Is Harmony Limited to Contrastive Features?*

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SUMMARY

I will show how the insights in Piggott's (1992) analysis of types of nasal harmony contribute to the basic principles of the theory of Modified Contrastive Specification (Dresher, Piggott and Rice 1994). Of particular importance is his demonstration that the harmonizing feature is always contrastive, and that the definition of what is contrastive can vary cross-linguistically. I then apply this approach to Nevins's (2010) analysis of microvariation in Yoruba dialects, and argue that the hypothesis that harmony triggers are always contrastive can be maintained.

RÉSUMÉ

Je décrirai la contribution des idées de Piggott (1992) dans son analyse des types d'harmonie nasale aux principes de base de la théorie de Spécification contrastive modifiée (Dresher, Piggott et Rice 1994). D' importance particulière est le fait qu'il démontre que le trait harmonisant est toujours contrastif, et que la définition de ce qui est contrastif peut varier entre langues. J'applique ensuite cette approche à l'analyse que fait Nevins (2010) de la microvariation dans les dialectes Yoruba, et j'affirme que l'hypothèse que les traits qui déclenchent l'harmonie sont toujours contrastifs peut être maintenue.

1 INTRODUCTION

In an important paper, Piggott (1992) proposed that cross-linguistic variation in nasal harmony does not result from idiosyncratic restrictions on rules, but rather is related to variability in the

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representations of segments. In particular, Piggott showed the importance of contrastive features in characterizing the domain of nasal harmony. In Modified Contrastive Specification (MCS; Dresher, Piggott and Rice 1994), this follows from the Contrastivist Hypothesis (Hall 2007), which states that only contrastive features are computed by the phonology. In the first part of this paper I will show how the insights in Piggott (1992) and related work contribute to the basis of MCS.

Nevins (2010) proposes a new theory of vowel harmony that assigns an important role to contrastive features. In keeping with the Contrastivist Hypothesis, he proposes that there are harmony processes that compute only contrastive features. However, he follows Calabrese (2005) in also allowing harmony rules that compute all features, contrastive as well as noncontrastive. Allowing noncontrastive features to participate in harmony amounts to a significant weakening of the Contrastivist Hypothesis.

I will look at a case (Yoruba) where Nevins proposes that vowel harmony is sensitive to noncontrastive features. I will argue that this is not a genuine counterexample to the Contrastivist Hypothesis; rather, in such cases it only appears that noncontrastive features are involved in harmony because Nevins (2010) adopts an incorrect notion of what features are contrastive.

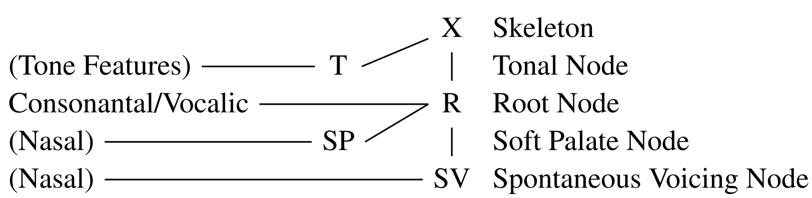
2 NASAL HARMONY SYSTEMS

Piggott (1992) proposed that cross-linguistic variation in nasal harmony is due to variability in the representations of segments. Specifically, he proposed that the feature [nasal] could be a dependent of either the Soft Palate (SP) Node, or of the Spontaneous Voicing (SV) Node. These options give rise to distinct systems of nasal harmony, Type A (SP) and Type B (SV).

2.1 TYPE A

Piggott's proposal was that in Type A harmony, it is the SP node that spreads from nasal consonants to segments that are not specified for SP. Segments specified for SP block the spread of nasality.

Figure 1: The variable dependency of nasality (Piggott 1992: 49)



Though couched in feature-geometric terms, Piggott's proposal also gave a central position to the role of contrast. Type A harmony, for example, is constrained by a principle of *Contrastive Nasality* (Piggott, 1992: 42):

> If [+nasal] is an underlying property of [+consonantal] segments, then other segments specified underlyingly for a Soft Palate node must also be [+consonantal].

In Warao (language isolate, Venezuela), for example, /m, n/ trigger nasalization, /h, w, j/ are targets, and obstruents and liquids are opaque in that they block nasal spread. Piggott proposes that [+consonantal] segments block nasal spread; these segments are contrastive for SP. Targets, which are [–consonantal], are not in the contrastive domain of SP (Figure 2). The consonants of Warao are shown in Table I.

Figure 2: Warao nasalization (Osborn, 1966)

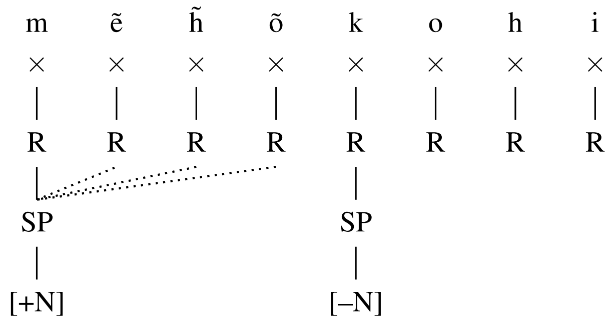


Table I: Warao Consonants (Osborn, 1966)

	Bilabial	Coronal	Velar	Glottal	
Stops	p	t	k k^w		
Fricative		s			[+consonantal]
Flap		r			(*domain of SP node*)
Nasals	m	n			
Semi-vowels	w	j		h	[–consonantal]

Another central claim of Piggott's analysis is that the contrastive domain of nasality can vary cross-linguistically. Type A harmony shows variation in which segments are targets and which are opaque, due to variation in the domain of SP, as shown in (1).

(1) *Variability of contrast*

	Targets (lack SP)	*Opaque (contrastive for SP)*
i.	Vowels, laryngeals	Semivowels, liquids, fricatives, stops
ii.	Vowels, laryngeals, semivowels	Liquids, fricatives, stops
iii.	Vowels, laryngeals, semivowels, liquids	Fricatives, stops
iv.	Vowels, laryngeals, semivowels, liquids, fricatives	Stops

Warao is an example of variation (i). An example of variation (iii) is Kolokuma I̤jọ (Niger-Congo), where /w, r, l, j/ and vowels are targets of nasal spreading, and all other segments block it. The consonants are shown by Williamson (1965) as in Table II.

To better reflect the facts of nasal harmony, we should rearrange the chart as in Table III. The domain of the SP node is the class of [–approximant].

Table II: Kolokuma Ịjọ consonants (Williamson, 1965)

			Continuant				
	Plosive		Fricative		Sonorant		
					Non-lateral		Lateral
	Vl.	Vd.	Vl.	Vd.	Oral	Nasal	
Labial	p	b	f	v	w	m	
Alveolar	t	d	s	z	r	n	l
Back	k	g	(h)	(ɦ)	j	ŋ	
Labiovelar	kp	gb					

Table III: Kolokuma Ịjọ consonants re-grouped

	[–approximant] *domain of SP node*					[+approximant]
	Plosive		Fricative		Nasal	
	Vl.	Vd.	Vl.	Vd.		
Labial	p	b	f	v	m	w
Alveolar	t	d	s	z	n	r l
Back	k	g			ŋ	j
Labiovelar	kp	gb				

2.2 TYPE B

A more dramatic variation occurs in Type B nasal harmony, where [nasal] is a dependent of SV, and spreads to SV nodes. Obstruents unspecified for SV are transparent to the spread of nasality: they neither undergo nor block it.

An example is Guaraní (Tupi), where /m, n/ and autosegmental [+nasal] trigger nasalization, /r, l, w/ and vowels are targets, and obstruents and glottals neither undergo nor block (transparent), as shown in Figure 3; the consonants of Guaraní are shown in Table IV.

Figure 3: Guaraní nasalization

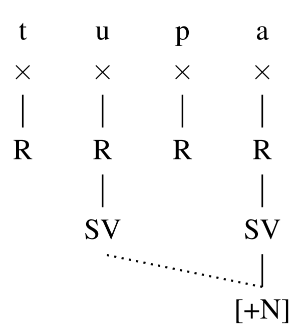


Table IV: Guaraní consonants

		Bilabial	Coronal	Velar	Glottal
	Stops	p	t	k k^w	ʔ
	Fricatives		s		h
Domain	Nasals	m	n	$ŋ^w$	
of	Liquids		r l		
SV node	Semivowels			w	

3 DOMAINS AND THE SCOPE OF CONTRAST

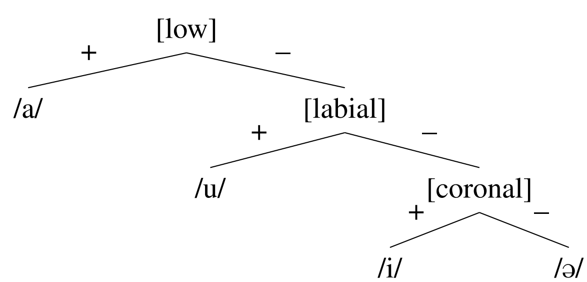
The above examples suggest that nasal harmony is sensitive to contrastive domains that can vary from language to language. These domains regulate the relative scopes of distinctive features. That is, the feature that implements nasal harmony is contrastive in a domain defined by certain other features. Another way to express this idea is in terms of feature ordering: a feature that is higher in the order takes wider scope than a lower-ordered feature.

Feature ordering is a way of determining contrastive specifications, via the Successive Division Algorithm (SDA; Dresher 1998, 2003, 2009; based on Jakobson et al. 1952; Jakobson and Halle 1956). The ordered list of features is called the *contrastive hierarchy* for the language in question.

(2) *The Successive Division Algorithm*

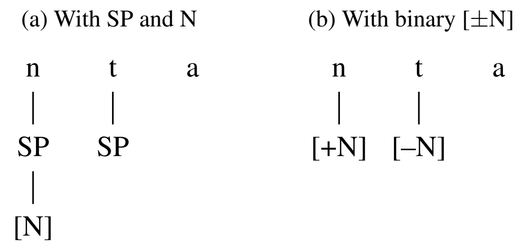
a. Begin with *no* feature specifications: assume all sounds are allophones of a single undifferentiated phoneme.
b. If the set is found to consist of more than one contrasting member, select a feature and divide the set into as many subsets as the feature allows for.
c. Repeat step (b) in each subset: keep dividing up the inventory into sets, applying successive features in turn, until every set has only one member.

Figure 4: The Contrastive Hierarchy



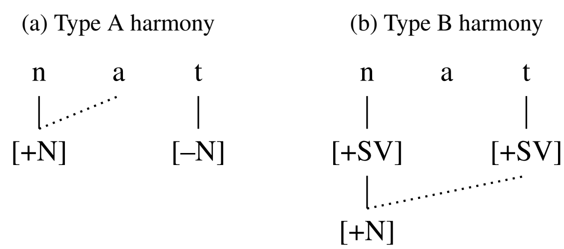
Feature geometric dependency relations can be recast as contrastive scope relations. Thus, Piggott's variable feature geometries can be shown to correspond to different contrastive hierarchies. Dresher, Piggott and Rice (1994) show that the Type A combination of SP and [nasal] can be converted to a ternary contrast involving only [±nasal]:

Figure 5: Correspondence of Feature Geometry and Contrastive Hierarchy



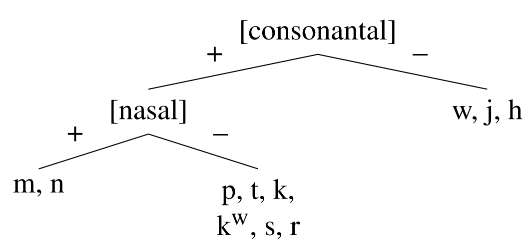
In Type A harmony, [+nasal] spreads to segments that have no specification for [nasal], and is blocked by contrastive [–nasal]. Both values of [±nasal] are active. In Type B harmony, [+nasal] spreads to segments with contrastive [+SV]. The feature [–nasal] does not seem to be computed, nor is [–SV], which does not block harmony. That is, only *marked* values of [nasal] and [SV] are active.

Figure 6: Spreading of [nasal]



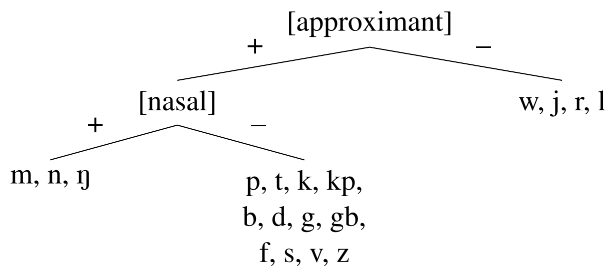
Recall that in Warao, [+consonantal] segments are contrastive for SP and [–consonantal] segments are not in the contrastive domain of SP. If we suppose a hierarchy of [consonantal] > [nasal] (Figure 7), then the glides receive no specification for [nasal], while blockers are [–nasal].

Figure 7: Warao contrastive hierarchy



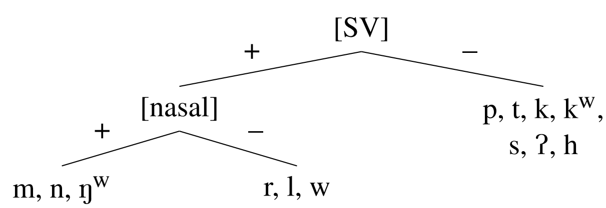
In Kolokuma Ị̀jọ, the domain of the SP node is the class of [–approximant]. Here, [approximant] > [nasal] (Figure 8), so glides and liquids receive no specification for [nasal], whereas blockers are [–nasal].

Figure 8: Kolokuma Ị̀jọ contrastive hierarchy



Finally, in Guaraní, [+nasal] spreads to segments that have contrastive [SV]. Only *marked* values of [nasal] and [SV] are computed (Figure 9).

Figure 9: Guaraní contrastive hierarchy



4 CONTRASTIVE AND REDUNDANT FEATURES

Another characteristic of Piggott's nasal harmony analysis is the distinction it draws between contrastive and redundant features. Southern Barasano (Tucanoan), a Type B harmony language, has a set of voiced stops that can surface as prenasalized [^{m}b, ^{n}d, ^{ŋ}g]. Piggott argues that nasalization here is not contrastive or present underlyingly, but is rather due to a phonetic implementation rule that adds a nasal phase to a SV segment that has a complete oral occlusion.

In other words, prenasalization, which is only one of several instantiations of spontaneous voicing in stops, *enhances* the SV character of voiced stops. Further, Piggott (1992: 49) observes:

> It is important to note that the nasality of prenasalized stops in languages like Southern Barasano is not a realization of the feature [nasal]. Consequently, in the Tucanoan pattern of nasal harmony, the spreading of nasality cannot be initiated by an underlying prenasalized segment.

That is, only a *contrastive* [nasal] feature can trigger harmony; redundant features introduced by phonetic implementation are phonologically *inert*. This generalization follows from what Hall (2007: 20) calls the *Contrastivist Hypothesis:*

> The phonological component of language L operates only on those features which are necessary to distinguish the phonemes of L from one another.

This hypothesis suggests a heuristic: to identify which features are contrastive, look for features that are active. For example, features that participate in vowel harmony are active; by this hypothesis, therefore, they must be contrastive. It would be a counterexample to the Contrastivist Hypothesis if we find active features that could not possibly be contrastive under any reasonable ordering of the features.

4.1 CONTRASTIVE FEATURES IN VOWEL HARMONY

(Nevins, 2010) proposes a new theory of vowel harmony that assigns an important role to contrastive features. In keeping with the Contrastivist Hypothesis, he proposes that there are harmony processes that compute only contrastive features.

In Finnish, for example, Nevins proposes that suffix vowels lack a value for the feature [back]. In Figure 10, the essive suffix /+nA/ has a low vowel with no specification for [back]. Unspecified vowels search for a value of [back] from a preceding vowel, but only one that has a contrastive value for [back]. In this example, the suffix vowel harmonizes with the contrastive [+back] value of /o/, and not with the noncontrastive [–back] of /i/. Vowels with contrastive [±back] can participate in vowel harmony. The vowels /i/ and /e/ are neutral, because they lack contrastive [back]. The Finnish vowel inventory is given in Table V.

Figure 10: Finnish vowel harmony in *koti+na* ‘home+ESSIVE’

	k	o	t	i	+	n	A
		[+back]		[–back]			[ ]
=	k	o	t	i	+	n	a
		[+back]		[–back]			[+back]

Table V: Finnish vowel inventory

		[–round]	[+round] [–back]	[+round] [+back]
[–low]	[+high]	i	ü	u
	[–high]	e	ö	o
[+low]			[–back] ä	[+back] a

Though Nevins cites many cases of this sort, he follows Calabrese (2005) in also allowing harmony rules that compute all features, contrastive as well as noncontrastive. Allowing noncontrastive features to participate in harmony amounts to a significant weakening of the Contrastivist Hypothesis.

It is important to note in this connection that Nevins (2010) adopts a minimal difference (MD) approach to contrast. According to the definition proposed by Nevins (2010: 98), a segment S with specification [αF] is contrastive for F if there is another segment S′ in the inventory that is featurally identical to S, except that it is [–αF].

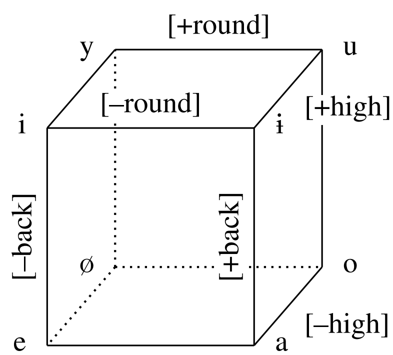
The main problem with MD is that fewer phonemes than we might think are ‘featurally identical’ with respect to all features that they might possibly possess. More usually, we ignore ‘small’ or ‘irrelevant’ features when assessing if two phonemes are minimally different.

An example of the shortcomings of MD and how they are often tacitly set aside is Nevins’s discussion of the Turkish vowel system (2010: 26). In keeping with traditional analyses, Nevins observes that the features [high], [back], and [round] are sufficient to uniquely determine each of the eight vowels of Turkish (Table VI). Every feature specification is contrastive in Turkish, because the vowels completely fill the 2×2×2=8 cell vowel space (Figure 11).

Table VI: Turkish vowels

	[–back]		[+back]	
	[–round]	[+round]	[–round]	[+round]
[+high]	i	y	ɨ	u
[–high]	e	ø	a	o

Figure 11: Turkish vowel features



Nevins does not mention the feature [low], even though it is one of the features commonly employed in vowel systems. Limiting Turkish to a single height feature in this way is crucial in achieving the elegant traditional classification of Turkish vowels.

If we included [low] the vowel system would look different. In Table VII, not all pairs are minimal: MD would not give the desired results. Nevins’s analysis is thus equivalent to ordering the features [high], [back], and [round] highest, making all other vowel features redundant and phonologically irrelevant in Turkish.

Dresher (2009) argues that MD fails in many common situations to yield adequate contrastive representations. Also, MD labels fewer features as contrastive than does the SDA. To take a simple example, consider an inventory with three vowels /a, i, u/ and the features [low] and [round], as in Table VIII(a) (if we pick any more features the MD approach will fail).

Table VII: Turkish vowels by MD

	[–back]		[+back]		
	[–round]	[+round]	[–round]	[+round]	
[+high]	i	y	ɨ	u	[–low]
[–high]	e	ø		o	[–low]
[–high]			a		[+low]

Table VIII: Contrastive features according to MD

(a) Example inventory

	a	i	u
[low]	+	–	–
[round]	–	–	+

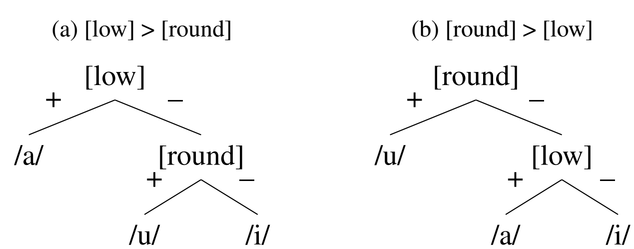
(b) MD result

	a	i	u
[low]	+	–	
[round]		–	+

The feature [low] uniquely distinguishes /a/ from /i/. The feature [round] uniquely distinguishes /i/ from /u/. Therefore by MD, there are 4 contrastive features and 2 noncontrastive features, as seen in Table VIII(b).

In a hierarchical approach we obtain different results. There are two outcomes, depending on the ordering of the features. First, let us suppose that [low] is ordered above [round], as in Figure 12(a). On this ordering, [low] is contrastive for all segments, and [round] is contrastive for /u/ and /i/. Five features are contrastive and only one feature is noncontrastive (Table IX(a)). In the other possible order, in Figure 12(b), [round] is contrastive for all segments, and [low] is contrastive for /a/ and /i/. Again, five features are contrastive and only one is noncontrastive (Table IX(b)).

Figure 12: Determining contrastive features with the SDA



Comparing the two approaches, we observe that one or the other of the features that MD designates as noncontrastive is designated as contrastive by the SDA, in either ordering. Therefore, we might expect that there are cases where in an MD analysis it looks like noncontrastive features are participating in vowel harmony; but those same features could be designated contrastive by the SDA. I argue that such cases in fact arise in Nevins's (2010) analyses.

Table IX: Contrastive features according to the SDA

(a) [low] > [round]

	a	i	u
[low]	+	–	–
[round]		–	+

(b) [round] > [low]

	a	i	u
[low]	+	–	
[round]	–	–	+

4.2 VOWEL HARMONY IN YORUBA

In Ifẹ Yoruba, lax (or RTR) mid vowels /ɛ, ɔ/ can occur non-finally only when another lax mid vowel follows (3a,b). Locality is computed only with respect to mid vowels (leaving aside /a/ for now); a high tense vowel can intervene (3c,d). Standard Yoruba has the same process (3e,f), except that high vowels count in the computation (3g,h). Only tense mid vowels may precede a high vowel, even if a lax mid vowel occurs to the right.

(3) *Vowel harmony in Standard and Ifẹ Yoruba*

	Ifẹ Yoruba			Standard Yoruba	
a.	olè	'thief'	e.	olè	*ɔlè
b.	ɔsɛ	'soap'	f.	ɔsɛ	*osɛ
c.	ɔrúkɔ	'name'	g.	orúkɔ	
d.	ɛ̀lùbɔ́	'yam flour'	h.	èlùbɔ́	

Nevins (2010: 16) explains the difference as follows:

> The locality of vowel harmony in Ifẹ Yoruba is determined by the closest vowel contrastive for the tense/lax distinction, while the locality of vowel harmony in Standard Yoruba is determined by the closest vowel, period.

Nevins assumes that only mid vowels are contrastive for [RTR] in both dialects, in keeping with the MD approach to contrast. Recall that on this approach, contrastive features are those that uniquely distinguish two phonemes. This is illustrated in Table X(b).[1] Therefore, if high vowels block harmony in Standard Yoruba, it must be because [RTR] harmony computes all features, not just contrastive ones.

This conclusion does not follow in a hierarchical approach to contrast. The SDA can limit contrastive [RTR] to mid vowels, corresponding to ordering the features [high] > [RTR] (Figure 13(a)). But the other ordering is also possible. On this ordering, all vowels are contrastive for [RTR], including the high vowels (Figure 13(b)).

It is thus not obvious that Standard Yoruba vowel harmony computes noncontrastive features. The difference between the dialects may be one of feature ordering, a difference in the relative scope of [RTR]. On this view, *both* Ifẹ and Standard Yoruba limit [RTR] harmony to contrastive values of [RTR]. The difference is in the contrastive scope of [RTR]: in Ifẹ Yoruba the high vowels are not included, and in Standard Yoruba they are.

[1] Following the usual practice I tacitly choose only one of [round] and [back] so that the MD method can appear to work.

Table X: Yoruba vowel inventory

(a) Fully specified

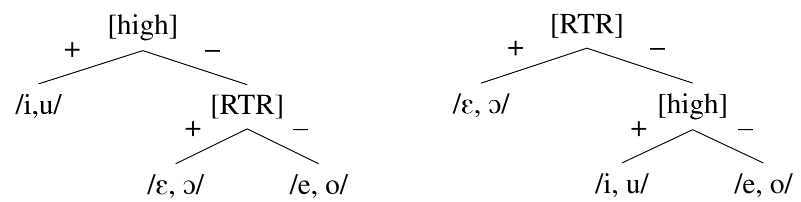
	i	e	ɛ	a	ɔ	o	u
[low]	–	–	–	+	–	–	–
[high]	+	–	–	–	–	–	+
[round]	–	–	–	–	+	+	+
[RTR]	–	–	+	+	+	–	–

(b) MD contrastive features

	i	e	ɛ	a	ɔ	o	u
[low]			–	+			
[high]	+	–				–	+
[round]	–	–	–		+	+	+
[RTR]		–	+		+	–	

Figure 13: Determining contrastive features with the SDA

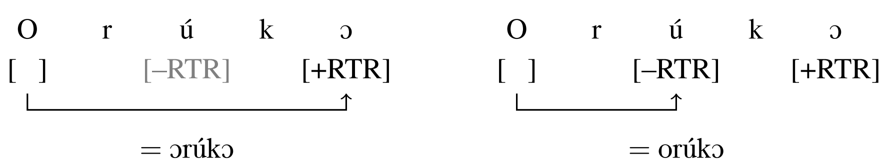
(a) [RTR] on mid vowels (Ifẹ Yoruba) (b) [RTR] on all vowels (Std. Yoruba)



Below in Figure 14 is how harmony applies to the word *ɔrúkɔ~orúkɔ* 'name' in each dialect, using Nevins's theory of harmony, but the hierarchical approach to contrast, adhering to the Contrastivist Hypothesis. The initial mid vowel is unspecified for [RTR] and seeks a value from the nearest contrastive source to the right. In Ifẹ Yoruba, the nearest such source is the mid vowel /ɔ/; in Standard Yoruba it is the high vowel /ú/.

Figure 14: Yoruba vowel harmony for *ɔrúkɔ~orúkɔ* 'name'

(a) Ifẹ Yoruba (b) Standard Yoruba



Interesting support for the hierarchical approach to contrast comes from the behaviour of the low vowel /a/. In the MD approach, /a/ has a contrastive [+low] feature, but no other feature, including [RTR], is contrastive, because no other feature uniquely distinguishes /a/ from another phoneme.

On this approach we might expect, then, that /a/ would pattern in parallel with the high vowels: that it would be neutral to [RTR] harmony in Ifẹ Yoruba (which computes contrastive values only), but that it would participate in harmony in Standard Yoruba (where all values are computed). But this is not what happens: /a/ triggers [RTR] harmony in *both* dialects, as shown in (4) (Ọla Orie, 2001).

(4) */a/ in Yoruba [RTR] harmony*

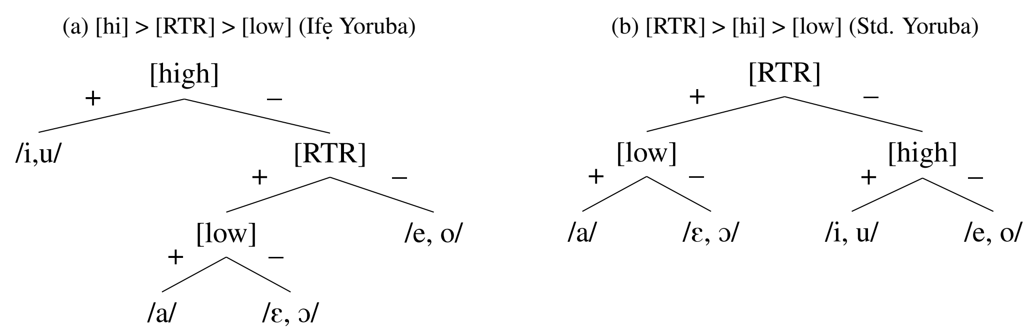
	Ifẹ Yoruba		Standard Yoruba		
	Expected	Actual	Expected	Actual	Gloss
a.	*oba	ɔba	ɔba	ɔba	‘king’
a.	*èpá	ɛ́pa	ɛ́pa	ɛ́pa	‘peanut’

Nevins (2010: 194) has an explanation for why /a/ participates in [RTR] harmony in Ifẹ Yoruba, even though harmony in this dialect is limited to contrastive features, and /a/ is not contrastive for [RTR]. He writes:

> . . . elements can terminate the search as a result of their inherent high-sonority. These sonority-peaks should be excluded from the domain of search by their noncontrastive value, but impose a hurdle past which search cannot proceed.

That is, Nevins needs to appeal to a special explanation for the patterning of /a/ in Ifẹ Yoruba, based on its sonority. But feature ordering yields a simpler account. We haven’t considered where the feature [low] fits into the contrastive hierarchies of these dialects. Evidently, /a/ is contrastive for [RTR] in both dialects, the result of ordering [low] after [RTR] in both.

Figure 15: SDA contrastive features in Yoruba

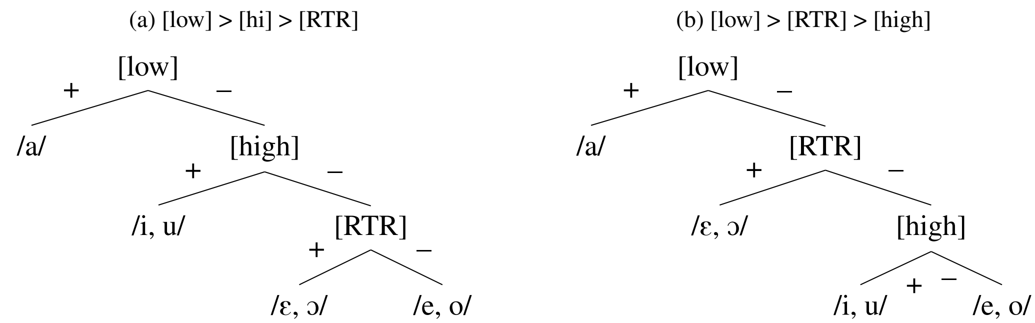


One might argue that this result is not *required* by the SDA: we can order the features this way if this gives the correct result. But the theory also allows for other orderings; for example, we can put [low] at the top of the order, which puts /a/ outside the domain of [RTR] harmony.

Nevins (2010: 195) predicts that certain patterns allowed by free ordering do not occur. I paraphrase his formulation as follows:

> Given a language where some vowels are contrastive for a feature (e.g. [RTR]), and where other vowels are noncontrastive for that feature (by MD: here the high and low vowels); and given that harmony normally computes only contrastive features; then if the noncontrastive vowels differ in sonority, it will never be the case that a higher

Figure 16: Alternate Yoruba feature orderings



> sonority noncontrastive vowel (/a/) is transparent while a lower sonority noncontrastive vowel (/i, u/) is not.

Looking at this from the point of view of feature ordering, the prediction is that the order [low] > [RTR] > [high] is not permitted. In such a language, /a/ is outside the harmony domain, hence transparent and non-triggering, whereas the high vowels are in the scope of the harmonizing feature, hence are expected to block the spread of [+RTR], or be donors of [–RTR]. That is, in this language we might expect forms like *oba* and *orako*, as well as forms like *obi (*ɔbi*) and *orikɔ (*ɔrikɔ*).

It is not clear, however, that this prediction is correct. Leitch (1996) and Casali (2008) show that there is a lot of variation in the behaviour of /a/ in vowel systems of the relevant kind.

Second, if the prediction is correct, then it points to constraints on possible feature ordering. But the point still stands that there is no reason to suppose that Standard Yoruba harmony computes noncontrastive features.

4.3 THE NECESSITY OF FEATURE ORDERING

One might question the need for feature ordering and hierarchical organization of contrast: it imposes a burden on learners, and it is somewhat abstract relative to the data. As an anonymous reviewer has written, “Haven’t we been getting by fine without it all these years?” Actually, no. I have tried to show that making decisions about the relative scopes of features and feature ordering is unavoidable, and that such decisions are made tacitly all the time.

As a parting example, consider two analyses of the Catalan vowel system in the recent literature. Crosswhite (2001) makes Eastern Catalan look like Ifẹ Yoruba (except for [low]): [ATR] is limited to the mid vowels (Table XI(a)). Walker (2005) and Lloret (2008) make Valencian Catalan look like Standard Yoruba: [ATR] is contrastive over all vowels (Table XI(b)).

None of these authors mentions feature ordering or scope, but they are present in their analyses nonetheless: in Eastern Catalan, [high] and [low] are ranked above [ATR], while the opposite is true in Valencian Catalan.

Table XI: Catalan vowel systems

(a) Eastern Catalan ([high], [low] > [ATR])

	[+front]	[–front]
[+high]	i	u
[+ATR]	e	o
[–ATR]	ɛ	ɔ
[+low]	a	

(b) Valencian Catalan ([ATR] > [high], [low])

		[+front]	[–front]
	[+high]	i	u
[+ATR]		e	o
[–ATR]		ɛ	ɔ
	[+low]	a	

5 CONCLUSIONS

Once we replace the Minimal Difference approach to contrast with the Successive Division Algorithm applying to an ordered list of features, there is no longer reason to suppose that Standard Yoruba [RTR] harmony computes all features rather than just contrastive features.

Therefore, both dialects of Yoruba remain consistent with the Contrastivist Hypothesis. So to answer the titular question: is harmony limited to contrastive features? So far, yes!

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