Markedness in Prominent Positions*

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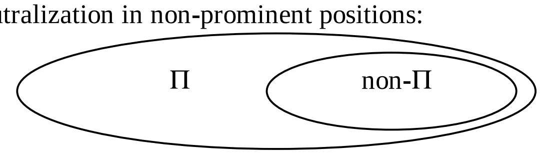
1. Introduction

This paper is about the relation between contrast and 'prominent positions' – i.e. onsets, stressed syllables, and root-initial syllables.[1]

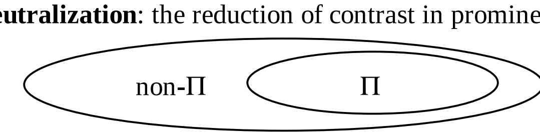
A number of works have assumed that only one of the three logically possible relations between contrast and prominent positions exists: namely that contrasts in non-prominent positions are always a subset of those in prominent positions. This situation is illustrated by the Venn diagram in (1), where the set of elements in prominent positions (Π) is a superset of those in non-prominent positions (non-Π):

(1) Neutralization in non-prominent positions:

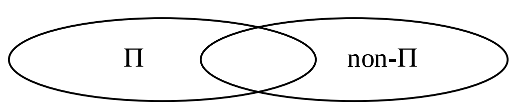


In this paper, I will argue that the other two possible relations also exist, illustrated in the diagrams in (2):

(2) (i) **Π-Neutralization**: the reduction of contrast in prominent positions.



(ii) **Π-Allophony**: where alternation in phonemic realization is conditioned by being in a prominent position.



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* John McCarthy, Steve Parker and the audience at HUMIT provided me with a number of useful comments. Also my thanks go to Patrik Bye and the audience at RUMJCLAM 3 (1998) for their input on an earlier version of this paper.

[1] There may well be other prominent positions, but my attention will be mainly restricted to these few here (see §4 for further discussion, and Trubetzkoy 1939, Steriade 1995, Beckman 1998).

However, I will argue that there is a difference between the 'classic' type of neutralization illustrated in (1) and the types in (2): Π-Neutralization and Π-allophony only target classes of segments defined in terms of sonority, not by subsegmental features (e.g. [labial] and [back]).

To help account for the situations in (2), I propose that prominent positions are freely combined with Prince & Smolensky's (1993) margin- and nucleus-sonority constraints. While P&S's constraints have the form *K/Σ (K is a syllable constituent and Σ is a sonority level), the prominent-position counterparts have the form *Π/K/Σ, banning a segment with sonority level Σ in syllable constituent K from appearing in prominent position Π.[2] Furthermore, to fully account for the fact that Π-related processes only refer to classes defined by sonority, I propose that constraints of the form *Π/Feature do not exist.

In section 2, I present the prominent-position sonority constraints in more detail. Section 3 deals with the predictions that these constraints make in regard to ranking permutation; various rankings of the Π-sonority constraints with faithfulness and other markedness constraints produce Π-neutralization, Π-allophony, and even prominence-driven stress. Other predictions of the *Π/P/Σ constraints are discussed in section 4. The lack of Π-related processes that refer to classes defined in terms of features is discussed in section 5. Conclusions are presented in section 6.

2. The Π-Sonority Constraints

The aim of this section is to introduce the constraints responsible for neutralization and allophony in prominent positions. The basis of these constraints is two standard assumptions about the relation between syllable constituents and sonority:

(3)
- Syllable margins (onsets and codas) prefer elements of low sonority.[3]
- Syllable nuclei prefer elements of high sonority.

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[2] Recent work that also invokes markedness constraints on prominent position includes Parker (in prep.) and Smith (to appear), although both works have significantly different motivations for and implementations of their proposals.

[3] This follows Prince & Smolensky's formulation. However, the sonority preference of syllable codas is not uncontroversial. I will adopt P&S's formulation here for the sake of expository convenience; the cases discussed below do not shed any light on this issue (for relevant discussion, see Parker (in prep.)).

(4) Sonority Hierarchy[4]
| stops > fricatives > nasals > liquids > glides > vowels |

Following Prince & Smolensky (1993), the generalizations in (3) can be expressed in constraint terms by combining the sonority hierarchy with the syllabic positions NUCleus and MARgin to produce two sets of constraints in a fixed ranking:

(5) a. ||*MAR/vowel » *MAR/glide »…» *MAR/fricative » *MAR/stop||[5]
b. ||*NUC/stop » *NUC/fricative » … » *NUC/glide » *NUC/vowel||

As an example, *NUC/fricative bans segments with the sonority of fricatives in syllable nuclei. Since *NUC/stop universally outranks *NUC/fricative, a prohibition on fricatives in nuclei means that there is also one on stops in that position.

I propose that there are separate versions of Prince & Smolensky's sonority constraints, relativized to each prominent position. For example, main-stressed syllables are prominent positions, so there are constraints of the form *σ́/ONS/*x* and *σ́/NUC/*x*:

(6) a. || *σ́/MAR/vowel » *σ́/MAR/glide » … » *σ́/MAR/stop ||
b. || *σ́/NUC/stop » *σ́/NUC/fricative » … » σ́/NUC/vowel ||

As an example, *σ́/ONS/glide bans glides in the onsets of main-stressed syllables, while *σ́/NUC/stop bans stops in main-stressed syllable nuclei. There are similar series of constraints for other prominent positions. These will be explicitly identified when they become relevant (§3, §4).

Invoking sonority constraints that refer specifically to prominent positions is not entirely new. Sonority-driven stress has also been analyzed by using constraints that refer to nucleus sonority in stressed syllables (see esp. Kenstowicz 1994). The relation between the present constraints and sonority-driven stress is discussed in section 3.3 below.

In a sense, the present proposal is simply a further implementation of the mechanisms that Prince & Smolensky proposed to generate their sonority constraints. P&S's (1993:127) process of prominence alignment combines a structural scale (e.g. NUC and MAR) with a substantively-motivated scale (e.g. sonority) to ultimately produce a set of constraints. The prominent-position

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[4] It is not the aim of this work to identify every detail and nuance of the sonority hierarchy. However, other work and the following sections indicate that every sonority class is subdivided into voiced and voiceless subgroups, with the voiced group more sonorous that the voiceless one. Vowels are also divided in terms of peripherality, with peripheral vowels (e.g. [i e a o u]) being more sonorous than central ones (i.e. [ə ɨ]). In these subgroups lower vowels are more sonorous than higher ones (i.e. [a] > [e o] > [i u]). See Dell & Elmedlaoui 1985 and Gnanadesikan 1997 for consonant sonority, de Lacy 1997 and references cited therein for vocalic sonority.

[5] As mentioned above further distinctions should be made. For example, distinctions should be made based on voicing, and – for vowels – on peripherality and height.

sonority (Π-sonority) constraints proposed here are simply the alignment of structural elements (i.e. prominent positions, nuclei, and onsets) with the sonority scale. Given the independent availability of prominent positions as elements that can combine with constraints (e.g. faithfulness constraints – Beckman 1998), the present proposal is essentially a recognition of the predictions of presently available theoretical mechanisms.

The following section examines the predictions of the Π-sonority constraints in relation to ranking permutation. I show that Π-neutralization and Π-allophony come about through various rankings of the Π-sonority constraints with other markedness and faithfulness constraints. Section 4 discusses predictions of the theory related to the form of the constraints.

3. Predictions of the Π-Sonority Constraints

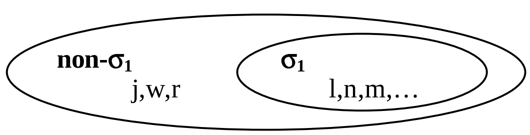
The aim of this section is to show that the predictions of the prominent-position sonority constraints with regard to ranking permutation are borne out in natural language. In doing so, I will demonstrate that there are cases of neutralization (section 3.1) and allophony (section 3.2) conditioned by prominent positions.

3.1 Π-Neutralization: A short example

In Campidanian Sardinian, rhotics and glides are not allowed word-initially, but they can appear elsewhere (Bolognesi 1998). For example, *aroza* “rose” is acceptable, but **roza* is not, despite the fact that this word developed from Latin *rosa*.[6] Similarly, glides never appear word-initially (p.47).

In effect, this generalization means that the inventory of possible segments in the prominent root-initial position is a subset of those in the non-prominent ‘non-initial’ position. This illustrates the Π-neutralization case presented in (2i) and repeated here, with specifics filled in for Campidanian Sardinian:

(7)



To account for the lack of initial glides and rhotics, the Π-sonority constraints can be ranked above some relevant faithfulness constraint. Since at one point in Campidanian Sardinian’s development, initial rhotics and glides were avoided by epenthesis (Latin *rosa* cf CS *aroza*), the constraints $*\sigma_1$/MAR/glide and $*\sigma_1$/MAR/rhotic would have outranked DEP “no epenthesis”:[7]

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[6] Some loanwords are exceptions to this generalization: e.g. [rɔðɛu] ‘rodeo’, [joɣurtu] ‘yoghurt’ (p.44).

[7] Arguments for a sonority distinction between rhotics and laterals can be found in Steriade (1982).

(8)

	/roza/	*σ_1/MAR/rhotic	DEP
	roza	x!	
☞	aroza		x

Similarly, *σ_1/MAR/glide blocks underlying glides from appearing.

Campidanian Sardinian serves as a brief and reasonably straightforward example of the utility of the Π-sonority constraints.[8] The following section presents a more detailed example.

3.2 Π-Allophony in Niuafo'ou

The preceding section presented a case where the Π-sonority constraints reduced the number of contrasts in prominent positions. In this section, I will present a slightly different situation: where the Π-sonority constraints condition allophony. Further to this, I will demonstrate that the Π-sonority constraints present the only viable solution to this phenomenon.

3.2.1 Glide-formation in Niuafo'ou

Like many Polynesian languages, Niuafo'ou bans glides in native words (Tsukamoto 1988). However, they are allowed in loanwords, and there they are in complementary distribution with the high vowels [i u]. The glides [j w] usually appear before vowels:

(9)	[ju.ní.ti̥]	*unit*	*[iuniti̥]
	[wa.é.a]	*wire*	*[uaea]
	[we.lì.ŋa.tó.ni̥]	*Wellington*	*[ueliŋatoni̥]

However, glides never appear before main-stressed vowels (p.28):[9,10]

(10)	[i.á.te]	*yard*	*[já.te]
	[u.á.fu̥]	*wharf*	*[wá.fu]
	[u.í.pi̥]	*whip*	*[wí.pi]
	[ku.á.ta]	*quarter*	*[kwá.ta]

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[8] This presentation is somewhat oversimplified, though. Campidanian Sardinian does allow [r] in σ_1 codas (e.g. *sardu* "Sardinian") indicating that the constraint used in this system is really *σ_1/ons/rhotic – a combination of two prominent positions with one sonority level. See §4 for further discussion and examples.

[9] This statement probably should not be generalized to "before all stressed syllables" due to the example [njù.i.ó.ka] "New York". However, this is the only example mentioned in Tsukamoto (1988), and restrictions on the maximal size of prosodic words in Polynesian languages make finding other examples extremely difficult.

[10] Stress falls on the penultimate mora, regardless of syllable structure (syllables have optional onsets, no codas, and may contain long vowels and falling diphthongs). In this respect, Niuafo'ou is like its neighbour Tongan (see Prince & Smolensky 1993 for an analysis).

Descriptively speaking, the distribution of glides and vowels is a rather standard case of glide formation, attested in a wide variety of languages (Rosenthall 1994 and references cited therein).[11] To account for the requirement that glides appear pre-vocalically, the constraint ONSET – requiring syllables to have onset consonants – can be employed. ONSET must outrank constraints that require preservation of underlying vocalic status. Assuming that vowels are distinguished from glides by the presence of a mora, the relevant faithfulness constraint must be IDENT-µ:

(11) IDENT-µ: If *x* corresponds to *x'* then *x* and *x'* have the same numbers of moras.

In the tableaux below, [i] and [u] will be used to stand for the mora-bearing versions of [j] and [w]. As the following tableau shows, this ranking produces the right result, with underlying [i] being realized as [j] before a vowel, but not elsewhere:

(12)

	/iuniti/	ONSET	IDENT-µ
	ì.u.ní.ti	x x!	
☞	ju.ní.ti		x

The quirk in the Niuafo'ou system is that glides cannot appear as the onset of stressed syllables, indicating that some environment-specific constraint outranks ONSET. The Π-sonority constraints provide a likely candidate: *σ́/MAR/glide "No glides in main-stressed syllables.":

(13)

a.	/iate/	*σ́/MAR/glide	ONSET	IDENT-µ
	já.te	x!		x
☞	i.á.te		x x	

b.	/iuniti/	*σ́/MAR/glide	ONSET	IDENT-µ
	i.u.ní.ti		x x!	
☞	ju.ní.ti			x

Form (a) shows that an underlying vowel is blocked from surfacing as a glide in main-stressed syllables while form (b) shows that glides are not blocked in other environments.

[11] Note that the distribution of glides and high vowels cannot be due to the influence of the source language – i.e. English. In English, *whip* is [wɪp], not *[uɪp]. Discussion of why native words do not allow glides at all would take us too far afield (see Ito & Mester 1995 for relevant discussion). It suffices to say that loanwords form a distinct class of lexical items in Niuafo'ou.

3.2.2 Alternatives and why they fail

While tableau (13) shows that glides in stressed syllables are effectively banned by *σ́/MAR/glide, it remains to show that such a constraint provides the only possible account of the Niuafo'ou glide-formation restriction.

In the realm of markedness constraints there are few contenders which could replace *σ́/MAR/glide effectively. To block any process in a specific environment, an adequate markedness constraint must at least mention the environment – i.e. the onset of main-stressed syllables, and thwart the triggering constraint – i.e. ONSET. The constraint *σ́/MAR/glide fits the bill exactly in this regard. Indeed, it is difficult to conceive of an alternative markedness constraint that both mentions the necessary environment and blocks ONSET while not being merely a notational variant of *σ́/MAR/glide.

Faithfulness constraints cannot provide an adequate account of Niuafo'ou glide-formation either. The most likely place to look in this regard would be the positional faithfulness constraint σ́-IDENT-μ, requiring retention of vowel-glide distinctions in main-stressed syllables. Initially, such a constraint initially seems to have some promise:

(14)

	/iate/	σ́-IDENT-μ	ONSET	IDENT-μ
	já.te	x!		x
☞	i.á.te		x x	

However, this approach runs afoul of Richness of the Base (Prince & Smolensky 1993), which states that there are no restrictions on input form. Tableau (14) only deals with inputs with underlying vowels, but by Richness of the Base underlying forms with glides – e.g. [jate] – must also be considered. As the following tableau shows, positional faithfulness constraints incorrectly allow the glide to remain in the stressed syllable:

(15)

	/jate/	σ́-IDENT-μ	ONSET	IDENT-μ
💣	já.te			
	i.á.te	x!	x x	x

The prosodic markedness constraint *σ́/MAR/glide fares far better: even with an underlying glide, the correct form results:

(16)

	/jate/	*σ́/MAR/glide	ONSET	IDENT-μ
	já.te	x!		
☞	i.á.te		x x	x

The general problem is that faithfulness constraints promote the preservation of underlying contrasts; unlike markedness constraints, they cannot enforce restrictions. Restrictions on prominent positions, therefore, must be effected by markedness constraints specific to those positions.

While Campidanian Sardinian and Niuafo'ou show the action of constraints on margin sonority, there are also a number of cases where constraints on nucleus sonority in prominent positions cause neutralization and allophony. In fact, Niuafo'ou exhibits a case of this in vowel devoicing: vowels devoice between voiceless consonants unless they are in PrWd-initial or stressed syllables. Again, this is a case of Π-allophony: vowel allophony is blocked in prominent positions. Again, an adequate analysis of this case must make recourse to the Π-sonority constraints, specifically the constraints $*\sigma_1$/NUC/V̥ and *σ́/NUC/V̥ which ban the low sonority voiceless vowels in initial syllables and stressed syllables, respectively. The following section presents further evidence for the nucleus-sonority constraints in prominent positions.

3.3 Sonority-Driven Stress

The preceding sections have explored the predictions that the Π-sonority constraints make in regard to ranking permutation. In those cases, the Π-sonority constraints outranked some faithfulness constraints, effecting neutralization. With freely rankable constraints, though, it is possible for faithful constraints to outrank the Π-sonority constraints, and for the Π-sonority constraints to then have an emergent effect.

Such an emergent effect can be quite evident due to the general nature of constraints of the form *x/y. Such constraints are 'symmetrical' in their potential effects: (1) if *x* is kept constant, then *y* should change, and (2) if *y* is kept constant, *x* should change (see de Lacy 1999:§6 for a more in-depth discussion). In the case of *σ́/MAR/glide in Niuafo'ou the placement of stress was kept constant, so banning glides in stressed syllables. However, the opposite is also predicted to occur: if faithfulness to glides is high-ranked and stress-locating constraints are relatively low, stress will be forced to move away from a syllable with a glide onset.

The Australian language Alyawarra verifies this prediction. In Alyawarra, main stress falls on the leftmost syllable with an onset, unless that onset is a glide (Yallop 1977:43):[12, 13]

[12] Yallop (1997:43) proposes that word-initial glides form diphthongs with the following vowel, so they really form onsetless syllables. There is no independent evidence for this, though. One reason to think that glides are really consonants is the fact that they can appear in front of diphthongs: e.g. [al.kwij.la] *am/is/are eating* (p.42). The nucleus in this word would have to be [wij] – a triphthong, which is typologically marked, to say the least.

[13] To be more precise, Yallop (p.43) states that stress never falls on an initial [wa] or [ju] syllable. However, there are only three vowels: [i u a], and [wi] is banned (p.20), while Yallop argues that [wu] is really [u]. In other words, [wa] is the only sequence of [w]+V possible. Both [ju] and [ja] seem to be possible, though Yallop suggests that [ji] is phonemically just /i/. The data does not indicate whether stress also avoids initial [ja].

(17) a. i.lí.pa *axe*, *í.li.pa
b. rín.ha {3rd person pronoun}
c. ju.kún.t^ja *ashes*, *jú.kun. t^ja
d. walíjmparra *pelican*, *wálijmparra

The constraint ALIGN-σ́-L expresses the tendency for stress to appear at the left edge while the avoidance of onsetless syllables is prompted by the constraint σ́/ONSET, requiring that stressed syllables have onsets (de Lacy 1997):

(18)

	/ilipa/	σ́/ONSET	ALIGN-σ́-L
	í.li.pa	x!	
☞	i.lí.pa		x

(19)

	/rinha/	σ́/ONSET	ALIGN-σ́-L
☞	rín.ha		
	rin.há		x!

The final step is to explain why stress avoids syllables with glide onsets. Enter the constraint *MAR$_{\acute{\sigma}}$/glide:

(20)

	/ju.kun.t^ja/	IDENT-μ	*σ́/MAR/glide	ALIGN-σ́-L
☞	ju.kún.t^ja			x
	jú.kun.t^ja		x!	
	í.u.kun.t^ja	x!		

Alyawarra is a specific case of a more general phenomenon – sonority-driven stress. More commonly, such cases refer to nucleus sonority; constraints of the form *σ́/NUC/*x* can be used to account for such situations (as argued in detail by Kenstowicz 1996). For example, in Jaz'va Komi, main stress falls on the leftmost syllable that contains a non-high vowel ([a e o]), otherwise on the leftmost syllable: e.g. *mijánlan^j* "we", *buzginám* "we hit" (Lytkin 1961). The ranking || FAITH » *σ́/NUC/i,u » ALIGN-σ́-L » *σ́/NUC/… || accounts for this system:

(21)

	/mijanlan^j/	IDENT-F	*σ́/NUC/i,u	ALIGN-σ́-L
	míjanlan^j		x!	
☞	mijánlan^j			x
	mijanlán^j			x x!
	májanlan^j	x!		

As a final note on stressed syllables, I note that prosodic markedness constraints are not limited to mentioning sonority. Other prosodic elements such as tone and prosodic structure can be mentioned with relation to prominent positions. For further discussion on the relation between main stress and tone, see de Lacy (1999) and references cited therein; for the relation between main stress and prosodic structure, see de Lacy (1997) and references cited therein.

4 Typology

The aim of the case studies in the preceding section was to show that the predictions made by the Π-sonority constraints in regard to ranking permutation are borne out in natural language; permuting the ranking of faithfulness constraints and Π-sonority constraints produces attested neutralizations, allophonies, and stress systems.

The aim of this section is to deal with other predictions of the Π-sonority constraints. Section 4.1 deals with the typology of sonority, while section 4.2 discusses the typology of prominent positions.[14]

4.1 Sonority

The Π-sonority constraints make a number of predictions about sonority relations in syllable margins. In particular, they have a built-in implicational relation: if *Π/MAR/*x* is active then *Π/MAR/*y* (where *y* is more sonorous than *x*) is also active. This means that neutralization in the onsets of prominent positions should always include glides.[15] Next on the sonority scale are rhotics, as seen in Campidanian Sardinian.

A number of languages ban liquids in prominent positions, especially word-initially (e.g. Golin – Bunn & Bunn 1970:4, Arabana-Wangkangurru – Hercus 1972, see Dickey 1997 for an extensive list). While the sonority status of [h] and [ʔ] is difficult to determine, these segments seem to pattern with highly sonorous segments in at least some languages. Since they are highly sonorous, we could expect them to be avoided in prominent positions in some languages. Indeed, Parker (in prep.) shows that [h] and [ʔ] are avoided in Chamicuro onsets, but allowed in codas. Similarly, [h] is banned in word-initial main-stressed syllables in Huariapano (Parker 1998). Further support

[14] In the present paper only prosodically prominent positions have been considered, but Beckman (1998) and Alderete (1999) argue that the morphological category *root* also counts as prominent. I have found no evidence that neutralization can appear in roots alone and not in affixes, indicating that there are no constraints of the form *ROOT/P/*x*. Unless future research fills this gap, this indicates that there is a fundamental and phonologically significant difference between phonologically and morphologically prominent positions.

[15] Unless, of course, some other higher-ranked constraint forces glides to appear. For example, Gujarati does not allow glides in word-initial onsets unless some other consonant precedes them: e.g. /wat/ → [vat] *cf* /pwar/ → [pwar], *[pvar] (Cardona 1965: 28). In the latter case, the candidate *[pvar] is blocked by a higher-ranked constraint on sonority-distance: stops and fricatives are too close on the sonority scale, so blocking the neutralization of /w/ to [v] in this environment.

comes from the fact that [h] and glides are optionally neutralized in Saramaccan (Rountree 1972).

As mentioned previously, voiced segments are more sonorous than voiceless ones. The stress system of Pirahã bears this out, with stress being repelled from syllables with voiceless onsets (Everett & Everett 1983, for analysis see de Lacy 1997 and references cited therein). A case of neutralization is also found in some Bavaro-Austrian dialects, where voiced obstruents are neutralized word-initially (Trubetzkoy 1939, Birgit Alber p.c.).

The Π-sonority constraints also make predictions with regard to syllable nuclei. The constraints predict that lower sonority elements will be the target of any prominent-position nucleus-related neutralizations, allophonies, or stress movements. This is certainly true of prominence-driven stress: stress is always repelled from lower-sonority elements; it is never the case that a low sonority vowel like [i] will attract stress away from a high-sonority one (e.g. [a]).

The same is generally true of nucleus-neutralizations. Low sonority elements are often targets of neutralization. For example, [ə] is often banned from stressed syllables (see Oostendorp 1996 for extensive discussion). For example, in some dialects of English, [ə] is banned from stressed syllables, but quite acceptable elsewhere.

4.2 Prominent positions

Prominent positions include root- and/or PrWd-initial syllables, main-stressed syllables, onsets, and long vowels. Evidence for sonority constraints for the main-stressed syllable was presented in section 3.3, and for the root- and PrWd-initial syllable in sections 3.1 and 3.2.

4.2.1 Long vowels

There is evidence that long vowels also have specific sonority constraints. Of course, only constraints of the form *LV/NUC/*x* (where LV="long vowel") will have any impact; *LV/ONS/*x* does not describe a structure that ever occurs. These constraints mean that long vowels could require higher sonority than in short vowels.

A relevant case is found in Yokuts: high long vowels obligatorily lower to mid vowels (Newman 1944). Such a system requires a constraint against high long vowels:

(22)

	/mi:k'-t/	*LV/NUC/i,u	IDENT[high]
	mi:k'it	x!	
☞	me:k'it		x

Trubetzkoy (1939) catalogues several similar cases.

4.2.2 Onsets

The prominent position 'onset' may also freely combine with sonority constraints. Like long vowels, though, it only has an effect when combining with the *MAR/*x* constraints: *ONSET/MAR/*x* is equivalent to *ONSET/*x*; *ONSET/NUC/*x* militates against a structure that never occurs for independent reasons.

Unlike *MAR/*x*, *ONSET/*x* specifically targets the onset, excluding the coda. This means that some language may exist where the coda contains segments than the onset neutralizes. Such a case is found in Chamicuro: both [h] and [ʔ] are avoided in onsets, but can freely appear in codas (see Parker in prep. for extensive discussion):[16]

(23)	meʔ.sa	*table*	*ʔe.sa
	kah.pu	*bone*	*ha.pu

These facts fall out straightforwardly from the present proposal: *ONSET/h,ʔ outranks faithfulness constraints that preserve these segments.

5. Impossible systems

The form of the constraints partially accounts for the fact that – barring conflicting constraints – Π-neutralizations and -allophonies should always target classes defined by sonority, and sonority alone is predicted to influence stress placement.

However, the Π-sonority constraints only half-ensure that these Π-related processes will never target classes defined by subsegmental features. In order to achieve this goal completely, constraints of the form *Π/Feature cannot exist. If, for example, the constraint *σ́/labial did exist, labials could be neutralized in prominent positions, or syllables with labial consonants could repel stress; yet such phenomena never occur.

What principle prevents constraints of the form *Π/Feature from being in CON is a question which space does not permit me to comment on in any detail here. At this point, I merely point out that it must at least exist, and suggest that it is part of a much larger pattern of restrictions on constraints (an issue taken up in de Lacy (in prep.)).

It is only fair to mention, though, that there seem to be a few exceptions to the claim that *Π/F constraints do not exist. For example, a number of Australian languages also ban retroflex consonants from the prominent position onset, and a similar ban is found on palatalized segments in onsets in some Spanish dialects.[17] These cases seem problematic because – for

[16] Parker shows that coda [h] and [ʔ] cannot be treated as prosodic features or a reflex of vowel length: both consonants pattern like other coda consonants for phonological processes.

[17] My thanks to Cheryl Zoll and James Harris for mentioning these cases.

example – retroflex consonants do not seem to form a distinct sonority class on their own, nor be more highly sonorous than other elements.

On the other hand, it is possible that retroflexion and palatalization are in some way related to rhotics and glides – highly sonorous segments. In this case, the presence of such constraints would be entirely in keeping with the present proposals. Such issues deserve further exploration.

6. Conclusions

In this paper I have argued for two theoretical claims. The first is that constraints regulating sonority in prominent positions are necessary. They are needed to deal with cases of neutralization and allophony in prominent positions, as well as cases of sonority-driven stress.

The second proposal is that there are no constraints of the form *Prominent-Position/Feature. This claim ensures that such prominent-position-related processes always refer to classes of segments defined in terms of sonority, and never to featurally-defined classes.

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