

exterior suffixation.²¹ To firmly establish the claim that fixed-content morphemes cannot be forced into infixation after initial onsetless syllables or before final C, more must be done: one needs to run through all relevant affix patterns, checking the effects of contact between the edges of the affix with the base. In addition, the reduplicative pattern must be nailed down. Detailed analysis is undertaken in McCarthy & Prince 1993: §7, to which the reader is referred.

We have, then, the beginnings of a substantive theory of infixability, a theory in which prosodic shape modulates the placement of morphemes. Edge-oriented infixation arises from the interaction of prosodic and morphological constraints. The principal effect — interior placement — comes about because EDGEMOSTness is a gradient property, not an absolute one, and violations can be forced. It follows from the principles of the harmonic ordering of forms that violations in the output are minimal. Consequently, such infixes fall *near* the edge, as near as possible given the dominant constraints. Edge-oriented infixation can be construed in the ‘Do-Something-Except-When’ style of descriptive language, should that prove illuminating: the affix falls at the edge *except when* a prosodic constraint can be better met inside. The theory, of course, recognizes no distinction between ‘except when’ and ‘only when’ — blocking and triggering — but deals only in the single notion of constraint domination.

The internalizing effects attributed to extrametricality follow, on this view, from constraint interaction and from the way that constraints are defined. There is no formal mechanism called Extrametricality or (negative) Prosodic Circumscription to which the analysis appeals. This suggests the general hypothesis, natural within the context of Optimality Theory, that what we call Extrametricality is no more than the name for a family of effects in which Edgemostness interacts with other prosodic constraints. We pursue this line in the following two sections as we explore more instances of the *except when* configuration, showing that key properties of extrametricality, thought to be axiomatic, follow from this re-conception.

4.2 Interaction of Weight Effects with Extrametricality

Certain varieties of Hindi show an interaction between weight and nonfinal placement of stress which sheds further light on the interaction of gradient edgmostness and other factors operative in prosodic patterning. First, we provide some background on “unbounded” “stress” systems; then we turn to the revelatory twists of Hindi prosody.

4.2.1 Background: Prominence-Driven Stress Systems

Stress systems typically reckon main-stress from a domain edge, often enhancing an edgmost or near-edgmost syllable or foot. There are also stress systems that call on EDGEMOST but make no use of binary structure to define the position of main word-stress: instead the additional determining

²¹ Observe that in all the cases discussed we can assume that the entire package of syllabic constraints, including both ONS and –COD, dominates the morphological conditions on affixation; one or the other member of the package turns out to be relevant depending on what the content of the affix is and whether it is a prefix or stem. This idea figures centrally in McCarthy & Prince 1993, where the Optimality theoretic scheme “prosody dominates morphology” is proposed as the account of what makes morphology prosodic.

factor is *syllable weight*. In the canonical cases, main stress falls on the leftmost/rightmost heavy syllable (pick one); otherwise, lacking heavies in the word, on the leftmost/rightmost syllable (pick one). Systems like these have been called “unbounded” because the distance between the edge and the main-stress knows no principled limits and because metrical analysis has occasionally reified these unbounded spans as feet (Prince 1976, 1980; Halle & Vergnaud 1987; Hayes 1980, 1991/1995). The best current understanding, however, is that what’s involved is not a foot of unbounded magnitude (presumed nonexistent), but a kind of prominent enhancement that calls directly on contrasts in the intrinsic prominence of syllables. These then are prominence-driven systems, in which a word’s binary rhythmic structure is decoupled from the location of main word-stress. (For discussion, see Prince 1983, 1990; Hayes 1991/1995.)

Two basic constraints are involved. First, it is necessary to establish the relation between the intrinsic prominence of syllables and the kind of elevated prominence known as stress. There are a number of ideas in the literature as to how this is to be done (Prince 1983, 1990, McCarthy & Prince 1986, Davis 1988ab, Everett 1988, Zec 1988, Goldsmith & Larson 1990, Hayes 1991/1995, Goldsmith 1992, Larson 1992), none perhaps entirely satisfactory. Generalizing over particular representational assumptions, we can write, following essentially McCarthy & Prince 1986:9,

(37) **Peak-Prominence** (PK-PROM)

Peak(x) > Peak(y) if $|x| > |y|$.

By PK-PROM, the element x is a better peak than y if the intrinsic prominence of x is greater than that of y . This is the same as the nuclear-Harmony constraint HNUC formulated above, which holds that higher sonority elements make better syllable peaks.

The second relevant constraint determines the favored position of the prominence-peak or main stress of the word. It is nothing other than the familiar EDGEMOSTness.

(38) **EDGEMOST**(pk; L|R; Word)

A peak of prominence lies at the L|R edge of the Word.

We use ‘Word’ loosely to refer to any stress domain; as before, EDGEMOST is subject to gradient violation, determined by the distance of the designated item from the designated edge.

To see how these constraints play out, let us consider a simple prominence-driven system such as “stress the rightmost heavy syllable, else the rightmost syllable.” Here we have

(39) PK-PROM \gg EDGEMOST(pk;R)

If there are no heavy syllables in the word, the rightmost syllable faces no competition and gains the peak. The results are portrayed in the following tableau:

(40) **Right-Oriented Prominence System**. No Heavy Syllables:

Candidates	PK-PROM	EDGEMOST(pk;R)
☞ L L L ́		∅#
L L ́ L		σ# !
L ́ L L		σσ# !
́ L L L		σσσ# !

Here PK-PROM plays no role in the decision, since all candidates fare equally on the constraint. This kind of data provides no argument for ranking the constraints; either ranking will do. With heavy syllables in the string, the force of constraint PK-PROM becomes evident:

(41) **Right-Oriented Prominence System**, with heavy syllables.

Candidates	PK-PROM	EDGEMOST(pk;R)
L H H ́	́	
☞ L H ́ L	́	σ#
L ́ H H L	́	σσ# !
́ H H L	́ !	σσσ#

With the other domination order, a strictly final stress location would always win. With PK-PROM dominant, candidates in which a heavy syllable is peak-stressed will eclipse all those where a light syllable is the peak. When several potential peaks are equivalent in weight, or in intrinsic prominence construed more generally, the decision is passed to EDGEMOST, and the surviving candidate containing the peak nearest the relevant edge is evaluated as optimal; exactly the generalization at hand.

4.2.2 The Interaction of Weight and Extrametricality: Kelkar's Hindi

Certain dialects of Hindi/Urdu display an interesting variant of the prominence-driven pattern of edgemostness.²² From the work of Kelkar (1968), Hayes (1991/1995:276-278) has constructed the following generalization:

(42) **Kelkar's Hindi**

“Stress falls on the heaviest available syllable, and in the event of a tie, the rightmost nonfinal candidate wins.”

(Hayes 1991/1995:276)

The first complication is that this variety of Hindi (or Urdu) recognizes three degrees of syllable weight or intrinsic prominence; hence Hayes's ‘heaviest’ holding the place of the usual ‘heavy’. The ordering of weight-classes is as follows:

(43) **Heaviness Scale** |CVVC,CVCC| > |CVV,CVC| > |CV|

Hayes suggests that the superheavy syllables are trimoraic, yielding the scale | $\mu\mu\mu$ | > | $\mu\mu$ | > | μ |. Whatever the proper interpretation may be, the heaviness scale fits directly into the constraint PK-PROM.

The effects of PK-PROM may be seen directly in forms which contain one syllable that is heavier than all others:

(44) **Heaviest wins**

a. .ki.d ^h ár.	. $\mu\mu$. > . μ .	‘which way’
b. .ja.náab.	. $\mu\mu\mu$. > . μ .	‘sir’
c. .as.báab.	. $\mu\mu\mu$. > . $\mu\mu$.	‘goods’
d. .ru.pi.áa.	. $\mu\mu$. > . μ .	‘rupee’
e. .réez.ga.rii.	. $\mu\mu\mu$. > . $\mu\mu$.	‘small change’

(All examples here and below are from Hayes 1991/1995.)

The second complication in the Hindi pattern is the avoidance of stress on final syllables. This is a very commonly encountered phenomenon in stress systems of all kinds, typically attributed to various forms of extrametricality, stress-shift, and de-stressing. We formulate the basic constraint as NONFINALITY as follows:

²² Judgments of stress in Hindi are notoriously delicate and unstable, a consequence of dialectal variation and the non-obviousness of whatever events and contrasts the term ‘stress’ actually refers to in the language. Therefore it is essential to distinguish the observations of distinct individuals and to seek non-impressionistic support for the claims involved. Hayes (1991: 133-137, 236-237) provides careful analysis along these lines.

(45) **NONFINALITY**

The prosodic head of the word does not fall on the word-final syllable.

By ‘prosodic head’ we mean the prosodically most prominent element, here the main stress. NONFINALITY is quite different in character from extrametricality; it focuses on the well-formedness of the stress peak, not on the parsability of the final syllable.²³ Furthermore, it is a substantive stress-specific constraint, not a general mechanism for achieving descriptive ‘invisibility’ (Poser 1986).

When heaviness alone does not decide between candidates, the position of the peak is determined by the relation NONFINALITY \gg EDGEMOST. It is more important for the peak to be nonfinal than for it to be maximally near the edge. Exactly as in the simple prominence-driven systems, however, the package of positional constraints is completely dominated by the weight-measuring PK-PROM. Here are some examples illustrating the positional effects (syllables of the heaviest weight class in a word are in roman type):

(46) **Positional Adjudication among Equals**

a.	μ	.sa. mí .ti.	‘committee’
b.	$\mu\mu$.ru. káa .yaa. pús .ta.kee. .roo. záa .naa.	‘stopped (trans.)’ ‘books’ ‘daily’
c.	$\mu\mu\mu$. áas .mãã.jaah. .aas. máan .jaah.	‘highly placed’ ‘highly placed (var.)’

The full constraint hierarchy runs PK-PROM \gg NONFINALITY \gg EDGEMOST. The following tableaux show how evaluation proceeds over some typical examples.

²³ NONFINALITY does not even imply by itself that the literally last syllable is unstressed. Representational nonfinality can be achieved in the manner of Kiparsky 1992 by positing an empty metrical node or grid-position (analogous to the ‘silent demi-beat’ of Selkirk 1984) after the final syllable within the stress domain. Use of empty structure is proposed in Giegerich 1985 and Burzio 1987 for various purposes, and is explored in Kiparsky 1992 under the name of ‘catalexis’, in connection with preserving Foot Binarity (q.v.inf.). Here we want empty metrical positions to be unavailable; clearly, they are proscribed by a constraint of the FILL family, and we will tacitly assume that this constraint is undominated in the grammars under discussion.

(47) **Light vs. Light:** /samiti/

Candidates	PK-PROM	Position	
		NONFINALITY	EDGEMOST
.sa.mi.tí.	.ú.	* !	∅#
☞ .sa.mí.ti.	.ú.		σ#
.sá.mi.ti.	.ú.		σσ# !

The form .sa.mí.ti. is optimal because it has a nonfinal peak that is nearest the end of the word.

(48) **Heavy vs. Light:** /kid^har/

Candidates	PK-PROM	Position	
		NONFINALITY	EDGEMOST
☞ .ki.d ^h ár.	.úμ.	*	∅#
.kí.d ^h ar.	.ú. !		σ#

The optimal form .ki.d^hár. violates NONFINALITY, but it wins on PK-PROM, which is superordinate.

(49) **Heavy vs. Heavy vs. Light:** /pustakee/

Candidates	PK-PROM	Position	
		NONFINALITY	EDGEMOST
.pus.ta.kée.	.úμ.	* !	∅#
.pus.tá.kee.	.ú. !		σ#
☞ .pús.ta.kee.	.úμ.		σσ#

The form .pús.ta.kee. is the worst violator of EDGEMOSTness among the candidates, but it bests each rival on a higher-ranked constraint.

(50) Contest of the Superheavies: /aasmããjaah/

Candidates	PK-PROM	Position	
		NONFINALITY	EDGEMOST
aas.mãã.jáah	μμμ	* !	∅#
aas.mãã.jaah	μμ !		σ#
☞ áas.mãã.jaah	μμμ		σσ#

Here again, the optimal candidate is the worst violator of edgemostness, but its status is assured by success in the more important confrontations over weight and nonfinality.

The stress pattern of Kelkar's Hindi shows that extrametricality can be 'canceled' when it interferes with other prosodic constraints. It is rarely if ever the case that final syllables are categorically extrametrical in a language; rather, prominence is nonfinal *except when* being so entails fatal violation of higher-ranked constraints. This behavior is exactly what we expect under Optimality Theory. In the familiar view, of course, such behavior is a total mystery and the source of numerous conundra, to be resolved by special stipulation; for if extrametricality is truly a rule assigning a certain feature, there can be no explanation for why it fails to apply when its structural description is met.

4.3 Nonfinality and Nonexhaustiveness

The exclusion of *word-final syllables* from prosodic structure is the prototypical extrametricality effect. Latin provides the touchstone example, and parallels can be multiplied easily.²⁴ Writing the extrametricality rule to apply word-finally leads immediately to the basic quirk of the theory: *monosyllabic* content words receive stress without apparent difficulty. Since the unique syllable of the monosyllable is indubitably final, it should by all rights be extrametrical. Why is this syllable different from all others? The following examples illustrate the situation, where ⟨...⟩ encloses the extrametrical material:

(51) Extrametricality in Latin

- a. cór⟨pus⟩ *corpús
 b. méns *⟨mens⟩

²⁴ In words of length two syllables or longer, Latin places main word-stress on the penult if it is heavy or if it is the first syllable in the word, otherwise on the antepenult. This array of facts is standardly interpreted to mean that final syllables are completely extrametrical — outside foot structure. Bimoraic trochees are applied from left to right on the residue of extrametricality; the last foot is the strongest (Hayes 1980, 1987).

This state of affairs arises from an interaction exactly parallel to the one that ‘revokes extrametricality’ in Hindi. NONFINALITY is simply not the *ne plus ultra* of the system; it can be violated.

The dominant, violation-forcing constraint is not far to seek. Relations must be established between the categories of morphology and those of phonology. These take the form of requirements that any member of a certain morphological category (root, stem, word) must be, or correspond to, a phonological category, typically the prosodic word *PrWd*. (See Liberman & Prince 1977; Prince 1983; McCarthy & Prince 1986, 1990, 1991ab, 1993; Nespor & Vogel 1986; Inkelas 1989.) The *PrWd* is composed of feet and syllables; it is the domain in which “main stress” is defined, since every *PrWd* contains precisely one syllable bearing main stress. As in many languages, Latin requires that the lexical word be a prosodic word as well. Following McCarthy & Prince 1991ab, we can put the morphology/phonology interface constraint like this, with one parameter:

(52) **LX \approx PR** (*MCat*)

A member of the morphological category *MCat* corresponds to a *PrWd*.

Another line of approach is to demand that the left or right *edge* of a morphological category match to the corresponding edge of the relevant phonological category (Selkirk 1986, Chen 1987, McCarthy & Prince 1993). For present purposes it is not necessary to pursue such refinements of formulation, although we return in §7, p. 114ff., to the virtues of edge-reference.

All words of Latin satisfy LX \approx PR; not all final syllables are stressless. (Indeed, on the standard view of Latin prosodic structure, a final syllable is included in stress structure only in monosyllables.) NONFINALITY is violated exactly when LX \approx PR is at stake. We deduce that LX \approx PR \gg NONFINALITY. It remains to formulate a satisfactory version of the constraint from the NONFINALITY family that is visibly active in Latin. For present purposes, the following will suffice:

(53) **NONFINALITY**

The head *foot* of the *PrWd* must not be final.

This is related to NONFINALITY (45) §4.2.2, p.42, which deals with peaks of stress — syllabic heads of *PrWd* — but not identical with it. We will bring them together shortly, in order to deal with the subtler interactions between nonfinality and foot-form restrictions.

The effect of the constraint hierarchy on monosyllables is illustrated in this tableau:

(54) **The Parsed Monosyllable of Latin**

Candidates	LX \approx PR	NONFINALITY
☞ [(méns) _F] _{PrWd}		*
⟨mens⟩	* !	

The constraint $LX \approx PR$ word thus ‘revokes extrametricality’ when content-word monosyllables are involved.

It is instructive to compare the present approach with the standard conception, due to Hayes, which holds that extrametricality is a feature assigned by rule as part of the bottom-up process of building prosodic structure. Under Bottom-up Constructionism, there must be a strict serial order of operations:

1. Extrametricality marking must take place: this prepares the syllabified but footless input for further processing.
2. Feet are then formed, determining the location of stressed and unstressed syllables.
3. Higher Order structure is then built on the feet — i.e., the Prosodic Word is formed — and the location of main stress is determined.

Under this plan of action, it is essential that extrametricality be assigned *correctly* at the very first step. If monosyllabic input is rendered entirely extrametrical at step #1, then Prosodic Word Formation (step # 3) will have no feet to work with, and will fail. To avoid this disastrous outcome, a caveat must be attached to the theory of extrametricality to ensure that the fatal misstep is never taken. Hayes formulates the condition in this way:

(55) Nonexhaustivity

“An extrametricality rule is blocked if it would render the entire domain of the stress rules extrametrical.” (Hayes 1991/1995: 58)

It is an unavoidable consequence of Bottom-up Constructionism that condition (55) must be stated as an independent axiom of theory, unrelated to any other constraints that bear on prosodic wellformedness. Its existence is entirely due to the theory’s inability to recognize that $LX \approx PR$ is a constraint on the *output* of the system, a condition that must be met, and not the result of scanning input for suitable configurations and performing Structural Changes on them. The putative rule assigning PrWd status cannot be allowed to fail due to lack of appropriate input.²⁵ The Axiom of Nonexhaustivity is not motivated by restrictiveness or any other such higher explanatory motive. Its motivation is strictly empirical; remove it and you have an equally restrictive theory, but one which predicts the opposite treatment of monosyllables.

Nonexhaustiveness appears not to be part of any *general* theory of extrametricality. Hewitt & Prince (1989), for example, argue that extrametricality with respect to tonal association may indeed exclude entire monosyllabic domains. Hayes is careful to refer to the notion “*stress domain*” in his statement of the condition. The proposal offered here makes sense of this: the integrity of the stress domain is guaranteed by the theory of the morphology/phonology interface, as encoded in

²⁵ Compare, in this regard, the discussion of relative clause formation in Chomsky 1965, where it is noted that it is insufficient to say that the rule of relative clause formation is *obligatory*, because nothing guarantees that it will be able to apply at all (*the man that the house looks nice). Compare also the notion of “positive absolute exception” in Lakoff 1965, a rule whose structural description *must be met*. These phenomena are diagnostic of deep failure in the simple re-write rule conception of grammar, since remedied. In the case of relative clauses, it is clear that the syntax is entirely free to create structures in which no wh-movement can apply, because independent principles of interpretation, defined over the *output* of the syntax, will fail in all such forms, ruling them out.

LX≈PR. When that particular theory is not involved, as in certain tonal associations, there is no reason to expect nonexhaustiveness, and we do find it. Similarly, the end-of-the-word bias of stress-pattern extrametricality is not mirrored in other phenomena which ought to fall under the theory of extrametricality (were there to be one). For example, tonal extrametricality (Prince 1983, Pulleyblank 1983) is not restricted to final position; nor is edge-oriented infixation (McCarthy & Prince 1986, 1990). We expect this: extrametricality is not a unified entity, but rather a diverse family of consequences of the gradience of EDGEMOSTNESS. In the subtheory pertaining to stress, NONFINALITY is the principal, perhaps only, constraint interacting with EDGEMOSTNESS. In other phenomenal domains besides stress, other constraints are at play, shown above in the case of edge-oriented infixation, §4.1.

Nonexhaustiveness, then, emerges from constraint interaction. What of the other properties that have been ascribed to formal extrametricality? There are four, and in each case, we would argue, what is correct about them follows from the constraint interaction analysis. Let's take them in turn.

(56) Property 1: **Constituency**

“Only constituents (e.g. segment, mora, syllable, foot, phonological word) may be marked as extrametrical.” (Hayes 1991/1995: 57).

We suggest that this property has nothing to do with extrametricality *per se* but rather with the substantive constraint that pushes the relevant item off an edge. Constraints on stress, for example, deal in syllables quite independently of extrametricality. When the relevant constraint is from a different domain, it may well be that constituency is irrelevant; in edge-oriented infixation, for example, as analyzed above in §4.1, the constraint –COD can force prefixes away from the initial edge of the word, over consonant sequences that needn't be interpreted as unitary constituents (“onsets”).

(57) Property 2: **Peripherality**

“A constituent may be extrametrical only if it is at a designated edge (left or right) of its domain.” (Hayes, *ibid.*).

This is because the phenomena gathered under the name of extrametricality have to do with items that are positioned by the constraint EDGEMOST — prominences, feet, tones, affixes. If by extrametrical, we mean “unparsed into the relevant structure”, then there are many other situations where constraints force nonparsing. Hayes's “weak local parsing”, for example, compels unparsed syllables to separate binary feet (the similarity to extrametricality is recognized in Hammond 1992). Syllables may be left unparsed internally as well as peripherally because of restrictions on the quantitative shape of feet (the “prosodic trapping” of Mester 1992). Similar observations may be made about segmental parsing. Many kinds of constraints can lead to nonparsing; we assert that there is no reason to collect together a subset of them under the name of extrametricality.

(58) Property 3: **Edge Markedness**

“The unmarked edge for extrametricality is the right edge.” (Hayes, *ibid.*)

As noted, this is true only for stress, not for tone or affixation. The explanation must lie in the properties of stress, not in a theory of the treatment of edges.

(59) Property 4: *Uniqueness*.

Only *one* constituent of any type may be extrametrical.

This is a classic case of constraint interaction as we treat it. Extrametricality arises, for example, when NONFINALITY \gg EDGEMOSTNESS. It follows that EDGEMOSTNESS is violated when extrametrical material is present. Because of the way Harmony is evaluated (HOF: §5), such violations must be minimal. Under NONFINALITY, this will commonly mean that only one element is skipped over or left unparsed, the minimal violation of EDGEMOSTNESS. Thus, in many cases — enough to inspire belief that a parochial principle is involved — the unparsed sequence will be a constituent.

We conclude that there are strong reasons to believe that extrametricality should be retired as a formal device. Since its basic properties submit to explanation in the substantive domain under scrutiny here, it is worthwhile to pursue the argument into the other areas where it has proved to be such a useful tool of analysis. (For further exploration of nonfinality and related edge effects, see Hung 1993.)

Demoting nonexhaustivity from clause-of-UG to epiphenomenon of interaction raises an important issue, however: the universality (or at least generality) of the effect is not directly accounted for. What ensures that $LX \approx PR$ outranks NONFINALITY? Why not have it the other way around in the next language over? It may be that some further condition is required, restricting the place of $LX \approx PR$ in constraint hierarchies. Have we therefore exchanged one stipulation for another, failing to net an overall gain at the bottom line?

Reviewing the spectrum of possible responses, it's clear that we're not in a simple tit-for-tat situation. Suppose we straightforwardly call on some principle relevant only to $LX \approx PR$; for example, that it must sit at the top of all hierarchies, undominated. Any such condition fixes the range of relations between $LX \approx PR$ and many other constraints, not just NONFINALITY, so the cost of the stipulation is amortized over a broad range of consequences having to do with the prosodic status of lexical items. Thus, even with the most direct response, we put ourselves in a better position than the adherent of pure axiomatic status for nonexhaustiveness as a property local to extrametricality.²⁶

²⁶ More optimistically, we can expect to find principles of universal ranking that deal with whole *classes* of constraints; in which desirable case, the nonexhaustiveness effect would fully follow from independent considerations. Also worth considering is the idea that there are no principles involved at all and the predominance of the cited ranking is due to functional factors extrinsic to grammar, e.g. the utility of short words. (This comports as well with the fact that conditions on word minimality can differ in detail from language to language, including or excluding various categories from the 'lexical word': see the discussion of Latin which immediately follows; implying a family of related constraints, rather than a single one.) Grammar allows the ranking to be easily learnable from the abundant data that justifies it. On this view, nothing says that NONFINALITY must be dominated; but it is easy to observe that it is; and there are extragrammatical, functional reasons why it is useful for it to be. Note too that in setting the rank of $LX \approx PR$, we construct the needed restriction from UG-building tools already needed; as opposed to tacking nonexhaustiveness on as a *sui generis* codicil to some mechanism.

It is useful to compare the kind of ranking argument just given with a familiar form of argument for rule ordering in operational theories. One often notes that if Rule A and Rule B were to apply simultaneously, then the conditions of Rule A must be written into Rule B; whereas if Rule A strictly precedes Rule B, the two can be disentangled, allowing the development of an appropriately restrictive theory of type A and type B rules.²⁷

Here we have seen that the empirical generalization about extrametricality (that it holds *except when* it would obliterate a monosyllable) emerges properly from the ranking of independent constraints. The rule-ordering theory of extrametricality, by contrast, exhibits a pathological quirk similar to the one that affects simple non-ordering operational theories. Information proper to one rule must be written into another, solely to get the right outcome: the Nonexhaustivity axiom embodies a covert reference to PrWd-formation. A grammar of re-write rules is simply not suited to the situation where a rule *must apply*, where its structural description *must be met* by all inputs so that all outputs conform to its structural change (see fn. 25 above). Inserting special conditions into rules so that this happens to happen is no answer. Rule-ordering must therefore be abandoned in favor of constraint ranking, for the same reason that simultaneity was previously abandoned in favor of rule ordering.

4.3.1 Nonfinality and the Laws of Foot Form: Raw Minimality

Latin displays a typical minimality effect of the type made familiar by work in Prosodic Morphology: the language lacks monomoraic words. Here is a list of typical monosyllabic forms (Mester 1992:19-20):

(60) Latin Monosyllables

Category	Exempla	Glosses
a. N	<i>mens, cor, mel, rē, spē, vī</i>	‘mind, heart, honey: nom.; thing, hope, force: abl’
b. V	<i>dō, stā, sum, stat</i>	‘I give, stand, am; he stands’
c. Pron.	<i>mē, sē, tū, is, id, quis</i>	‘1sg.-acc., 3-refl.-acc.; you-sg-nom; he, it, who-nom.’
d. Conj.	<i>nē, sī, cum, sed</i>	‘lest, if, when, but also’
e. P	<i>ā, ē, prō, sub, in, ab</i>	‘from, out of, in front of, under, in, from’

We have then *cum, mens, re* and *rem* (acc.), all bimoraic, but no **rē* (Mester 1992, citing Kuryłowicz 1968, Allen 1973:51). A morpheme like *-quē* ‘and’ can only be enclitic. The standard account points to the prosody-morphology interface constraint $LX \approx PR$ as the source of the restriction (Prince 1980; McCarthy & Prince 1986 *et seq.*). The PrWd must contain at least one foot; a foot will contain at least two moras; hence, lexical words are minimally bimoraic. The deduction rests on the

²⁷ Notice that the argument has nothing to do with ‘redundancy’, which (here as elsewhere) is nothing more than a diagnostic indication that greater independence could be achieved; and with that, explanation.