Stress Lapse in Yidiny: A Metrical Reanalysis

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1. Introduction[1].

Yidiny[2] stress is unquestionably comprised of disyllabic feet[3], but a major puzzle arises from the fact that underlyingly even-syllabled words receive trochaic stress, and underlyingly[4] odd-syllabled words receive iambic stress. This type of stress system is unique and has generated a rigorous debate. A common point shared by many analyses is that each proposes that the two stress patterns are derived from a single underlying system (Hayes 1982, McCarthy and Prince 1986, McCarthy and Prince 1990, Jacobs 1990, Kager 1993)[5]. For example, the most detailed analysis posits underlying iambs, some of which switch to trochees in the last stage of the derivation (Hayes 1982).

This paper provides a superior account of Yidiny stress by showing that the unusual surface stress results from the interaction of two formalisms of metrical theory: the disyllabic foot and stress lapse avoidance. Specifically, stress lapse, previously defined as two adjacent stressless elements in a foot, (Kager 1993) is disallowed in Yidiny words. Building disyllabic trochees from left to right results in stress lapse at the right edge of odd-syllabled words: a weak node in the final syllable of the final foot followed by an unfooted syllable. Stress Lapse, which is always and only created in odd-syllabled forms, triggers

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[2]Yidiny is an aboriginal language of Northeastern Australia. The most detailed field work was carried out by R. M. W. Dixon from 1971 to 1975, the results of which are published in his A Grammar of Yidiny. According to Dixon, the youngest current speaker of Yidiny (out of a small handful of people) was born in 1919, making Yidiny a dead language, if not now, then certainly within the next decade.

[3]Recall that by parsing a word into a sequence of feet, an alternating stress pattern is derived: this is the theoretical basis of the foot (Hayes 1991, p. 32). Please cf. (Hayes 1991, p.33-39) for advantages of assigning stress by foot parsing, rather than directly, (as in unbracketed grid notation). The alternating stress pattern of Yidiny has been discussed in terms of feet in every reanalysis since Dixon's original in 1977.

[4]Prior to application of a final syllable deletion rule.

[5]Halle and Vergnaud (1988) proposes creating both iambs and trochees underlyingly, and then deleting the stress pattern which does not surface. This analysis will be discussed briefly in Section 6.3.

Stress Lapse Resolution, a rule which relabels trochees as iambs in odd-syllabled forms. What is unusual about Yidinʸ (ie. the reason why Yidinʸ derives two distinct foot patterns) is that Stress Lapse is not merely disallowed in the domain of the foot (as with the 'Anti-Lapse Filter,' of Kager 1993), but Stress Lapse is disallowed within the domain of the word. That is, Stress Lapse Resolution ignores foot boundaries.

The structure of this paper is as follows: Section 2 presents the peculiar stress facts of Yidinʸ. In section 3, the interaction of Stress Lapse and trochaic footing is shown to derive iambic stress in odd-syllabled words, and the mechanism of Stress Lapse Resolution is related to the Eurhythmy Principle. Relevant phonological processes, conditioned by aberrant foot structure at the right edge of odd-syllabled forms, are presented in Section 4. A previous account is presented in Section 5 (Hayes 1982). In Section 6 this account is shown to be inferior to the current proposal. Section 7 relates the current proposal to the Uniformity Parameter of McCarthy and Prince (1986).

2. Yidinʸ Stress Facts.

Yidinʸ stress is unusual in that it is trochaic on even-syllabled words and iambic on (surface) even and odd-syllabled words.

(1) a. Forms with trochaic stress.

gúygal	'bandicoot'
mádʸindáŋalnʸúnda	'walk up-COMITATIVE-DATIVE SUBORDINATE'
gúdagáŋgu	'dog-ERGATIVE'
búnʸa	'woman'
yábulámgu	'loya cane-PURPOSIVE'
bínʸdʸin	'hornet'
mílbaŋálnʸu	'made clever'
dʸúŋgaŋálnʸu	'run-COMITATIVE-PAST TENSE'
wúnaŋá:lna	'lie down-COMITATIVE-purposive'

b. Forms with iambic stress.

bargándadʸí:nʸ	'pass by-ANTIPASSIVE-PAST'
mudʸá:mdʸi	'mother-COMITATIVE PLUS ABSOLUTIVE'
gudá:ga	'dog'
galí:nʸ	'go-PAST'
wawá:l	'look, see-PAST'
madʸíndaŋá:l	'walk up-COMITATIVE-PAST'
gadʸúlaŋá:l	'made dirty'
dʸuŋgá:nʸ	'run-PAST TENSE'

All words in (1b) will be shown to derive from underlying odd-syllabled forms in section 5.2.

3. Trochaic Stress and Stress Lapse Resolution.

This section details the interaction of Stress Lapse Resolution and trochaic footing, which together derive iambic stress in odd-syllabled words. Section 3.1 shows evidence from reduplication, Penultimate Lengthening, and Final Syllable Deletion to argue that footing must proceed left to right. Section 3.2 details motivation for positing underlying trochees, including Stress Fronting, and shows that trochaic feet assigned from left to right, combined with Stress Lapse Resolution, account for Yidiny stress. Section 3.3 relates this proposal, which is called Trochaic-Lapse Footing, to the Eurhythmy Principle of Kager (in press).

3.1. Left to Right Footing.

In Yidiny, a full disyllabic foot must be built on the left edge of the word, as shown by reduplication data in (2) (from Dixon 1977, as presented in Ferro 1993): a disyllabic reduplicant is copied at the left edge of the word.

(2)

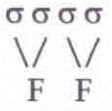
i. Underlying Rep.		ii. Reduplicated form	
búnya	'woman'	búnyabúnya	'women'
muláːri	'initiated man'	mulámuláːri	'initiated men'
dyadyáːma	'jump'	dyadyádyadyáːma	'jump a lot'
wáwal	'look'	wáwalwáwal	'look thoroughly'

McCarthy and Prince 1990 describe Yidiny reduplication as in (3):

(3) The foot is quite literally the minimal base of Yidiny.... The Yidiny reduplicative prefix attaches to the minimal base within the actual base, reduplicating the minimal base just as if it were an authentic morphological unit. *Only material contained in the minimal base—the first two syllables of the stem—is available for copying.* (emphasis mine)

Reduplication copies the first foot of the word. Since all reduplicated prefixes consist of precisely one disyllabic foot, there must be a full disyllabic foot at the beginning of every Yidiny word. Thus, footing must proceed from left to right, as in (4).

(4) a. even-syllabled form



b. odd-syllabled form

The difference between even-syllabled and odd-syllabled words is reflected in the foot structure: the final syllable in odd-syllabled words is unfooted. This difference is crucially exploited by two phonological processes in Yidiny which only apply to odd-syllabled forms: Penultimate Lengthening lengthens the vowel in the syllable preceding the unfooted syllable, and Final Syllable Deletion deletes this unfooted syllable. These processes will be discussed in more detail in Section 5. Right to left footing produces the mirror-image of the structure in (4), that is, an unfooted syllable at the beginning of odd-syllabled words (5). Such a structure is inconsistent with the reduplication facts, since there is not a full foot at the left edge of the word, and also does not trigger the phonological processes of Penultimate Lengthening and Final Syllable Deletion[6]. Left to right footing motivates all of these phenomena.

(5) odd-syllabled form

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[6]Hayes (1991) states on page 30:

> Earlier work in metrical theory (e.g. Liberman 1975, Liberman and Prince 1977, Hayes 1984) adopted a tree formalism as the basic linguistic representation of stress. The nodes of the tree were labeled s(trong) and w(eak) to mark relative prominence; grids were essentially read off the tree, and served as a kind of extraphonological "rhythmic interpretation" of the tree. Subsequently, work in pure-grid theories (Prince 1983, Selkirk 1984) made clear that grids must be more than an extralinguistic representation, since there are language particular phonological rules that are best formulated to refer to the grid. This led to efforts to create hybrid representations, in which bracketing (i.e. tree-like) information was incorporated into the structure of the grid.

And further:

> Bracketed grids are similar to the pure grid representations of Prince (1983) and Selkirk (1984), but include brackets at all levels of the grid to indicate the constituency that would appear in a metrical tree.

Since this and all other analyses of Yidiny stress crucially involve the notion of the disyllabic foot (and since the main analysis of this paper argues against (Hayes 1982), which uses tree representation) this paper also uses tree representation for ease of comparison of the two analyses. In addition, grid representation does not provide any additional insights into the phonological processes of Yidiny over tree representation. The trees used here are also easily transcribed into bracketed grid notation, and the conclusions and generalizations stated in this paper are significant for metrical theory in general, and are not specific to any particular notational device.

3.2. Syllabic Trochees and Stress Lapse.

There are two possible disyllabic foot types, iambic and trochaic, and while most words in Yidiny surface with trochaic stress[7] (Dixon 1977:40), this is not evidence in and of itself for positing trochees vis a vis iambs. However, it is shown in Section 6 that the analysis presented here (which is called "Trochaic-Lapse Footing") is a superior account overall of the stress phenomena in Yidiny than is the account in Hayes (1982), which posits iambs.

Trochaic footing in Yidiny proceeds from left to right according to the following algorithm (Hayes 1987):

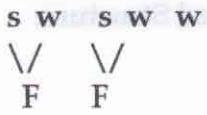
(6) Syllabic Trochee: Form σ σ if possible, otherwise form σ.

The structures in (7) result from the algorithm in (8):

(7) a. guygal

b. yabulamgu

c. madyindaŋalnyu



Comparing (7a), (7b), and (7c)[8], above with the surface forms from (1) (restated in (8) below), the stress in forms in (8a) and (8b) is properly predicted by the Syllabic Trochee algorithm ([7a] and [7b] above). However, the stress in (8c) is not. In (8c), the surface stress falls on second and fourth syllable[9], where as in (7c) above, stress falls on the first and third syllable.

(8) a. gúygal b. yábulámgu c. madyíndaŋá:l

This data highlights the central problem of Yidiny stress: underlyingly odd-syllabled words (1b, 7c, 8c) have surface iambic stress, and underlyingly even-syllabled words have surface trochaic stress (1a, 7a-b, 8a-b). If underlying trochees are posited on all forms, as in this analysis, the problem becomes: how to derive iambic surface stress on

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[7]Dixon states "about 85% of the words in recorded Yidiny texts contain an even number of syllables." While some of these will have iambic surface stress (they are derived from underlying odd-syllabled multimorphemic forms, undergoing Final Syllable Deletion), by far the most productive source of surface even-syllabled words is underlying even-syllabled words, which exhibit trochaic stress.

[8]At this point, all final syllables of odd-syllabled words are unfooted and unstressed.

[9]The fifth syllable is later deleted by Final Syllable Deletion. This point is detailed in section 4.2.

odd-syllabled forms from trochaic stress? A constraint on Stress Lapse in Yidinʸ forces a relabeling from trochaic to iambic stress on odd-syllabled forms.

Notice that in (8c), there are two adjacent weak nodes at the right edge of the word. This is known as Stress Lapse (Kager 1992). In Yidinʸ, two adjacent weak nodes constitutes an ill-formed structure:

(9) Stress Lapse Avoidance: *w w

Stress Lapse Avoidance forces a resolution of the form in (7c), that is, the form in (7c) must no longer violate Stress Lapse Avoidance. Yidinʸ employs the following rule to resolve stress lapse:

(10) Stress Lapse Resolution: s w w -> w s w

(11) shows how Stress Lapse Resolution applies to the structure in (7c):

(11) a. Underlying Representation: madʸindaŋalnʸu

b. Footed Structure:

madʸindaŋalnʸu
s w s w w
\/ \/
F F

c. Stress Lapse Resolution:

madʸindaŋalnʸu
s w w s w
\/ \/
F F

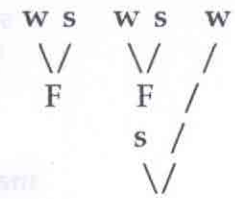
madʸindaŋalnʸu
w s w s w
\/ \/
F F

Stress Lapse Resolution applies whenever its input conditions (s w w) are met within a word. In this case, it applies twice (11c).

Summing up to this point: Yidinʸ 'iambs' are a result of Stress Lapse Avoidance. Trochaic footing creates a sequence of two unstressed syllables at the end of every odd-syllabled word. This sequence violates Stress Lapse Avoidance, triggering Stress Lapse Resolution, which relabels until Stress Lapse is eliminated in all positions, creating iambs in the place of trochees in the process.

After Stress Lapse Resolution applies, the final unfooted syllable undergoes Stray Adjunction.

(12) Stray Adjunction:



Stray Adjunction allows for a simple formalism of Penultimate Lengthening, by placing the penultimate syllable of odd-syllabled words under two strong nodes (cf. section 4).

In sum, the unusual Yidin^{y} surface stress results from: i) trochees, ii) built left to right, iii) resolve Stress Lapse across the word, and iv) stray adjoin unfooted syllables. No ordering relationship holds between these elements, which will be referred to collectively as Trochaic-Lapse Footing. This point later shows that the analysis here is superior to previous accounts (see Section 6).

3.2.1. Stress Lapse Resolution.

Theoretically, a language could resolve Stress Lapse in a number of ways, as exemplified in (13):

(13) Methods of Resolving Stress Lapse.

a. Deletion: w w → w

b. Insertion: w w → w s w

c. Reordering: s w w → w s w

d. Switching.

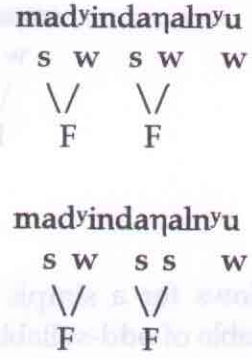
There are two types of switching:

i) Left switching: w w → s w

ii) Right switching: w w → w s

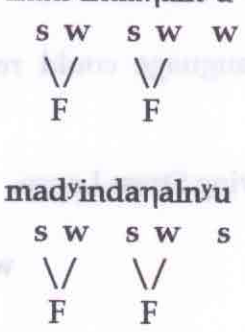
It is unclear whether Insertion or Deletion in (13a) and (13b) ever resolve lapse. Reordering, in (13c) above, takes a window of three elements and reorders them. Switching, in (13d) above isolates two units and switches one to the opposite value. Yidin^{y} might be expected to employ switching (13d) to avoid Stress Lapse, since the window of switching is two syllables, and Yidin^{y} has disyllabic feet. However, left switching would create Stress Clash within a foot:

(14) Left Switching



As Kager (1993) states, "feet contain a single head." That is, crucial to the concept of the foot is the idea that there is a one to one correspondence between foot and head. Left Switching can not be allowed in Yidinʸ because it creates a two headed foot, a construct specifically ruled out in metrical theory. Right switching would create a strong node in an unfooted syllable:

(15) Right Switching



Yidinʸ could employ either Relabeling or Right Switching to resolve Stress Lapse; Relabeling is the strategy chosen[10].

3.3. The Eurhythmy Principle and Stress Lapse.

According to Kager (1993) a general principle governs rhythmic stress systems:

(16) **Eurhythmy Principle**: A process is evaluated higher to the extent that it minimizes rhythmic ill-formedness.

[10]Right Switching, creating a strong node over the final syllable of odd-syllabled words, counters Final Syllable Deletion, which deletes such syllables. By leaving the weak node over the penultimate syllable, Right Switching does not motivate Penultimate Lengthening in odd-syllabled words. Reordering leaves the weak node in the final syllable, facilitating possible deletion, and moves a strong node to penultimate position, providing the conditioning for lengthening.

Within Yidiny two adjacent weak nodes are ill-formed, even if the two nodes are separated by a foot boundary; Stress Lapse Resolution is directly motivated by the Eurhythmy Principle above, which is observed in some form by all rhythmic stress systems (Kager 1993). Kager also states:

(17) Since, for independent reasons, feet contain a single head, the prosodic word (or phrase) is the natural domain in which clashes may be measured. In contrast, there is no inherent maximum of *stressless* elements within the foot. Consequently, lapse may be measured within the foot, which seems to be the domain of lapse avoidance in rhythmic stress systems. (emphasis Kager)

(17) argues that: since there is a maximum of one metrical head per foot, Stress Clash is typically resolved within the domain of the word. Since, however, there may be more than one weak node within a single foot, Stress Lapse is avoided only within the domain of the foot. This is restated as (18):

(18) A language may
  a. Disallow Stress Clash within the domain of the Prosodic Word.
  b. Disallow Stress Lapse within the domain of the Foot.

Only ternary and unbounded systems have the potential for lapse within the foot. Unbounded systems are not sensitive to lapse: there is one head, and several non-heads per word. Ternary systems have two non-head elements per foot, and lapse avoidance can apply within the foot, and *only* within the foot: Two adjacent ternary feet can not be constructed such that no non-head elements are adjacent within and across the feet:

(19) a. Lapse across feet: (.*.)(.*.)

  b. Lapse within a foot (.*.)(*..) or (..*)(.*.)

In binary systems, there can only be one head and one non-head element in the foot, that is, there can *never* be lapse within the foot. By the same reasoning as in (17), since there is a maximum of one non-head element within a binary foot, the prosodic word is the domain of lapse avoidance in binary stress systems. Yidiny provides a case where this prediction is realized: Lapse avoided in the domain of the word. (20) is a summary of Clash and Lapse avoidance in rhythmic stress systems:

(20) An unbounded stress system may:
a. Disallow Stress Clash within the domain of the Prosodic Word.

A ternary stress system may:
a. Disallow Stress Clash within the domain of the Prosodic Word.
b. Disallow Stress Lapse within the domain of the Foot.

A disyllabic stress system may:
a. Disallow Stress Clash within the domain of the Prosodic Word.
b. Disallow Stress Lapse within the domain of the Prosodic Word.

While each system may treat clash identically, they may be differentiated by the way in which lapse is resolved in each system. That is, while each system may ignore lapse altogether, if a given system is sensitive to lapse, it will be resolved in a different domain depending foot type. Specifically, if a binary stress system is sensitive to lapse, the domain of lapse avoidance will be the prosodic word. It is therefore predictable from the fact that Yidin^{y} has a disyllabic stress system, and the stipulation that Yidin^{y} is sensitive to lapse, that lapse is resolved within the domain of the word.

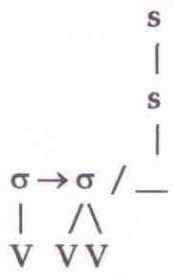
4. Phonological Processes of Yidin^{y}

Two key processes, Penultimate Lengthening and Final Syllable Deletion, are triggered by the interaction of penultimate stress and the aberrant foot structure resulting from Trochaic-Lapse Footing at the right edge of odd-syllabled words (cf. Section 3.1). Section 4.1 describes Penultimate Lengthening, and Section 4.2 describes Final Syllable Deletion.

4.1. Penultimate Lengthening.

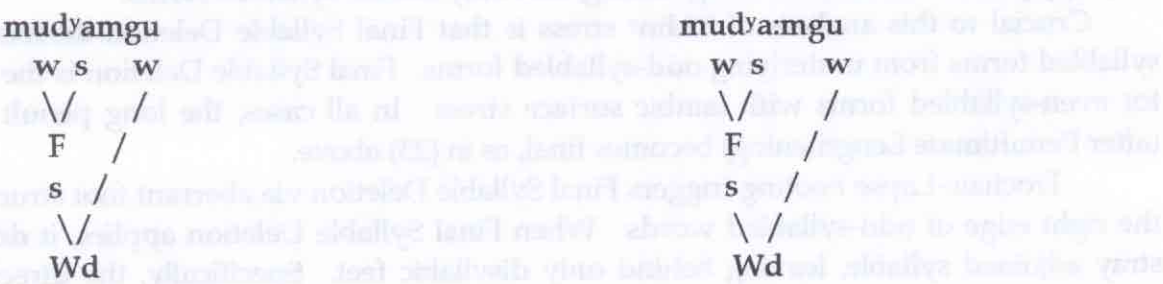
The primary source of vowel length in Yidin^{y} is a rule of Penultimate Lengthening, which lengthens the penultimate vowel in all odd-syllabled words. Stray Adjunction (12) explains the context of lengthening in penultimate position, since the penultimate syllable of odd-syllabled words occurs beneath two strong nodes.

(21) Penultimate Lengthening.



This rule applies to all and only odd-syllabled forms since only odd-syllabled forms have a stray adjoined syllable, thus resulting in a penult dominated by two strong nodes. (21) applies as follows:

(22) i. Footed structure → ii. Penultimate Lengthening



Since the application of (21) depends on a syllable falling under two strong nodes, this rule will never apply except to the penultimate syllable in odd-syllabled words, where Stray Syllable Adjunction creates two strong nodes.

Left to right footing in (22i) triggers the Penultimate Lengthening rule in (22ii) above. The next section shows that Penultimate Lengthening feeds Final Syllable Deletion, which, like Penultimate Lengthening, applies only to odd-syllabled words.

4.2. Final Syllable Deletion.

Trochaic-Lapse Footing triggers Final Syllable Deletion as well as Penultimate Lengthening. Unlike Penultimate Lengthening, Final Syllable Deletion does not apply to all odd-syllabled words.

Final Syllable Deletion applies to Stray Adjoined syllables, as shown in (23) below:

(23) madʸindaŋa:lnʸu madʸindaŋa:l

Final Syllable Deletion is a very complex phenomenon: it only applies to suffixes, and only to some of these. Sometimes an entire syllable is deleted, sometimes only a vowel. It is to some extent constrained by the phonotactics of the language, but it is largely unpredictable which suffixes it applies to, and how much material is deleted. It is not the focus of this paper to argue for the correct formalism of Final Syllable Deletion, so a simplified formalism is presented here:

(24) Final Syllable Deletion. $V \rightarrow \varnothing$ / V:__ #

Final Syllable Deletion will always occur in this environment: between a long vowel and a word boundary. The long vowel is always created in odd-syllabled forms by Penultimate Lengthening, never in even-syllabled forms. Thus, Final Syllable Deletion can only apply after Penultimate Lengthening, and only in odd-syllabled forms.

Crucial to this analysis of Yidiny stress is that Final Syllable Deletion derives even-syllabled forms from underlying odd-syllabled forms. Final Syllable Deletion is the source for even-syllabled forms with iambic surface stress. In all cases, the long penult vowel (after Penultimate Lengthening) becomes final, as in (23) above.

Trochaic-Lapse Footing triggers Final Syllable Deletion via aberrant foot structure at the right edge of odd-syllabled words. When Final Syllable Deletion applies, it deletes a stray adjoined syllable, leaving behind only disyllabic feet. Specifically, the direction of footing, left to right, creates the structure necessary to trigger Final Syllable Deletion. (25) summarizes Yidiny footing and prosodic effects.

(25) Trochaic-Lapse Footing:

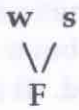
1. Build trochaic feet from left to right.
2. Stress Lapse Resolution.
3. Stray Syllable Adjunction.
4. Penultimate Lengthening.
5. Final Syllable Deletion.

All of these steps are unordered with respect to each other. Feet are built on Underlying Representations. Stress Lapse Resolution resolves lapse created by the foot building algorithm. Stray Syllable Adjunction applies to unfooted syllables, feeding Penultimate Lengthening, which applies to vowels under two strong nodes. Final Syllable Deletion is fed by Penultimate Lengthening, removing material between the long penult vowel and the word boundary. Note that (25.1) applies to all words, and (25.2-5) apply only to underlyingly odd-syllabled words.

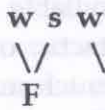
5. Iambic Footing.

This section presents Hayes (1982). This account of Yidiny stress, which is referred to as Iambic Footing, posits iambs which are switched to trochees in most cases.

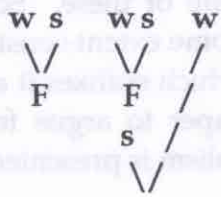
(26) a. guygal



b. yabulamgu

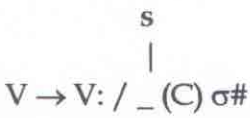


c. madyindaɳalnyu

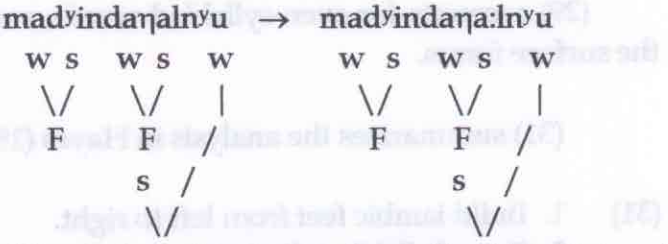


(26) shows that iambic stress is posited, and the final syllable in odd-syllabled words is stray adjoined. After iambic footing, Penultimate Lengthening applies. Hayes' posits Penultimate Lengthening as in (27a), with the appropriate derivation shown in (27b):

(27) a. Penultimate Lengthening.

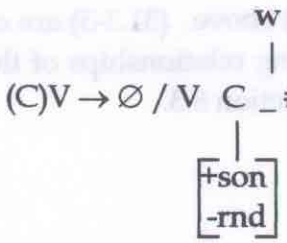


b. Sample derivation:

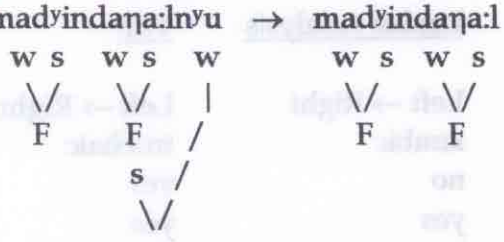


Final Syllable Deletion follows Penultimate Lengthening, as formalized in (28a) and derived in (28b).

(28) a. Final Syllable Deletion.



b. Sample Derivation.



The iambs posited in (26) are preserved on odd-syllabled forms, yielding the correct surface stress, and correctly triggering Penultimate Lengthening and Final Syllable Deletion. At this point, stress on even-syllabled forms is iambic, unchanged from (26a and b) above. To account for the surface trochaic stress of even-syllabled forms, Hayes proposes Stress Shift, as formalized in (29):

(29) Stress Shift: **Relabel all sister nodes s w, unless there is a strong node dominating a long vowel.**

This rule applies as follows:

(30)

(29) accounts for even-syllabled words, switching stresses to make them accord with the surface forms.

(31) summarizes the analysis in Hayes (1982):

(31)
1. Build iambic feet from left to right.
2. Stray Syllable Adjunction.
3. Penultimate Lengthening.
4. Final Syllable Deletion.
5. Stress Shift.

No ordering relationship holds between (31.1) and (31.2) above. (31.3-5) are ordered with respect to each other in the sequence shown. The ordering relationships of the rules above, specifically relating to Stress Shift, will be discussed in section 6.3.

6. Against an Iambic Analysis.

(32) compares the Iambic Analysis of Hayes (1982) and Trochaic-Lapse Footing ('TLF').

(32)

Mechanism	Iambic Analysis	TLF
Footing Direction	Left → Right	Left → Right
Foot Heading	iambic	trochaic
Stress Lapse Resolution	no	yes
Stray Syllable Adjunction	yes	yes
Penultimate Lengthening	yes	yes
Final Syllable Deletion	yes	yes
Stress Shift	yes	no

The differences between the two analyses are: i) The Iambic Analysis posits underlying iambic feet, while trochaic feet are posited in TLF. ii) Stress Lapse Resolution

in TLF relabels trochees to iambs, while the Iambic Analysis relabels from iambs to trochees with Stress Shift. These two differences show that Trochaic-Lapse Footing is the better analysis: Most crucially, while Stress Lapse Resolution is shown to be related to general metrical principles in Section 3.3, Stress Shift is shown to be unrelated to any principle of metrical theory in Section 6.2 below. In Section 6.1, the Stress Shift rule of the Iambic Analysis is discussed. In Section 6.3, it is shown that the Iambic Analysis requires an ordering stipulation that Trochaic-Lapse Footing does not. In Section 6.4, the analysis in Halle and Vergnaud (1987) is briefly discussed, and shown to be inferior to the current analysis.

6.1. Stress Shift.

Here again, is Hayes' Stress Shift:

(33) Relabel all sister nodes s w, unless there is a strong node dominating a long vowel.

Stress Shift in Iambic Footing is conditioned by the absence of a strong node dominating a long vowel. This point is stipulated, i.e. the absence of a strong node dominating a long vowel does not condition similar relabeling in other languages. Thus, there is no principled reason why relabeling occurs in such an environment, i.e., (33) is ad hoc.

There is a second stipulation inherent in this rule. Hayes crucially includes the word 'all' in this rule, thereby insuring that this rule applies across the entire word, not simply foot internally (which would lead to Stress Clash across a foot boundary, to resolve this, the Iambic analysis would need a further Stress Clash Avoidance rule in addition to the rule in (33)). Hayes refers to this as "labelling harmony: if one foot of the word receives....[re]labeling, the others must follow suit." However, "labelling harmony" is not independently motivated outside of this specific case. In contrast, the relabeling mechanism in Trochaic-Lapse Footing is independently motivated, related to a general tendency across languages to maintain rhythmic well-formedness (cf. Section 3.3).

6.2. The Iambic Analysis and the Eurhythmy Principle.

On the surface it may seem that the Iambic Analysis can be related to the Eurhythmy Principle (cf. Section 3.3) just as Trochaic-Lapse Footing is, since both achieve alternating surface stress. However, Stress Shift in the Iambic Analysis does not "minimize rhythmic ill-formedness." In positing underlying iambs, all forms have alternating stress throughout the derivation (see [26] to [30] above). Thus, no process in Iambic Footing is related to the Eurhythmy Principle, rather the Stress Shift rule of Iambic Footing simply switches iambic alternating stress to trochaic alternating stress. While the Eurhythmy Principle is central to Trochaic-Lapse Footing, it is unrelated to Iambic Footing in Hayes (1982). For this reason and by the argument in the previous section, Trochaic-Lapse

Footing, specifically Stress Lapse Resolution, is preferable to the Iambic Footing Analysis, specifically Stress Shift.

6.3. Rule Ordering.

Further arguments favor Trochaic-Lapse Footing over Iambic Footing. 1) Positing trochees is preferable to positing iambs, and 2) Iambic Footing requires a rule ordering stipulation that Trochaic-Lapse Footing does not.

Section 3.2 presented motivations for underlying trochees in Yidiny. These same facts show why underlying trochees are preferable to underlying iambs. First, Stress Fronting: "Irrespective of long vowels..., there is a tendency (phonetically) to stress the initial syllable of each (grammatical) word" (Dixon 1977:101). If Yidiny has underlying iambs weak node is placed at the first syllable of every word, thus failing to explain Stress Fronting (in odd-syllabled forms where the iambs remain unswitched by Stress Shift).

Constrastive vowel length, which always surfaces in odd-syllabled words (see section 4.1) is strongly associated with iambic surface stress, and crucially, is a recent innovation shared by Yidiny and a few related adjacent languages. It is not present in most languages related to Yidiny. Most, if not all, of these related languages (mostly forms of Dyirbal) which do not share contrastive vowel length with Yidiny, have trochaic stress systems. Thus, Yidiny is historically trochaic. This fact, and the fact that the overwhelming majority of surface forms in Yidiny itself exhibit trochaic stress, are a consistent result of positing trochaic stress.

Both Trochaic-Lapse Footing and the Iambic Footing Analysis require rules of Penultimate Lengthening. However, Stress Shift (29) in the Iambic Footing analysis relies on the long vowel created by Penultimate Lengthening to prevent overapplication of Stress Shift. Penultimate Lengthening creates the long vowel which is referred to in the "unless clause" of Hayes' rule (33).

The stipulation that Stress Shift follows Penultimate Lengthening in the Iambic Footing Analysis is required to prevent Stress Shift from applying to odd-syllabled forms as well as even-syllabled forms. In contrast, in Trochaic-Lapse Footing, no ordering relation holds among any elements of the analysis. Thus, Hayes' analysis requires an ordering relationship that Trochaic-Lapse Footing does not. The simpler proposal in this paper is therefore preferable to Hayes' proposal.

6.4. Alternate Metrical Planes.

Another analysis of Yidiny is found in Halle and Vergnaud (1987). A discussion of this is included in this paper because it is a more recent, if less detailed analysis than that in Hayes (1982). In this analysis, the problem of iambic feet in odd-syllabled words and trochaic feet in even-syllabled words is resolved by positing both underlying trochees and iambs in underlying representation, on separate "planes," and then deleting one or the other as appropriate. The following is a brief summary of Halle and Vergnaud's analysis:

(34) 1. Create two parallel metrical grids from left to right, one left-headed (P_1), and one right-headed (P_2).

2. Penultimate Lengthening applies.

3. Alternative metrical plane deletion: "Delete P_2 if on P_1 there is a constituent head dominating a long vowel; otherwise delete P_1."

This analysis is similar to that in Hayes (1982); however, instead of relabeling, this analysis creates two alternate foot structures simultaneously, then deletes one or the other after Penultimate Lengthening has applied. The idea of "alternative metrical planes" is a very powerful formalism: presumably, any number of stress systems could be placed simultaneously on any number of planes, those stress types which do not surface in a given word being deleted. If two metrical planes are posited for a language, and both have binary feet, it is a coincidence: there is nothing in the formalism of the "alternative plane" which constrains foot type. However, in Yidiny for example, there are only two types of surface stress iambic and trochaic, and both are binary. Trochaic-Lapse footing derives surface iambs from underlying trochees, and the binarity is retained: it is not a coincidence that all Yidiny feet are binary. This generalization is not captured by the analysis in Halle and Vergnaud (1987).

This analysis also suffers from the same deficiency as that of Hayes, namely, an extra ordering stipulation. Rule 3, which deletes the unnecessary plane, is necessarily ordered after rule 2, penultimate lengthening. As stated above, Trochaic-Lapse Footing does not require such a stipulation. In addition, the analysis in Halle and Vergnaud (1987) can not be related to the Eurhythmy Principle, since no part of this analysis addresses any rhythmic ill-formedness in Yidiny.

Trochaic Lapse Footing (TLF) is preferred to Iambic Footing (IF), because: 1) Stress Lapse Resolution in TLF is related to the Eurhythmy Principle, while Stress Shift in IF is an ad hoc stipulation. 2) Stress Fronting, diachrony, and synchronic frequency of trochaic surface stress all more easily result from underlying trochees than from iambs. 3) IF requires an extra rule ordering stipulation that TLF does not. The analysis in Halle and Vergnaud (1987) also requires and extra ordering stipulation, and does not explain how the two stress patterns of Yidiny are related.

7. Stress Lapse and the Uniformity Parameter.

McCarthy and Prince (1986:9-10) note that Yidiny allows both iambic and trochaic feet, and propose the Uniformity Parameter, specifically part (ii) in response to this fact:

(35) **Uniformity** Parameter: A language may require that all feet have the same labelling
(i) everywhere
(ii) within the word

Yidin^{y} is a language that requires the same labeling within the word; that is, a word may have either trochaic or iambic stress, but the same stress pattern is consistent within the word. What is not apparent from the Uniformity Parameter is that the labeling of any particular word is predictable. In Yidin^{y}, underlyingly odd-syllabled words have iambic surface stress, and underlyingly even-syllabled words have trochaic surface stress. This paper presents an account of Yidin^{y} stress superior to that in Hayes (1982) and Halle and Vergnaud (1988), and doing so, further clarifies the relationship of Stress Lapse to various stress systems. Specifically, a binary system which is sensitive to Stress Lapse will resolve the lapse in the domain of the word. In Yidin^{y}, Stress Lapse arises only in odd-syllabled words, and the mechanism of Stress Lapse Resolution switches the stress pattern from trochaic to iambic in precisely those circumstances where iambic stress surfaces, namely, odd-syllabled forms. A principled reason thus exists for the coexistence of surface trochaic and iambic stress in Yidin^{y}, which led McCarthy and Prince to posit part (ii) of the Uniformity Parameter. Thus, under this analysis, Part (ii) of the Uniformity Parameter is not simply a descriptive statement necessitated by the unusual surface stress in Yidin^{y}, rather, it follows from the fact that rhythmic binary systems which are sensitive to lapse will resolve lapse across the entire word.

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