its phonological properties and formalisation, and to shed light on the interaction between segmental properties (voicing) and structural ones (length). Whereas some scholars have entertained the hypothesis that there is no interaction between vowel length and FOD (Loporcaro 2015 a.o.), others advocated a more direct interplay between the two (Vanelli 2005, Iosad 2012, Torres-Tamarit 2015). I propose that there is a direct and non-arbitrary connection between FOD and vowel lengthening and that a formalisation couched within Government Phonology 2.0 (*GP 2.0*, Pöchtrager 2006, Kaye / Pöchtrager 2013) is better suited to capture this. The testing ground for my proposal is specifically provided by Friulian.

Vowel length in Northern Italo-Romance varieties has phonological status (Loporcaro 2015): [na:s] 'nose' / [nas] 'she is born' Milanese (Lombard); [go:t] 'forest' / [got] 'drop' Surmeiran (Romansh); [ma:t] 'alone' / [mat] 'crazy, m.' Marebbano (Central Ladin); [li:s] 'worn out, m.' / [lis] 'smooth, m.' Friulian. In Friulian the presence of a long vowel is always predictable (with obstruents) based on the voicing of the following consonant: lengthening ensues when the following consonants gets devoiced word-finally: [ˈlade] 'gone, f.' / [la:t] 'gone, m.'; [fuˈgut] 'small fire' / [fu:k] 'fire'; [uˈlive] 'olive, f.' / [uˈli:f] 'olive tree, m.'; [peˈza] 'to weight' / [ˈpe:s] 'weight'. In a rule-based account (Vanelli 2005), the interaction between length and FOD is captured by a rule as: V → V: | __ /C$_{[+voi]}$/ #. As the author points out, such a rule is arbitrary, as there is no reason why a melodic property like voicing should have any effect on the length of the preceding vowel. One of the main principles of Government Phonology is the Non-Arbitrariness Principle, that requires every phonological process to have a direct connection with its environment. To establish a non-arbitrary connection between FOD and vowel lengthening, I propose the following formalisation within *GP 2.0*. In *GP 2.0* the elements |ʔ| and |H| (responsible for stopness and voicelessness) are replaced with structural configurations (Pöchtrager 2006). Taking [la:t] as representative, we start with the structure for /lad/ in (1), where |L| (voicing) annotates x_3. In *GP 2.0* x-slots represent structural space, similar to skeletal points in the Autosegmental Model. xNs and xOs represent Nuclear and Onset projections (vowels and consonants).



In (2) FOD applies, deleting |L|. Since in *GP 2.0* every element occupies a structural position, |L|-deletion results in an unannotated empty position (x_3) that needs licensing (every empty x-slot must be licensed). In (3) the resulting empty x-slot gets licensed by the domain head xN_1 via m-command (the structural relation shown by the arrows from xN_1 to x_3). In *GP 2.0* length is encoded by how many x-slots are "taken up". When x-slots (structural space) are m-commanded, length ensues. Here, xN_1 ends up m-commanding x_3, resulting in a long vowel. In conclusion, this account predicts a direct link between FOD and vowel lengthening, as the data show, while establishing a non-arbitrary connection between the two.

Amazigh Bedar, Lucie Quellec & Laurence Voeltzel

The Glide Distribution in Kabyle

Berber Kabyle (North Algeria) has two glides [j, w]. Besides lexical glides (that appear in roots), [j, w] can also surface in the course of morphological constructions. Namely in the three following cases : (i) in the plural formation, (ii) in the construct state formation and (iii) at the boundaries between verbs/nouns and verbal/nominal affixes. In this presentation, we investigate the distribution of both glides at the junction of verbal/nominal bases and affixes. We will focus on three morphemes: *-aki* ('this one') and *-ihin* (that one over there') – which are used with nouns –, and *ara* (negation) – which is used with verbs.

An inflected noun can be followed by two suffixes: a demonstrative (*-aki* 'this one' or *-ihin* 'that one over there') and/or a possessive pronoun (e.g. *-jnu* 1sg). If they appear simultaneously, the order is strict. The examples in (1) illustrate the behaviour of both demonstratives.

(1) (a) axxam-aki [axxamaki] 'this house' islan-aki [islanaki] 'these husbands' aɣjul-aki [aɣjulaki] 'this donkey'
axxam-ihin [axxamihin] 'that house' islan-ihin [islanihin] 'those husbands' aɣjul-ihin [aɣjulihin] 'that donkey'
(b) θaziba-aki [θazibajaki] 'this necklace' isli-aki [islijaki] 'this husband' asaru-aki [asarujaki] 'this hook'
θaziba-ihin [θazibajihin] 'that necklace' isli-ihin [islijihin] 'that husband' asaru-ihin [asarujihin] 'that hook'

As the data in (1b) show, when the noun ends in a vowel, then [j] is inserted between the nominal base and *-aki* or *-ihin*, regardless the quality of the preceding vowel. If the noun ends in a consonant, then the suffix surfaces in its default form.

In verbal constructions including a negation, a glide appear in the same condition as previously illustrated, however the inserted glide is [w].[1]

(2) (a) ixðəm 'he did' ur ixðim ara [urixðimara] 'he did not do'
jərwəl 'he flew' ur jərwil ara [urjərwilara] 'he did not flew'
(b) izra 'he did see' ur izri ara [urizriwara] 'he did not see' (or, alternately, ur izr ara [urizrara])
iʃəffu 'he remembered' ur iʃiffu ara [uriʃiffuwara] 'he did not say' (or, alternately, ur iʃff ara [uriʃffara])

Once again, the quality of the glide is not related to the vocalic environment, as [w] is attested after all vowels [a, i, u].

The phonetic surrounding may be identical in the cases of nominal and verbal construction (1b and 2b), yet the inserted glide varies. One could posit that the quality of the glide is constrained by the grammatical nature of the base: [j] intervenes after a noun, [w] after a verb.

However, if we have a look at the extra data given in (3), we see that [j] can also be inserted after a verbal base. A verb can have three complements, which function as suffixes: indirect object, direct object and directional – in that specific order. The indirect object can start with a vowel, e.g. *-as* (3sg.m). In the same manner as in (1b) and (2b), if the verb ends in a consonant, the indirect object surface directly adjacent to the verb. However if the verb ends in a vowel, then [j] is inserted. Once again, the surrounding vocalic identity does not seem to play any role.

(3) jənna-as [jənnajas] 'he said to him' jəwwi-as [jəwwijas] 'he brought to him' ʃnu-as [ʃnujas] 'sing to him!'

Both glides appear in the same vocalic environment and under the same government conditions. We propose to analyse their distribution as follows: (i) the glides are indeed sensitive to morphosyntactical boundaries (some triggers [j], some trigger [w]). However, the question is not about the nominal vs. verbal nature of the boundary, but rather about how many boundaries separate the base from its suffixes. All dependents are not at the same level in the word structure; (in)direct objects maintain a closer relationship with the verbal base, than the negation. In other words, the boundary that separates the verb from the negation morpheme is stronger than the boundary between the verb and the indirect object. We argue that these specific relationships are made explicit by the distribution of glides.[2]

In (4a), we illustrate the inner organisation of the full verbal construction (when all complements and the negation are present).[3] In (4b), we illustrate the inner structure of the full the nominal construction. The square brackets with numbers represent the different boundaries.

(4) (a) 2[1[PERS. – V ROOT – PERS.]1 INDIRECT OBJ. – DIRECT OBJ. – DIRECTIONAL]2
jənna **j** -as -θ -id
he said *3sg.m* *3sg.m*

(4) (b) NEG. 2[INDIRECT OBJ. – DIRECT OBJ. – DIRECTIONAL 1[PERS. – V ROOT – PERS.]1]2 NEG
ur- s- θ- id- izri **w** -ara
neg. *3sg.m* *3sg.m* *he saw* *neg.*

(c) 2[1[GENDER/NUMBER – N ROOT – GENDER/NUMBER]1 DEMONSTRATIVE – POSSESSIVE]2
asaru **j** -aki -jnu
hook *this* *my*

When two vowels are separated by a boundary marked with 1, then the glide [j] is inserted; when two vowels are separated by a boundary marked with 2, then the glide [w] is inserted.

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1 In order to form negation, *ur* is added before the inflected verb and *ara* after the inflected verb. Note that a vowel [i] is also present in the root as a third negation marker in some verb templates (see Bendjaballah 2001).

2 A similar analysis, based on phases and *Distributed Morphology* (Halle & Marantz 1993, 1995) has been proposed by Piggott & Newell (2006) to account for the hiatus situation in Ojibwa.

3 Note that in this case, the complements clitisise and appear *before* the verb.

Conspiracies in Brazilian Portuguese: a CVCV analysis of epenthesis and codas

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Joaquim Mattoso Câmara Jr. (1972:46) remarked that one of the main diachronic tendencies that shaped the evolution from Latin to Brazilian Portuguese (BP) was "the tendency to reduce, or in certain cases completely eliminate, closed syllables." Indeed, a salient feature of BP phonology is the preponderance of open syllables – the result of both diachronic tendencies as well as active, productive synchronic processes.

In the variety of Portuguese spoken in the city of Rio de Janeiro, known as carioca (Callou 2009), there is a synchronic process at work which reinforces the general tendency towards open syllables: epenthesis. However, only obstruents trigger syllableopening epenthesis; /r l N S/ are possible coda segments in BP. This means there are two kinds of lexical codas – obstruents and sonorants – and two outcomes – epenthesis and realization as surface codas. However, the segments which can be realized as codas pay a price: they are all subject to allomorphy. In addition, although /S/ seems like an obvious candidate for membership in a natural class with /R l N/, it exhibits certain behaviors which make such a classification untenable.

This paper outlines an analysis in Government Phonology (GP) (Charette 1990; Harris 1990; Kaye et al. 1990; Harris & Kaye 1990), using the melodic theory of Element Theory (Kaye et al. 1985; Harris & Lindsey 1993, 1995; Backley 2011) and the prosodic theory of CVCV phonology (Lowenstamm 1996; Scheer 2004, 2012) to give a unified account of these divergences in outcome and coda allomorphy. It will be argued that the reason obstruents cannot be realized in coda position is due to two factors: their melodic complexity (Harris 1990; Cyran 2010), and the strong and weak prosodic positions described by the lateral forces of Government and Licensing.

Obstruents are melodically complex segments which may not be realized in a prosodically weak position – this position corresponds to the coda and is ill-formed in BP. Obstruent epenthesis is a solution to potential ill-formedness; the epenthetic vowel secures the obstruent a prosodically stronger position. On the other hand, /r l N/ are melodically less complex, and have no such well-formedness requirements: they are free to be realized as codas. They are however, subject to allophony, which is given a unified treatment as an identical loss of melodic material when in the prosodically-weak coda. Finally, this paper will argue that what the sonorants and sibilants have in common in being possible codas is an epiphenomenon of their melodic composition; they do not form a natural class based on their exact melodic composition.

Metrical government in Strict CV-Phonology

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The aim of the proposed presentation is to seek a principled account for the distribution of different types of vocalic position, perhaps by proposing a single algorithm that treats all vocalic positions deployed in the phonological skeleton. I will attempt to demonstrate that vowel-reduction and static/dynamic silence are but two different sides of the same coin, manifestations of *relative* and *absolute* silence in the phonological string. Ultimately all contentful vocalic positions are incorporated into the metrical hierarchy, and all empty vocalic positions are incorporated into the phonological hierarchy. The structural force that seems to control the distribution of different vocalic positions is government, which has two different manifestations: *proper government* and *metrical government*.

Contrary to mainstream assumptions, I wish to argue for bidirectional government in Phonology. Unidirectional theories have been promoted mainly in the phonological literature. For Scheer (2004) government is strictly right-to-left, while for Rowicka (1997) it is left-to-right. One of my goals is to demonstrate that government goes in both directions but in a principled manner, following a strict algorithm. Evidence in favour of the proposed framework comes from English stress-assignment, syncope, the distribution of different "consonant clusters". The minimal word-constraint in English can be also be accounted for in a more principled way if the proposed algorithm is adopted.

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Guillaume Enguehard & Mohamed Lahrouchi

Towards a derived typology of branching onsets

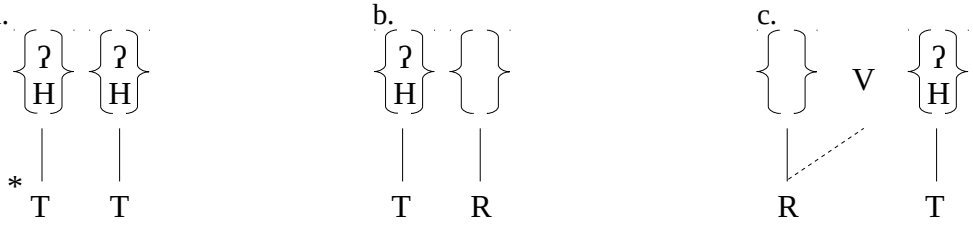
The purpose of this work is to derive a typology of branching onsets based on the Obligatory Contour Principle (OCP), and the CVCV skeleton introduced by Lowenstamm (1996).

Branching onsets have phonotactic properties that distinguish them from simple onsets and other consonant clusters: **i.** they can be split into subparts when reduplicated (see Lowenstamm 2003), **ii.** they are not subject to Grammont's Three-Consonant Law (see Scheer 1996), and **iii.** they are transparent to stress rules (see Scheer & Szigetvári 2005). In the CVCV framework, consonant clusters are represented with an intermediate empty nucleus. This empty nucleus conditions the Three-Consonant Law Law and the syllable weight. If branching onsets are not subject to either of these two phenomena, we should therefore admit that they form a consonant cluster without an intermediate empty nucleus (1).

(1)

Assuming that skeletal positions are but the root nodes of melodic feature bundles (Jensen 1994, Szigetvári 2004, Nasukawa & Backley 2005, Pöchtrager 2006, Passino 2017), and that the strict periodicity between C positions and V positions is the result of a dissimilation driven by the OCP (Carvalho 2002:22-23, Enguehard 2018), then an empty nucleus is optional only if two consonants are enough distinct to be adjacent without violating the OCP on each tier of the element geometry proposed by Harris (1994) (compare 2a with 2b).

(2)



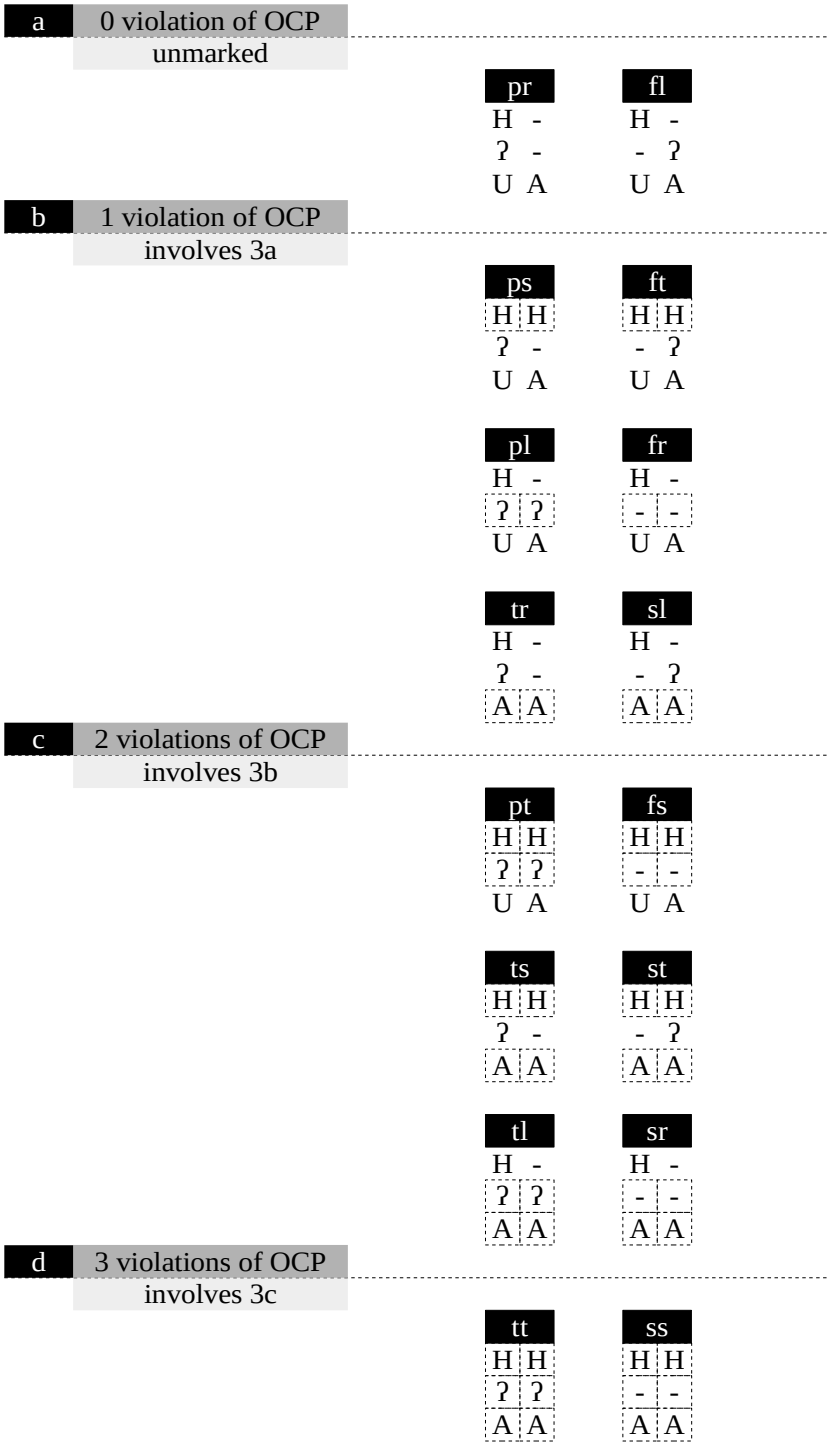
Finally, following Pöchtrager (2001) and Enguehard (2019), we assume that sonorants (consonants without a noise element |H|) must be associated to the nucleus on their right in order to prevent it from being dropped (2c). Hence, the absence of branching onsets starting with a sonorant.

If we admit all these principles, we arrive at an interesting prediction as to the typology of branch onsets If two consonants are sufficiently distinct to form a branching onset, then any set of even more distinct consonants can legitimately also form a branching onset. In other words, for any branching onset with n violations of OCP, there is a branching onset with *n-1* violations of OCP (3, following page).[1]

In conclusion, the typology of branching onsets can be partly derived from a concept as simple and fundamental as the OCP. Of course, the predictions are not in perfect adequacy with the available data on branching onsets, but the result obtained (including /tl/ implies /tr/) must be assessed in the light of its low theoretical cost.

1 OCP violations are indicated in boxes. The organization of the elements does not correspond to a particular hierarchy. The dash represents an absence of element. The place elements are represented side by side regardless of their value. According to Harris (1990), we assume that the stps contain both |ʔ| and |H|.

(3)



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Is Italian Swedish? An uncommon look at Italian laryngeal phonology

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The laryngeal phonology of Italian is quite underrepresented in the phonological literature, although it presents a unique panorama. Italian has a prevoiced series of initial lenis stops and a mildly aspirated series of initial fortis stops. The two sets are in phonological opposition upon the [voice] feature, still, we cannot identify postlexical regressive voice assimilation (RVA) in obstruent clusters (Huszthy 2019).

In the native vocabulary of Italian /sC/ is the only kind of obstruent cluster, which undergoes an interesting voicing process, labelled "lexical voice assimilation" in the literature (Bertinetto 1999); however, it is not in compliance with RVA known from classical voice languages, it rather seems to be an optional lenition process which spreads by analogy in synchrony. On the other hand, RVA is not detectable in the loanwords of Italian, where normally entirely voiced and entirely voiceless obstruents stand next to each other, e.g. *vo*[dk]*a*, *foo*[tb]*all*, *a*[fg]*ano* 'Afghan', *e*[kd͡z]*ema* 'eczema', *iceberg* [sb], etc. (Huszthy 2019).

The characterisation of Italian laryngeal phonology appears to be very similar to that of Swedish (Ringen & Helgason 2004; Helgason & Ringen 2008). The main phonetic difference between the two languages is that the fortis series of stops is heavily aspirated in Swedish, while only mildly aspirated in Italian; however, the lenis set is equally prevoiced, and neither languages present RVA. According to Laryngeal Relativism (Cyran 2011), there are languages which simply "overshoot" the minimal phonetic distance which is required to obtain the laryngeal contrast among obstruents, apparently so do Swedish and Italian. Aspiration found in Italian can also be considered a phonetic side-effect which does not bring phonological consequences, as well as prevoicing found in Swedish lenis stops is also considered phonologically irrelevant.

However, in the combined frameworks of Laryngeal Relativism and Element Theory Swedish and Italian can also be approached as h-languages (Balogné Bérces & Huszthy to appear). The category of h-languages practically coincides with that of aspiration languages, like most varieties of English and German. In these languages the fortis and lenis sets differ in structural aspects, and there is no laryngeal spreading (that is, RVA). However, the h-systems can also include languages whose laryngeal phonology has always been a riddle for phonologists, like Swedish. In fact, if the sufficient discriminability in production and perception is a major driving force in the phonetic implementation of phonological contrasts, languages with voiced lenis series and aspirated fortis series may belong to the same h-system.

As far as Italian is concerned, from a phonetic point of view we find substantial voicing in lenis obstruents and voicelessness in the fortis set; phonologically, however, we fail to identify true laryngeal activity. In the present system, this suggests that Italian can be categorised as an h-language similar to Swedish, making phonetic use of the sufficient discriminability between fully voiced and voiceless mildly aspirated stops.

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OCP, branching and consonant / zero alternation

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Compared to vowel / zero alternation, there are few discussions on consonant / zero alternation (Vaux 2002 for example). In CVCV framework (Lowenstamm 1996; Scheer 2004), Carvalho (2002) proposes that just as Government between nuclei, accounting for vowel / zero alternation, Government also exists between onsets and goes from left to right. He analyses German ['kaos] vs [ka'ʔo:tiʃ], shown in (1):

(1)

Following this idea, Luo (2013) has proposed an analysis of the glottal stop / zero alternation in Mandarin compounds.

However, recent claims in CVCV framework such as Enguehard (2018), Luo & Enguehard (to appear), Enguehard & Luo (2019) propose that lateral relations can be derived from branching and contour: consonants branch to each other as long as No-crossing-lines constraint is not violated, and OCP conditions vowel / zero alternation. Furthermore, Enguehard & Luo (to appear b) propose that symmetrically, vowels should behave as consonants: in a diphthong, vowels branch to each other.

One of the consequences of their claim on vowels is to simplify immediately the account of consonant / zero alternation. As examples, data in (1) can be reanalysed as follows:

(2)

In ['kaos], no glottal insertion since this would violate No-crossing-line constraint; in [ka'o:tiʃ], glottal stop must be inserted since otherwise, O_2 and O_3 will be both empty, violating OCP.

As we can see, the major consequence is to forbid two consecutive onsets or more to be empty phonetically. Evidence from Mongolian, when a root ends by a vowel and the suffix begins with a long vowel, an epenthetic [g] must arise: dalai + aas ‘sea-ABLATIVE’ must give dalai[g]aas (Rialland & Djamouri 1984).

This prediction may be contested (by triphthong for instance), but 1) triphthong should imply glide; 2) we must take into account that epenthetic consonants are often not noted in language specific academic traditions. In Japanese phonology, glottal stops (and other epenthetic consonants) are never noted. Consider: anei ‘shadow’, interpreted as [aN.e:] (N as moraic uvular nasal). In hereby attached recordings from http://research.nii.ac.jp/src/en/ETL-WD.html database, both native speaker pronounce [ʔaN.je:], since [aN.e:] implies four consecutive empty onsets, thus ill-formed. Of course, further studies must be done to verify the range of the present framework.

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Filiz Mutlu

Unite and resist: How is [m] like [s], and why is [s] so odd?

In MORPHOLOGICALLY SIMPLEX words, there are two homorganicity constraints with an exception each (1). Nasal stop+plosive (NT) is homorganic, with the possible exception of [m], e.g.: Turkish *zamk* 'glue', German *Amt*'office'. Likewise, plosive+fricative (TF) is homorganic, except with [s], e.g.: *axe, lapse.* Both these constraints, their direction and exceptions must ideally be derived from a single principle. Existing theories do not achieve this. I will offer a theory of phonology based on the *asymmetry principle* which addresses this issue, among others.

1) Homorganicity Chipewyan [t͡θéθ] 'hide', Cockney [k͡xɛˈb̥] 'cab', German *Zeit* 'time', Bavarian *hupfa* 'jump'

	p	**t**	**k**		**f**	**θ**	**x**	**s**
ŋ	*	*	ink	**p**	hupfa	*	*/?	**lapse**
m	**lamp**	**Amt**	**zamk**	**t**	*/?	t͡θéθ	*/?	**Zeit**
n	*	ant	*	**k**	*	*	k͡xɛˑb̥	**axe**

Phonetic linearisation of morpheme-internal phonological structure

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How to derive precedence relations between units is one of the key topics in discussing the phonetic externalization of linguistic structure. This is seen as one of the most controversial issues in the field of (morpho)syntax, since it is assumed that precedence relations are not formally specified in syntactic structure. To shed light on this issue, many different approaches to the linearisation processes have been proposed (Kayne 1994; Kural 2005; Abels and Neeleman 2012, Tokizaki 2013, 2018; Toyoshima 2013). In the literature on morpheme-internal phonological structure, on the other hand, the issue has not been widely discussed: only a handful of papers have dealt with linearisation, even though the properties relating to linear ordering are believed to lie within the scope of phonology (Anderson 1986, Takahashi 2004, Nasukawa 2011). Given this situation, the present paper discusses linealisation processes at structural levels below that of morphology.

The discussion is framed within the approach known as Precedence-free Phonology (PfP), an offshoot of Government Phonology and Element Theory (Nasukawa 2011, 2014, 2015, 2016, 2017abc; Nasukawa and Backley 2015, Forthcoming). Following most syntactic theories, but departing from other theories of phonological representation, PfP holds that no precedence relations between phonological units are specified. Instead, the linear ordering of segments, morphemes and words is taken to be a by-product of the phonetic externalization of head-dependency relations between linguistic units (Nasukawa 2011; cf. Takahashi 2004).

PfP echoes the syntax literature in claiming that the phonetic manifestation of head-dependency relations is parametrically determined. That is, in most languages of the world, the structurally dependent part (which is relatively more salient in terms of the extent of carrier-signal modulation) is assumed to be phonetically realized before the head. By contrast, there are also languages such as Kaqchikel, Arrernte and Kunjen in which the linealisation of phonological structure proceeds in the opposite direction, i.e. phonetically, the dependent is preceded by the head (Nasukawa et al. 2018). This mechanism functions consistently at all levels of morpheme-internal phonological hierarchical structure.

The phonetic interpretation of Elements: the case of the Italo-Romance dialect of San Valentino

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1. Phonetic interpretation in Element Theory

As pointed out by Harris & Lindsay (1995:47-49), differently from differently from standard generative phonological theory, where one of the main jobs of the phonological rule component is to transform abstract representational objects into ever more physical ones, in classic Element Theory phonological processes remain on the competence side and relate phonological forms. Phonological processes capture generalizations over alternations and distributional regularities and map phonological objects into other phonological objects. Initial representations and representations obtained from a phonological process are phonetically interpretable at every stage of the derivation Harris & Lindsey (1995:36). The phonetics/phonology interface in ET is then understood in terms of phonetic interpretation of Elements. However, different perspectives may be found in the literature concerning the relation between phonetics and phonology in the phonetic interpretation of element-based phonological representations. The traditional stance represented by Harris & Lindsey (1995) maintains that elements are universally interpreted according to their acoustic signature (A, mAss, lowness, I dIp, frontness, U rUmp, roundness) and combination thereof. Slight departures from these assumptions are supposed in Gussmann (2007) and Backley (2011), according to whom some deviation from the typical signature of the element are possible when acoustic space is available and no neutralisation of contrast derives from a slack phonetic interpretation. In the phonetics/phonology interface scenario proposed by Scheer (2014), on the other hand, the phonetic interpretation of an element may correspond to its physical pattern but it does not have to. According to Scheer (2014: 258ff), given two distinct modules, phonology and phonetics, communication can only take place through some kind of translation. In compliance to the workings of modularity, a spell-out operation that converts the output of phonology into units of the phonetic alphabet must be posited: a phonetic item α is assigned to a phonological item x in the lexicon. The two items of the correspondence are not related by a computation that is based on an independently stored list of instructions and modifies one in order to produce the other (phonological processes in standard generative theory). The match of the two items is in principle arbitrary and the exceptions to conversion are impossible (Scheer 2014: 259f.). The one-to-one relationship between phonological categories and their phonetic realization that one often witnesses, according to Scheer (2014:256) has a diachronic origin: freshly grammaticalized phonological processes are phonetically faithful. However, age and cramming of processes can change this situation, as is shown to be the case for Sanvalentinese.

2. The vowel system of Sanvalentinese (Upper-Southern Italo-Romance dialect)

Based on fieldwork data carried out in collaboration with Diego Pescarini, the vowel system of Sanvalentinese, an Italo-Romance dialect spoken in the village of San Valentino in Abruzzo Citeriore, is described and analysed, pointing out to a number of peculiar outcomes with respect to the Proto-Romance system. The result is a typologically rare inventory of vowels. The surface inventory includes two schwas (rounded and unrounded) bearing word-stress, three mid back rounded vowels and a very limited distribution of the high-front vowel. To account for these evolutions, an outline of the present system and a reconstruction of previous stages of the dialect are proposed. A suggestion is also made as to the phonological processes and interactions that may have generated such an atypical system.

The focus of this talk is on the phonological representation of the underlying vowel inventory, proposed on the basis of synchronic reduction process, contrast and phonetic form, according to the tenets of Element Theory. The phonological representation of the system that is suggested shows that, as opposed to the surface inventory, the underlying system is not so peculiar after all and in some cases the phonological expressions proposed underlyingly, do not correspond to phonetic form that instantiate the acoustic signatures of the element involved and no synchronic phonological processes

can lead to the representation. This suggests that elements are not interpreted according to specifications corresponding to their physical patterns but that they may entertain an arbitrary relationship with their phonetic spell-out.

In the case where elements are spelled-out inconsistently with respect to their physical signature (A spelled-out as *schwa* in tonic open syllable, among others), a suggestion is made concerning the diachronic path that may have brought to store the inconsistent phonetic item in the lexicon as corresponding to the element at hand. All the suggestions made are geolinguistically consistent with the phonological characteristics of the dialectological area investigated.

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Towards a non-arbitrary account of affrication

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This paper presents a new analysis of affrication of *d/t* in Japanese, (various dialects of) Brazilian Portuguese, and Québec French, as well as a general theory of affrication.

Problem. In Japanese (Labrune 2012, Yoshida 1996, 2001), *t–tʃ–ts* stand in a special relationship with each other, such that *t* occurs before [a, e, o], *tʃ* before [i] and *ts* before [ɯ]. (Analogously for the triplet *d–dʒ–dz*.) The distribution of *tʃ–ts* (and *dʒ–dz*) can easily be modelled as the spreading of the element **I** from a nucleus onto the onset with *tʃ*/*dʒ*. What is less clear is why an coronal stop is only allowed before a non-high vowel, but breaks down into an affricate before high vowels. The problem becomes even more vexing once other, slightly different affrication patterns are considered. Several dialects of Brazilian Portuguese (Cristófaro-Silva 2003) have *tʃ*/*dʒ* before [i] but *t*/*d* elsewhere. Again, palatalisation can be explained as **I**-spreading, but not affrication. Lastly, Québec French (Walker 1984) has *ts*/*dz* (not *tʃ*/*dʒ*) before [i/ɪ] and [y/ʏ] but *t*/*d* elsewhere. What is particularly instructive is that affrication occurs without palatalisation.

This paper argues that those three cases can be unified and that the affrication/palatalisation patterns are derivable from general principles. The analysis is couched within Government Phonology (GP) 2.0 (Pöchtrager 2006, Kaye & Pöchtrager 2013).

Proposal. From the above facts we can extract a descriptive generalisation: Affrication (though not necessarily palatalisation) occurs before a nucleus that contains **I** by itself, [i], or one that is empty, [ɯ]. This is true of all three languages. The following questions arise:

(a) What do these two kinds of nuclei (or their complement set) have in common?
(b) What singles out coronal stops for affrication, while labials or velars stay unaffected?
(c) What is the link between (a) and (b) that explains affrication?

P1, ad (a). Pöchtrager (2009, 2015) and Živanovič & Pöchtrager (2010) presented a theory of phonological binding that restricts the distribution of elements within phonological representations. Crucially, positions annotated with **I** and those without any annotation (empty positions) have the same binding requirements, i.e. they cannot be bound. This was argued for on the basis of an in-depth analysis of Putonghua, where the sequences **(d)ya*/**(d)wa* as well as **(d)way* are out, while *(d)yaw* is grammatical. The argument runs as follows: Onglides sit in a higher position than offglides, i.e. onglides can bind offglides. In **(d)ya*/**(d)wa*, the offglide position is empty (no glide following *a*) and bound by the onglide (*y*/*w*), hence both forms are out. In **(d)way* the onglide *w* binds the offglide *y*, ruling out **(d)way*. Empty offglides and the offglide *y* (element **I**) function alike. In *(d)yaw* the onglide *y* binds the offglide *w* (element **U**), but since there no binding restrictions on **U**, the structure is licit. The same asymmetry holds in English (diphthong *oy* but **ew*), cf. Pöchtrager (2009, 2015). This is exactly what we need for grouping [i] and (empty) [ɯ] together.

P2, ad (b). In many earlier versions of GP, coronals were characterised by the element **A**. In GP 2.0, **A** is replaced by structure, based (amongst other things) on data like these: In English, long vowels before clusters only occur if both members of the cluster are coronals: *haunt* vs. **haump*, **haunk*. That is, longer structures are made possible by (the "coronal element") **A**. Examples like those are also found in German, Finnish, Hungarian etc. (Pöchtrager 2012, 2013). Since **A** consistently interacts with structure, it must be structural itself. Under such a reinterpretation, objects that contained old **A** are now structurally bigger than those without. Thus, coronals are bigger than velars or labials, readily explaining why in English it is *d/t* that undergo lenition (tapping): They are the biggest objects and thus easy targets (Pöchtrager 2016). This also extends to vowel reduction (typically of non-high

vowels) in unstressed position as e.g. in Portuguese or Catalan (Harris 1997): Unstressed *o/e* is reduced to *u/i*. Again, this is expressible as the loss of structure in the weak part of the foot (Pöchtrager 2018). Lastly, extra size is the key to affrication as well.

P3, ad (c). Given that positions annotated with **I** and empty positions form a set for binding, cf. (P1), I will argue that in affrication we are dealing with a binding violation. Without going into the exact shape of the tree, it is clear that the additional structure characterising *d*/*t* must contain a position that can bind following [i]/[ɯ]. In order to remedy this violation, affrication occurs, which, I submit, consists in the removal of one layer of that extra structure in *d*/*t*. (Another layer remains to guarantee that *ts*/*dz* are coronal.) Following [u] will be unproblematic as **U** has no binding requirements, cf. (P1). Whether the resulting affricate *ts*/*dz* palatalises to *tʃ*/*dʒ* will depend on whether the following **I** spreads or not, but that is independent of affrication. Note also that mid-vowels like [e] do not trigger affrication, i.e. the **I** contained in [e] must be located in a position that does not violate binding.

Further issues. The present proposal bears a certain similarity to Yoshida (2001), who arranges elements in a feature geometrical tree and links affrication to structural properties of that tree. There are at least three differences to the present proposal, however. **1.** The constraints that apply in Yoshida's tree seem tailormade for Japanese, while the current proposal attempts to integrate affrication patterns in several languages into a larger theory of melodic distribution originally conceived for distributional patterns in diphthongs. **2.** Yoshida's account fares well for *tʃ*/*dʒ* but remains unclear for *ts*/*dz*. **3.** Yoshida's account is able to express changes from *k*/*g* to *tʃ*/*dʒ* which the present account – correctly, I submit – excludes. In order to go from *k*/*g* to alveopalatal *tʃ*/*dʒ*, not only do we need to add an **I** (the source of which could be in the environment), but also extra structure for coronality, and this extra structure can neither simply come out of nowhere nor can it come from the environment (typically a following [i]). The prediction is then that such changes are not phonological, and thus we expect them to be highly idiosyncractic and exceptional. Italian and Polish have such alternations, and the prediction that they are subject to a host of exceptions is correct, cf. Italian *di*[k]*o*/*di*[tʃ]*i* 'I/you say' but *evo*[k]*o*/*evo*[k]*i* 'I/you evoke'. This incorrect prediction is avoided by the present model, which also has a larger empirical fit than its predecessors.

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Blackfoot [s] can be a consonant or a vowel, or both

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[s] has always been noted for its special clustering abilities (Goad 2011), but in Blackfoot (Algonquian) its distribution is even freer than what we are familiar with from other languages: short [s] and long [sː] can occur in between consonants, and long [sː] and overlong [sːː] can appear between a consonant and a vowel (Frantz 2017, Frantz & Russell 2017). Goad & Shimada 2014, in a moraic approach, propose that [s] here can in fact occupy the nucleus (monomoraic or bimoraic), from where it can additionally link to a preceding and/or following onset. In this talk, I will re-analyse the pattern in strict CV (Lowenstamm 1996), utilising trochaic proper government (Rowicka 1999), and examine the questions it raises concerning Element Theory (Backley 2011) and the phonetic interpretation of phonological expressions. I will extend the analysis to additional data and to a possible origin of vocalic [s].

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Gradual phonotactics: Hungarian diminutives

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The availability of consonant clusters, typologically, historically, synchronically, has attracted much attention in phonological theory. Explanations for the absence of certain clusters abound. Many involve representations, using principles and parameters that make certain clusters illicit (eg GP and its forks), others discuss the difficulty of perceiving or distinguishing some clusters (or single consonants) in some environments (eg Steriade inter alii).

In this paper we show that consonant cluster types are arrangeable in availability hierarchies (which are strongly correlated with markedness). For example, the plosive-final cluster types can be arranged in the following implicational scale:

TT > NT < RT < ST < PT < MT

(where '>' = implies, '<' = is implied by, TT = geminate, NT = homorganic nasal+plosive cluster, R = liquid, S = fricative, PT = heterorganic plosive cluster, MT = heterorganic nasal+plosive cluster).

Languages select a contiguous interval of these scales. We predict that the further up a cluster type is on a given scale, the less available it is, ie the ratio of available and existing clusters of the given types decreases. So we expect more or as many of the possible homorganic nasal+plosive clusters to be available than of the possible liquid+plosive clusters, and more or as many of the latter than of the possible fricative+plosive clusters, etc. The state that some clusters are very common in a language and the state that others are never found are the two extremes of a gradually changing scale. Grammars often establish arbitrary cutoff points announcing rare clusters to be nonexistent.

We use data of the two-syllable, *i*-final diminutive template of Hungarian (eg *sün* 'hedgehog' > *süni, büntetés* 'punishment' > *bünti, Márta* > *Márti, történelem* 'history' > *töri, kolbász* 'sausage' > *kolbi, Zoltán* > *Zoli, izgalmas* 'exciting' > *izgi, Oszkár* > *Oszi, Magdolna* > *Magdi, sapka* 'cap' > *sapi*) to show that the scale can be used to predict the **ratio** of cluster simplification in diminutive formation.

The phonology of noun-class markers in Niger-Congo

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Abstract

The phonetic realization of most noun-class markers in Niger-Congo languages looks simple enough: a (C)V syllable with a mono-elemental vowel (/ɪ/, /ʊ/ or /a/). But appearances are deceptive, and in this paper I look in greater detail at the properties relevant to the realization of noun-class markers in Niger-Congo languages:

- segment structure(s),
- syllable structure(s),
- phonological processes affecting the marker or its host.

We will see that the differences between prefixed and suffixed noun-class markers is far more complex than many researchers imagine – not least because the phonological processes have not previously been recognised or correctly analysed. The discussion will centre around the facts of (prefixing) Venda and Yukuben, and (suffixing) Koromfe and Mòoré. We will look not only at changes to the shape of the affixes (e.g. Koromfe /gʊ/ → [oŋ]), but also at mutations (2 types in Venda) and vowel assimilation/harmony (in the other 3 languages).

Recursion and Phases in Phonology. Conceptual and empirical issues from the Italian 'innamorare' / to enamour

Michela Russo

The "lexical" Syntactic Doubling (*Raddoppiamento Sintattico* = RS) typical of Italian (and Central / Southern dialects) is characterized as in (1) by the gemination of the initial consonant/onset after certain words (triggers of RS) in a sequence W_1W_2:

(1) *a tte* → a_{cv}-te = a∅$_t$-te 'to you'
w_1 w_2 [$_{PP}$ a_{cv} [$_{DP}$ tte]]

In this "lexical" Italo-Romance RS the interpretation of the non-specified consonantal position present in the structure of the atonic W_1 depends on the syntactic relation assigned to the proclitic and to the category within a phrase: [Prep [Det [N…

If the trigger element is cliticised the RS applies by default. The W_1 that trigger RS (/a/ Lat. AD, /in/ IN...) are (pro)clitics with a syntactically fixed place in an XP (here above a PP): [$_{PP}$ a_{cv} [$_{DP}$ tte]].

In this talk we aim to discuss a special type of Syntactic Doubling, which affects W_1 (mostly prepositions) before a vocalic onset of W_2.

The Modern Italian forms (/in/ + Lex) *innamorare* 'to enamour', *innanzi* 'ahead', or Medieval Florentine *inn alto* 'Ita. in alto/up' show a pre-vocalic Syntactic Doubling with the gemination of the final consonant associated to the W_1 lexical entry (as [inn] /in/). See the following forms in (2):

(2) Prevocalic RS – Medieval Dialects and Modern Italian 'innamorare' 'to enamour'

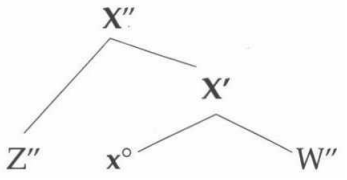
Florentine : /in/: *inn* alto - /non/: *nonn* à - /per/ : *perr* ispesa, *per*rò (Lat. PER HOC); *Lucchese* /in/: *inn* anni; *Senese* /in/: *inn* una, /per/: *per*rò; *Perugino* /con/: *chonn* uno, *Marchigiano* /in/: *inn* una, *Aquilano* /dis/ : *des*sonorare *Romanesco* /in/: *inn* erva, *Napoletano* /in/: *inn* auto /dis/ : *des*sarmare.

We assume that latent segments are lexically non linearized, and syllabification is established on hierarchical relationships in the sequence W_1W_2.

(3) Latent segment /in$_{cv}$/
i - n - P
/
∅c

The prevocalic "liaison" and gemination are an effect of cliticization. We analyse prepositions or determinants W_1 as prenominal heads. The inert or active role of the discontinuous segment is decided by syntax: the discontinuous segments are activated only if they are involved in a resulting process of an upper syntactic head. The gemination is obligatory and occurs when the clitic is placed to the left of a lexical category.
In our model the syllabic structure has an X-bar structure (4):

(4) Syllables



In (4) Recursion potentially involves Z″ and W″, since they can have the same structure of X″: a dependent of a head (here W″) is a maximal projection, and Z″ is an adjunction.

Thus, a proclitic preposition as /in/ has a hierarchical CV recursive small syllable after i° head, as a consonantal trace of /n/ which is the segmental coda syllabified as onset in : i_{cv}.nal.to = $i_{\varnothing n}$.nal.to. We observe two Phases:

(5) $[_{PP}\ [_{P}\ i°\ [_{AdjP}\ [_{Adj}$ nalto] Move > $[_{PP}\ [_{P}\ i_{\varnothing n}\ [_{AdjP}\ [_{Adj}$ .nalto] - Geminate = [innalto]

The first Phonological Phase gives the syllabification of /n/ as an onset (*liaison*: [i.nalto]) leaving a consonantal trace as a recursive syllable CV in the coda of the proclitic (i_{cv} = $i_{\varnothing n}$).

In the second Syntactic Phase, the syntactic head P triggers gemination according to the rule that RS always requires a geminate triggered by a syntactic head and licences syntactically the discontinuous (latent) segment associated to the lexical entry of the proclitic.

(6) *Phases*

- Unmarked Form

$[_{P}$i-$\varnothing_{l}\ [_{N}$ l-O-K-o-N]] /in/ + /lok(o)/ = [illoko] RS _C

- Marked Form:

$[_{P}$i-$\varnothing_{n}\ [_{Adj}$ n-a-l-t-o-Adj]] /in/ + /alto/ = [innalto] RS_V

The Cø syllables, when a language accepts it, is not constrained by lexical or morphological availability of the nucleus. Cø can only be licensed in so far as it is immediately adjacent to a syllabifying domain.

The nasal liaison (to the vowel) indicates an autonomous (re)syllabification: [i.nal.to]. Successively, a linearization process starts in the syntactic head [$i_{\varnothing n}$] and the dependents [n] and [alto] are treated successively as a single domain [nalto]: [$i_{\varnothing n}$.nal.to].

In order to achieve a phase, the linearization must be able to start in both a head and a dependent head. The process that starts from the highest head does not integrate its dependent in the lexical status, however, it integrates it in a status resulted from the interpretation of the resyllabified structure: [$i_{\varnothing n}$.nal.to]. The form [in.nalto] have "two" prefixes as a result of two different phases.

The syllabification immediately identifies a head in the XP, thus, the liaison selects and activates the phonic latent consonantal fragment as a final consonant. It is the phonological interpretation of the structure that produces a direct effect of cliticization.

Another important consequence follows from this. These forms with a prevocalic geminate ($[_{P}$i-$\varnothing_{n}\ [_{Adj}$ n-a-l-t-o-Adj]]) do not allow themselves to be treated in a phonological and morphological conception of a Phase centred on the Root. These forms exhibit a Phase and iterative treatment effect of syllabification that affects the prefix and not the Root. In the prefixed forms it. *innanzi* and *innamorare*, the morphology comes from the phonological interpretation of the lexical and syntactic structures. The Phase effect cannot be deduced from Roots.

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Again on the representation of long and short syllabic consonants in Czech and Slovak

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1. Introduction

This talk contributes to the debate on how to represent West Slavic (Czech and Slovak) syllabic consonants in the CVCV sub-branch of Government Phonology (Scheer 2004). Long syllabic consonants in Slovak are proposed to not be linked to a skeletal C slot, which means that they have the same representation as Slovak vowels. As for short syllabic consonants, their branching direction is not fixed. They can be linked to the V either on the left or the right of their home C slot, depending on which V needs melody for a structure to be saved.

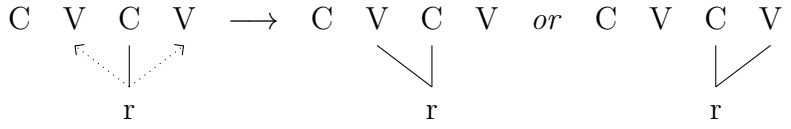
2. Long syllabic consonants

Both Czech and Slovak have short vowels and long vowels. However, while Slovak has long and short syllabic consonants, Czech only allows long vowels and bans their syllabic consonant counterparts. Long syllabic consonants have been argued to be linked to two V slots, in addition to their home C slot, which leads to a 'ternary branching' structure. I propose a ban on ternary linking, and suggest capturing the differences between Czech and Slovak through the links that are present in the lexicon. In Slovak, the link to the C slot has been lost, which allows the segment to link to two V slots. By contrast, Czech maintains the link to the C slot. This leaves the segment with only one more link available. As such, Czech syllabic consonants can only ever be short.

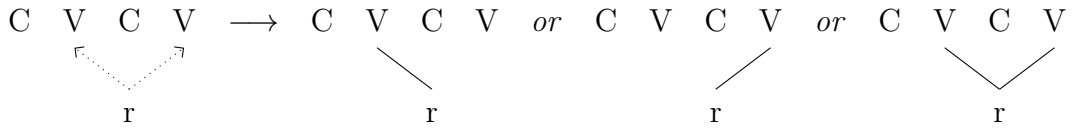
3. Short syllabic consonants: branching direction

Previous studies on the topic agree that a short syllabic consonant should be represented as linked to a C slot and one of the neighboring V slots. The question is which of the slots it should be. Arguments have been brought forth for both left-branching (Scheer 2004) and right-branching (e.g. Blaho 2001, 2004). It has even been proposed that the branching direction is parametric, with Germanic being left-branching and Slavic being right-branching (Caratini et. al 2011). All of these studies have in common the assumption that syllabic consonants always have the same representation, at least within the same language. I explore the possibility that both branching directions can co-exist in one language. This will be argued on the basis of cases in which one structure needs left-branching (right-branching would not ensure that all empty nuclei are governed), while another structure in the same language needs right branching. Such cases exist in both Czech and Slovak, which is an indication that the branching direction is not fixed.

(1) Czech syllabic consonant



(2) Slovak syllabic consonant



4. Conclusion

I argue that syllabic consonants do not have a uniform representation, even within the same language. Czech and Slovak provide an excellent opportunity to observe various possibilities. Two CV units are at the disposal of a syllabic consonant, with several options for linking. A link to only one V slot on either side produces a short syllabic consonant, while being linked to both V slots makes for a long counterpart. In addition, whether a syllabic consonant has all the powers of a vowel depends on whether the melody is anchored to a C slot.

— Government Phonology Round Table 2019 —

Accent Patterns of Japanese Verbs

Thomas Schökler

While nouns in Standard Japanese exhibit multiple pitch-accent patterns, verbs (as well as adjectives) seem form a two-pattern system, only distinguishing between accented and unaccented stems. Within the inflectional paradigm, however, the accent kernel (i.e. the position after which the pitch contour falls) is not linked to a specific vowel in the stem, but seems to shift depending on the suffix(es): *shiméru* 'close', *shimemásu*, *shímeta*, *shimeraréru*, *shímechau*, etc. Compared to the numerous elaborate explanations for nouns, previous accounts of this phenomenon have been rather limited, for example focusing on specific suffixes (Y. Yoshida 1995 for *-ru* and *-ta*), or simply stating that there have to be "specific rules" (Labrune 2012) for the various suffixes.

In this talk, I would like move away from the idea of assigning individual rules to each suffix. Instead, I will propose a typology classifying the suffixes based on their inherent properties, where the different accentual patterns are the direct result of those properties. Also I want to discuss cases of verbs not perfectly fitting into the two-pattern system, like *káeru* 'go back' or *kotáeru~kotaéru* 'answer'. Finally, after presenting the problems and possible solutions, I would like to have an open discussion as to how to treat these patterns within a GP framework.

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Cornish Consonant Mutation and Floating Operators

by

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Cornish, like all Celtic languages, has a series of words, mainly prepositions and determiners which trigger a mutation of the onset consonant of the following word. This study aims to give a review of the types of mutation which take place and an analysis using element theory. A table showing the mutations along with their elemental analysis is given below:

Unmutated consonant	Soft mutation	Aspirate mutation	Hard mutation	Mixed mutation
p ({H,ʔ},U)	b ({ʔ},U)	f ({H},U)	p ({H,ʔ},U)	p ({H,ʔ},U)
t ({H,ʔ},A)	d ({ʔ},A)	th ({H},A)	t ({H,ʔ},A)	t ({H,ʔ},A)
k ({H,ʔ},_)	g ({ʔ},_)	h ({},H)	k ({H,ʔ},_)	k ({H,ʔ},_)
b ({ʔ},U)	v ({L},U)	b ({ʔ},U)	p ({H,ʔ},U)	f ({H},U)
d ({ʔ},A)	dh ({L},A)	d ({ʔ},A)	t ({H,ʔ},A)	t ({H,ʔ},A)
g+unround ({ʔ},_)	Ø	g ({ʔ},_)	k ({H,ʔ},_)	h ({},H)
g+round ({ʔ},_)	w ({U},_)	g ({ʔ},_)	k ({H,ʔ},_)	hw ({},H)({U},_)
gw ({ʔ},_)({U},_)	w ({U},_)	gw ({ʔ},_)({U},_)	kw ({H,ʔ},_)({U},_)	hw ({},H)({U},_)
m ({L,ʔ},U)	v ({L},U)	m ({L,ʔ},U)	m ({L,ʔ},U)	f ({H},U)
ch ({H,ʔ},I)	j ({ʔ},I)	ch ({H,ʔ},I)	ch ({H,ʔ},I)	ch ({H,ʔ},I)
	Addition of L (cancels with H) – loss of ʔ if there's a complex operator	Simplification of operator	Addition of H	Complex

This study is in its initial stages and not all the changes have been completely examined, but as can be seen a preliminary analysis would suggest that the mutations usually involve a change to the operator of the onset head, either by adding an element or deleting one. The addition of an element would suggest an underlying 'floating' onset operator following the words which trigger the mutation.

The analysis will obviously need to be fleshed out more fully, but I hope to get some input as to the initial analysis.

Shanti Ulfsbjorninn

Bare Element Geometry: beyond x-bar in phonology

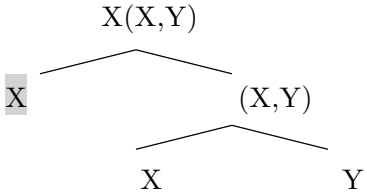
Background

The question of how elements come together to form complex expressions dominates GP work on melody. Previous approaches tend to use diacritics, tiers, templates ({_}_), or an x-bar schema as the organising principle of element combinations. The problem shared by all of these approaches is the stipulation of the tier, template or schema. The x-bar approaches attempt to justify their phonological schema by homology to syntax (GP 2.0 (Pöchtrager 2006, Kaye & Pöchtrager 2013) (cf. Rennison & Neubarth 2003))), however, in the *Minimalist Program*, syntax itself no longer operates with x-bar phrase structure (Chomsky 1993, 1995; 2004).

Proposal

In this talk, I will propose a novel framework of element combination called: *Bare Element Geometry* (BEG). This is based on the *Bare Phrase Structure* of the Minimalist Program. The advantage is that its foundations rest on general principles of combination and the first order geometric properties that result from this computation. BEG builds expressions from the simplest combinatory mechanism: Merge (ibid.). This is conceptually similar to *Precedence Free Phonology* (Nasukawa to appear), except that BEG's use of Merge to build structure deliberately refers only to melody.[1] Moreover, in BEG there is at most one application of external Merge and one application of internal Merge.

In these terms, I will formally define the two ways an expression can be complex and offer the *asymmetric theory of headedness*. This correctly predicts two basic types of vowel-reduction, one based on cardinality (number of elements in a set) and the other based purely on hierarchy. BEG crucially shares Breit (2013)'s observation that a headed-expression must contain the headed element as part of its overall set. Except that in Breit's formulation, the possibility of a head (position) is still necessarily stipulated. In BEG headedness emerges entirely from asymmetries in hierarchy (asymmetric c-command), including the possibility of Self/I-Merge.

(1) 

The head is grey-shaded

Consequently, single element expressions can be unheaded: (X) or headed: (X(X,Ø)).[2] While, two element expressions can come in three unique configurations, unheaded: (X,Y) & headed: (X(X,Y) or (Y(X,Y)). As for combinations of 3 or more elements, BEG seems to make the prediction that three-elements expressions can never be (truly) headless.

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[1] Melodic and skeletal structure are two distinct tiers related to each other by association lines (not projection).

[2] (X,X) is a meaningless because (X,X) = (X,Ø) = (X)

Advantages

This proposal has some further advantages.

If headedness is fundamentally a relational property between elements (Harris 1994), there is a paradox in having empty headed-expressions: ({X}_) (Kaye 2001 (see also Faust (2017))). In BEG this is easily avoided, as there can be no empty headed expressions.

Similarly, if headedness is relational, there is no paradox created by simplex expressions that are headed: |I| ⇔ [i] vs. |I| ⇔ [ɪ]. Traditionally, this is seen as a problem: what does it mean for an element to be a head in isolation?

Another benefit of the asymmetric-head hypothesis, is that BEG avoids the problem of having empty expressions (Ø) (empty nuclei) in languages that also have the following Licensing Constraint (LC): *all phonological expressions must be headed* (Charette & Göksel 1998). This is paradoxical because satisfying the LC means that all phonological expressions must contain an element in the head position. But how then can the language have empty nuclei/expressions? In BEG this problem evaporates because the LC is automatically redefined as in (2).

(2) All Expressions Must be Headed

All nodes must be asymmetrically c-commanded.

Empty expressions, by definition, have no nodes, therefore, the condition in (2) does not apply to them.

Constraints on p-licensing in Cairene Arabic

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This paper analyses the three phonetic realisations of the feminine suffix in Cairene Arabic in light of GP 2.0 (Pöchtrager 2006). This suffix is realized as [t], [it] or [a], depending on what precedes and follows it, and interacts with vowel shortening, vowel epenthesis and vowel deletion, as seen below.

1. Underived feminine nouns ending with the feminine suffix
   ˈʃaʔʔ-**a** 'apartment' ˈsˤuːr-**a** 'photo'

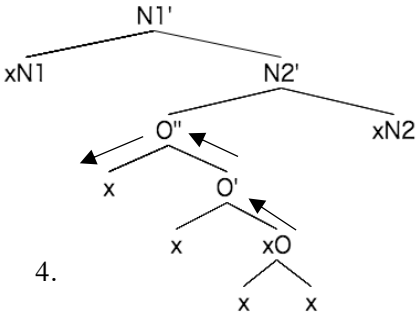
2. Feminine noun derived by attaching the feminine suffix to a masculine noun
   ˈsˤaːħib 'friend (s.m.)' → ˈsˤaħb-**a** 'friend (s.f.)'

3. The same three nouns followed by possessive pronoun suffixes

'apartment'	'photo'	'friend'	
ʃaʔˈʔ-**it**-u	ˈsˤur-**t**-u	sˤaħˈb-**it**-u	his
ʃaʔˈʔ-**it**-ha	sˤuˈr-**it**-ha	sˤaħˈb-**it**-ha	her
ʃaʔˈʔ-**it**-hum	sˤuˈr-**it**-hum	sˤaħˈb-**it**-hum	their
ʃaʔˈʔ-**it**-ak	ˈsˤur-**t**-ak	sˤaħˈb-**it**-ak	your (s.m.)
ʃaʔˈʔ-**it**-ik	ˈsˤur-**t**-ik	sˤaħˈb-**it**-ik	your (s.f.)
ʃaʔˈʔ-**it**-ku	sˤaˈr-**it**-ku	sˤaħˈb-**it**-ku	your (pl)
ʃaʔˈʔ-**it**-i	ˈsˤur-**t**-i	sˤaħˈb-**it**-i	my
ʃaʔˈʔ-**it**-na	sˤuˈr-**it**-na	sˤaħˈb-**it**-na	our

This paper proposes that the feminine suffix is the sequence of two empty nuclear heads with an onset flanked between the nuclei as in 4, where, among other things, the onset has the *a*-coronal adjunct (Pöchtrager 2010).

4.



In an attempt to account for the forms above, a focus is placed on the phonetic realisation and non-realisation of xN1. xN1 is phonetically unrealised if p-licensed and realised if not p-licensed. This paper argues that xN1 is not p-licensed if (i) "xN*", a nuclear head preceding xN1 is p-licensed, (ii) xN* m-commands its complement, or (iii) xN1 licenses its onset to m-command xN*'s complement. The possibility of the *a*-coronal adjunct being moved by *Move α* is also discussed.