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## YIDINY STRESS: A METRICAL ACCOUNT

David Nash  
M.I.T.

Yidiny is a Pama-Nyungan language no longer spoken in the north-east of Queensland, Australia. (1) In this paper, I shall be concerned with alternations of vowel-length and stress in Yidiny, and account for them within the theory of metrical trees in a way which helps show their interconnexion and status with respect to the possible stress patterns of a natural language. The major published work in the metrical theory framework, as adopted here, is Liberman & Prince (1977). The most significant amendment is the adoption of the stronger proposal, originally due, as far as I know, to Alan Prince, that the segmental feature [+stress] be done away with and thus that all stress patterning be computed through the metrical tree. Along the way, I shall suggest some modifications in the only description of Yidiny phonology, that of Dixon (1977a) and his grammar of the language (Dixon (1977b), henceforth GY).

The orthography used here corresponds to Dixon's with replacements for the non-standard symbols: /ny/ and /j/ will represent the lamino-palatal nasal and stop respectively, and /R/ the retroflex continuant (Dixon's /ɣ/). I shall retain /r/ for the apical trill, and /ŋ/ for the velar nasal. Vowel length is represented orthographically by a colon, and phonologically by the vowel feature [+long].

### Syllable structure

First we must observe the nature of Yidiny's syllable structure, since it is generally the syllables that constitute the terminal nodes of the metrical tree. The data is from GY, 35-37 (§2.1.2. "Phonotactics") and supporting evidence from other sections of that grammar.

Basically the Yidiny syllable has the form C V (C). The onset C cannot be one of {l, r, R}, but can be any other single consonant. The coda C can be any single sonorant. (2) Hence we find intervocalically within a word any single consonant, or clusters of two consonants in which the first may be any sonorant and the second any consonant other than {l, r, R}. (There are no geminate consonants).

However, somewhat unexpectedly (see, for instance, McCarthy (1977:209; 1979), intervocalic clusters of three consonants also occur. The second two members of these triconsonantal clusters are always a nasal and stop (in that order), and virtually all such pairs are homorganic. The ones that are not homorganic occur in the triples /lnj/ and /lnb/

(GY,36), There is only one word recorded with the latter (viz. /dulnbilay/ 'white cedar'), but Dixon implies (GY,36) that there are at least two attestations of /lnj/ (one must be /walnja-l/ 'select best of anything', GY,557; cf. /walnyji/ 'cliff').

Disregarding this handful of exceptions (in the same way that Dixon allows a few exceptions to his generalizations about the possible Yidiny syllable), we can save the generalization that words are composed of a sequence of syllables, and furthermore explain why it is the homorganic clusters that in general occur in such triple clusters, by entertaining an account in terms of complex segments. This account says that there is another series of consonants in Yidiny, which we could refer to as "pre-nasalized stops". Here they will be symbolized by B,D,J,G -- upper-case letters corresponding to the (oral) stop consonants, the phonotactic behavior of which they match.

Apart from the evidence of the canonical syllable shape C V (C), there are a few more pieces of evidence in favor of the pre-nasalized stop analysis of homorganic clusters.

(1) Within morphemes there are extra restrictions on clusters of two consonants, additional to those already given:

- (1.1) the second member cannot be d or n,  
i.e. \* [-nas, +son] [-dist];
- (1.2) none have a nasal other than n as first member,  
i.e. \* [+nas, +dist] [-syll];
- (1.3) y cannot occur before j or ny,  
i.e. \* [-cons] [+cor, +dist].

Without amendment, these morpheme-structure conditions will correctly exclude triconsonantal clusters such as /rnd/, /mɲj/, or /ynyj/ (i.e. \*/rD/, \*/mJ/, \*/yJ/ by each condition in turn).

Furthermore, the morpheme-structure generalization now holds that every morpheme (except the vowel-initial /#ala/) begins with a single consonant, since the ERGATIVE case-suffix, for instance, is now to be written /-Gu/, with allomorphs /-Bu, -Du, Ju/ etc., and the DATIVE /-Da/ etc.

(2) The instances of "nasal insertion" (GY,100-1) can be attributed to the pre-nasalized series. The possible /-nyju/ form of the ERGATIVE can be seen as a less reduced allomorph of /-Gu/, viz. /-Ju/, and the possibility of further dissimilation, giving /-nju/, is not ruled out, except, irrelevantly, after another consonant). And those reduplicated stems that show "nasal insertion" at the reduplication boundary are to be analyzed as deriving from an underlying pre-nasalized stop. Note for instance that this "insertion" obeys the phonotactic constraints given above -- for instance, there is no insertion recorded before a root beginning with /y/ or /w/. Thus /baygaRmbayga-R/ 'feeling very sore' is derived from the root /Bayga-R/, whereas /bunjabunjan/ is from /bunjan/. It is reported that the nasal is homorganic to the following stop "in some cases"; the examples where it is not produce clusters of two, not three, consonants,



and could have other explanations, such as identifying the n in buganbugany, (from /buga-n/, with tense suffix involving /ny/ added) as a conjugation-marker which entered the structural description of the reduplication rule.

(3) The account of syllabification implicit here gives different syllable breaks within intervocalic clusters from those that Dixon proposes (G,37). A diconsonantal cluster VCCV will not always be broken as VC.CV, but rather, if the two consonants are derived from a pre-nasalized stop, as V.CCV. It is this structure that appears to be involved in two processes reported by Dixon:

(3.1) the "slow pronunciations" (GY,100-1) of /gilbayDa/ (i.e. /gilbaynda/) and /baRuBar/ are respectively [gilbay#d̥a] and [baRu#b̥ar] -- the general word-initial neutralization of the pre-nasalized stop to the oral series has been applied word-internally, as might be expected in particularly slow speech.

(3.2) the stem-formation rule of reduplication copies the first two syllables of the root to the left. However Dixon reports (GY,156,233) that a "syllable-final nasal which is homorganic with the following stop is not reduplicated"; so we have

galagal <u>amba</u> ra:	BUT'	jabi <u>R</u> jabi:da
majimaj <u>inda</u> -n		nalal <u>nal</u> al
		ginda <u>g</u> indalba
		biliy <u>b</u> iliy
		jugar <u>j</u> ugarba-n

But this is just what would follow from the syllabification proposed here, without modification to the reduplication rule.

As mentioned in (3.1) above, there is a rule which simplifies a pre-nasalized stop in word-initial position. In the complimentary environment a pre-nasalized stop will of course be realized as a homorganic cluster; i.e. there is a rule with the effect that

$$B, D, J, G \rightarrow \begin{cases} b, d, j, g \text{ resp.} & / \# \text{---} \\ mb, nd, nyj, ng \text{ resp.} & \text{elsewhere} \end{cases}$$

and which is ordered after the processes of (3) above, but before the rules to be discussed in the remainder of this paper -- so that Final Dropping, for instance, will drop the /-gu/ of /-ŋgu/ leaving final /-ŋ/ under certain conditions.

This account of Yidiny syllabification has a further consequence for words with one of {l, r, R} occurring as an intervocalic C. Since these segments cannot begin a syllable, it follows in this account that the syllable break is VC.V. But Dixon states that "if a single consonant comes between two vowels the boundary precedes it (V.CV)" (GY,37), though he does not give his reasons for this. Later in this paper an argument will be given for the VC.V division when C is one of {l, r, R}.

### Regular stress patterns

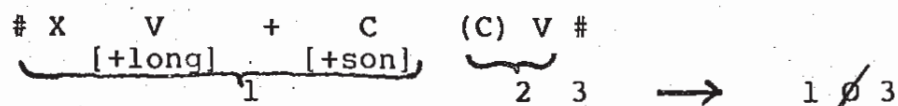
Most words of Yidiny have the regular stress pattern which will now be discussed. The irregular words are just those that involve one of the 29 irregular noun roots (out of 1300 nominal roots in Dixon's corpus), or one of 4 special verbal derivational affixes, and these will be integrated into the description in a subsequent section.

Consider the paradigm of these regular nouns (GY,77 etc.):

	'woman'	'mother'	'man'	'whale'	'possum'	'clothes'
ABS	bunya	mujam	mulá:ri	nunangára	janguy	gambi
ERG	bunyá:ŋ	mujá:mbu	mulariŋgu	nunangará:ŋ	jangú:yju	gambí:ŋ
COMIT	bunyá:y	mujá:mji	mulariyi	nunangará:y	jangú:nyji	gambí:
	/bunya/	/mujam/	/mulari/	/nunangara/	/janguy/	/gambi/

Following Dixon, note that the even-syllabled words have alternating stress from the left (i.e. from the beginning of the word), and the odd-syllabled words have a penultimate long vowel and alternating stress from the second syllable of the word. This observation is made at the level of representation where the ERG and COMIT inflexions are each a full syllable (/ -Gu/ say, and / -yi/, respectively) -- to derive the given forms a subsequent rule of Final Dropping applies, Dixon's Rule 2 (GY,58), basically:

#### FINAL DROPPING



Conditions: does not apply when suffix is (nominal) DATIVE, (verbal) PURPOSIVE, or verbal 'lest' (GY,50,54)

It is the stress and long-vowel assignment (which feeds Final Dropping) which is the center of interest in this paper, and which is here done in a manner quite different from that proposed by Dixon. Here the stress and general vowel-length are read off a structure called the "metrical tree", which is on a level of representation separate from the segmental one. A metrical tree is in general a single-rooted binary-branching tree whose terminal nodes immediately dominate the syllables, and thus organize the segments of words. For each language it has to be specified, within the universal limitations given by the theory Prince(1977) and others, that there are two levels within the metrical tree, namely that of the word and the foot, and that structural principles can be different at each level. Further hypotheses from metrical theory will be briefly explained as they

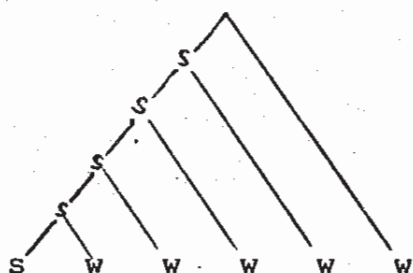


These trees then receive the node labels according to:

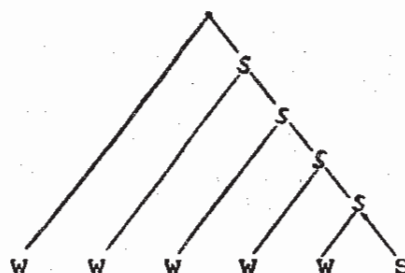
- subordination rule - (a) left-branching structures, and feet have strong (S) left-hand daughters  
 (b) right-branching structures have strong (S) right-hand daughters

That is, there are two basic labelled structures:

(a)



(b)



Notice that the labelling in (a) is the one that would be assigned by the Labelling Convention that Liberman & Prince(1977) justify for English:

- (L) Given sister nodes M N, label N with S iff it branches (and thus label M with W)

and the labelling in (b) would be assigned by the complementary convention:

- (L') Given sister nodes M N, label M with S iff it branches (and label N with W)

Referring to these two local subordination rules by L and L', the Yidiny subordination rule may be rewritten:

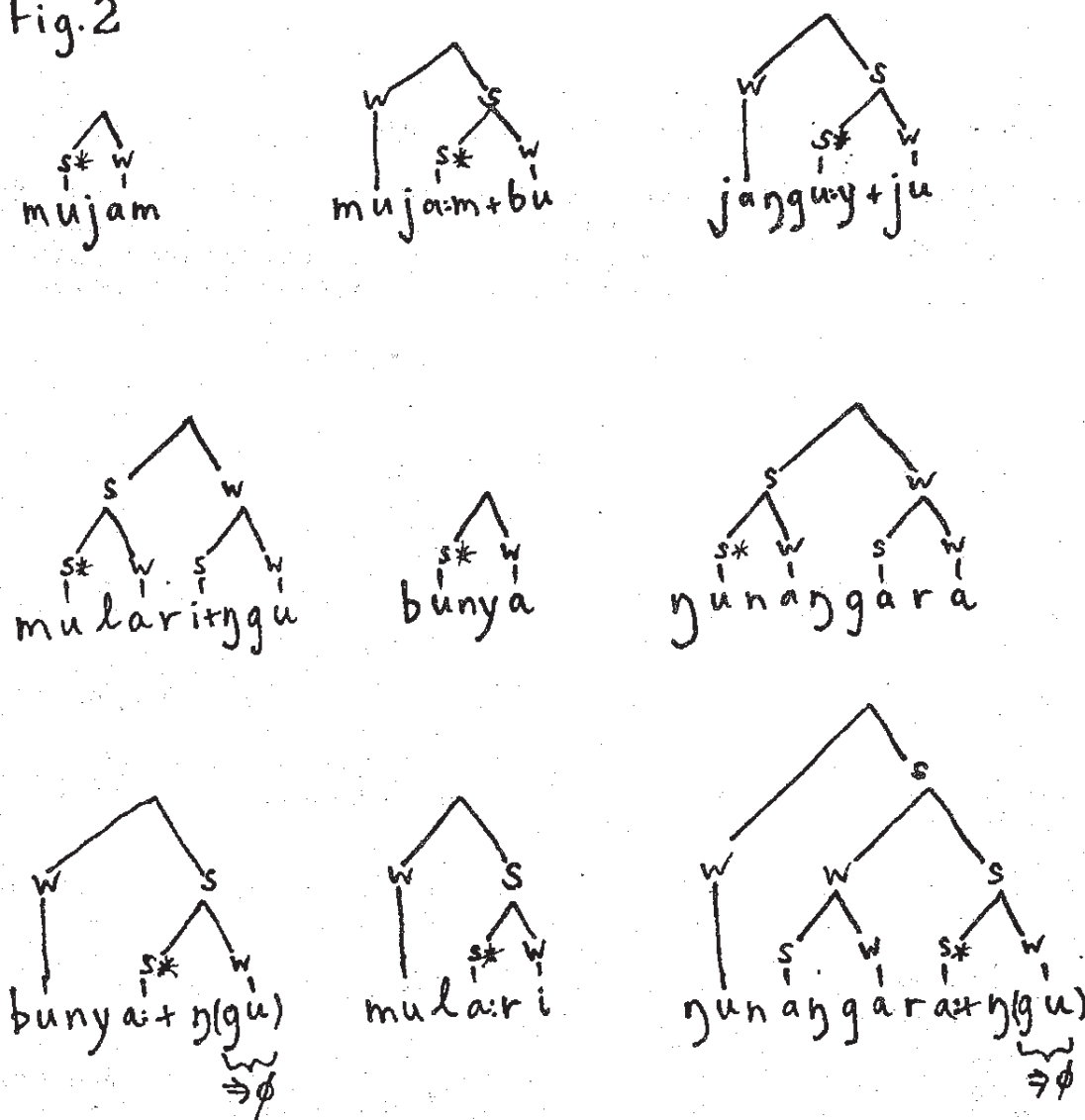
- subordination rule - (a) left-branching structures, and feet, select L  
 (b) right-branching structures select L'

This correlation between branchingness and subordination is the one which has been proposed as a universal by Vergnaud & Halle, at least as the default relationship in the absence of a language-particular rule to the contrary. I shall assume that it is a rule of Yidiny, and leave aside the question of its universal content.

When the subordination rule applies to the trees of Fig. 1, the labelled trees of Fig. 2 result.

Notice how the (underlyingly) odd-syllabled words are

Fig.2



distinguished from the even-syllabled words by their property of having an initial degenerate foot, and that the unusual word-level predicate "odd-syllabled" (as used in Dixon's account) is replaced here by the common foot-level predicate "degenerate" and word-level predicate "initial". In this respect, then, this account shows that Yidiny does not require the predicate "odd-syllabled" to be added to the universal vocabulary of phonological theory. What is unusual about Yidiny is the disjunction in the rule above which constructs the word-level tree. There are well-known examples of languages where the word-level tree is purely left-branching (e.g. Hungarian, or Latvian, with regular initial stress) or purely right-branching (e.g. Farsi (Iranian), with regular final stress; or Polish, with regular penultimate stress, i.e. stress on the final binary foot) (see Vergnaud & Halle (in preparation)), but this description of Yidiny dictates a combination of these two patterns.



Those terminal nodes of the metrical tree which are labelled S are the stressed syllables. One of these terminal nodes in each tree has the further property that it is dominated only by S's (i.e. between that syllable and the root of the tree there is a path which passes only through nodes labelled S, and through none labelled W). This has been called the designated terminal element (DTE), denoted by S\*, and is typically the syllable with primary stress in languages which distinguish degrees of stress. In Yidiny it serves in the rule of:

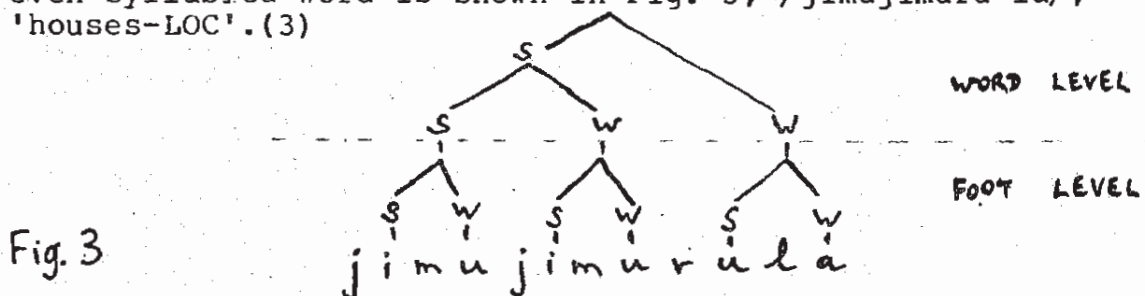
VOWEL LENGTHENING

$$V \rightarrow [+long] \quad / \quad VC \overset{S^*}{\text{---}}$$

("lengthen the vowel of a non-initial syllable that is the designated terminal element")

Long vowels introduced by this rule are shown in Fig. 2, and the DTE is indicated with \* though this is generally omitted since it can easily be read off the tree. The segments that are deleted by Final Dropping are indicated in parentheses. (Note that the remaining syllable at the end of such a word is a degenerate foot.)

The reader can check that these rules give the stress and vowel-length alternations as in the paradigms above. A longer even-syllabled word is shown in Fig. 3, /jimujimuru-la/, 'houses-LOC'.(3)



When listening to tapes of Yidiny texts one notices that stress patterns often do not correspond to those given by the above rules. The deviations fall under the generalization described by Dixon (GY,101) as Stress Fronting:

"Irrespective of long vowels, and underlying stress assignment, there is a tendency (phonetically) to stress the initial syllable of each (grammatical) word."

My impression from listening to Dixon's texts 2,9,14, and Hale's

two word- and sentence-list tapes, is that Stress Fronting applies more often than not. Dixon says "Stress fronting is most apparent in texts (probably depending on sentence intonation, amongst other things)" as opposed to "learning situations" -- from which I would conclude that it was a mark of normal speech. But he asserts that "the actual stress pattern of a word most frequently does coincide exactly with the underlying stress specification" [i.e. that given by rules above]. The phenomenon surely deserves further study. Here I shall indicate one possible way of including it in the metrical account:

#### STRESS FRONTING

Optionally, # w<sup>^</sup>s → # s<sup>^</sup>w  
 (i.e. reverse the subordination of the first syllable, by labelling it S and its sister in the word-tree W)

Note that among regular words this rule will apply only to those forms with an odd number of underlying syllables: regular even-syllabled words bear initial stress anyway. Furthermore, it has the consequence that stresses later in the word are not permuted by Stress Fronting -- Dixon does not discuss this, but my observations corroborate it, e.g. [wamba:mba:nji] from /wambawamba:nji/ (GY,520 Text 2, line 51), [wayuwayunya] from /wayuwayunya/ (GY,521 2.57).

#### Irregular nominal stress patterns

In this section the two known types of irregular noun root are integrated into the above account of stress and lengthening. Consider these paradigms (GY,84,77 resp., and 140-141):

	'mopoke owl'	'march fly'	'catfish'	'black nose wallaby'
ABS	durgú:	galámbará:	galbí:	gurí:li
ERG	durgú:ŋ	galámbará:ŋ	galbí:(ny)ju	gurilí(ny)ju
COMIT	durgú:y	galámbará:y	galbí:nyji	gurilínyji
	/durgu:/	/galambaRa:/	/galbiy/	/guriliy/

The first two columns exemplify the roots to which Dixon assigns an underlying long vowel. These are all even-syllabled and long-vowel-final (10 are disyllabic, and 1 quadrisyllabic, not including the uncommon uninflectables /wanyinbara:/ 'what's the matter?', /-gaRa:/ 'CAUSAL' and /-julu:/ 'DURATIVE' (GY,86)), leaving aside the hapax legomenon /waRa:buga/ 'white apple tree' (GY,86) which has the only known root-internal long vowel. The last two columns exemplify the roots which have (on the basis of suffix allomorphs they select) final /-iy/ underlyingly. (There are 17 of these: 11 di- or quadrisyllabic, and 6 trisyllabic including 2 proper names and 2 roots in the Dyalnuy

avoidance vocabulary. See GY,82-3.)

In general, these irregular even-syllabled roots have the stress pattern associated otherwise only with odd-syllabled words. Yet there is no other evidence on which one might assign them an extra syllable underlyingly, as can be adduced for the 80 noun roots of GY 2.3.4 (56-68).

To accommodate these roots, I propose amending the foot-formation rule given above by adding the clause:

If the rime of the final syllable is /V:#/ or /iy#/,  
then the final syllable is a degenerate foot.

Fig. 4 shows the metrical trees of the examples as predicted by the rules with this amendment.

Notice that the disyllabic words consist of two degenerate feet, and thus, since the first foot is degenerate, by the word tree construction rule above, a right-branching word-level tree is assigned. Even though the word tree is small and not right-branching by inspection (the word it dominates being a short one), nevertheless its being right-branching carries over to the application of the subordination rule as given above. That is, the word tree is here labelled by L' and is  $w^s$  rather than  $s^w$ .

I propose to handle this formally in a fashion that been applied to the analysis of other languages by Halle & Vergnaud, by constraining the interaction of the word-level and foot-level as follows:

The terminal nodes of the word tree, i.e. those that immediately dominate the feet, do not count as branching at the word-level, EXCEPT for the first foot of the word, which counts as branching at the word-level iff it is a branching foot (i.e. non-degenerate).

If the rule constructing the word-level tree is reviewed at this point, it will be seen that it has the effect of projecting the branchingness of the first foot throughout the word tree: with the first foot of the word taken as part of the word tree, it remains the case that the word tree is homogeneous with respect to branching (i.e. everywhere left-branching, or everywhere right-branching). The amendment just introduced attempts to make explicit this generalization, and help explain why the word-level rule has the effect it does.

Furthermore, the subordination rule could now be changed to reflect the revision of the notion of "branching" which it refers to:

subordination rule - (a) (binary) feet are labelled  $s^w$   
(b) word tree is labelled by L'



It should perhaps be noted that this revision is not needed to derive the correct forms, as the earlier versions would still do that, but rather may be seen as a simplification of it.

As Dixon notes (GY,84), there are words with underlying /-a:#/ and /-u:#/ but none with /-i:#/ , and it seems that at least for this rule, words in /-iy#/ pattern with words with long final vowel. It might be hoped that the long vowels in these words are always derivable by the Vowel Lengthening above. This would be possible only if these vowels are marked to begin a (possibly ternary, perhaps even larger) foot which extends to the end of the word, for Dixon observes that "a root ending in a long vowel will retain this length before all inflectional and derivational affixes." (GY,136), e.g.

[durgu:n] [durgu:nula]  
 'mopoke owl-GENITIVE' 'mopoke owl-GEN-LOC' .

(GEN suffix is normally /-ni/, regularly reducing to [-:n] on vowel-final even-syllabled stems, and is [nu] on those stems when a further case-ending is suffixed.)

In such a view, these words would have trees as in Fig. 5, and Vowel Lengthening would apply to assign the observed long vowels. Feet larger than binary are assumed to be left-branching, and are labelled by L. There are no instances, as far as I can tell, where suffixes combine to make this extended foot larger than ternary.(4)

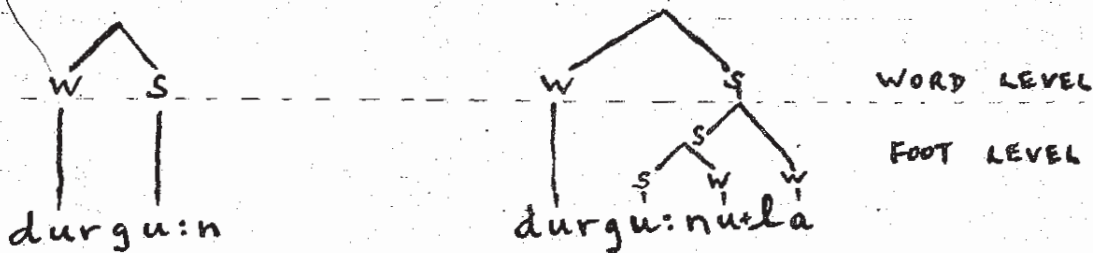


Fig.5

Suppose there was an odd-syllabled root #CVCVCV# which had a final vowel exceptional in the same way, so that when un-inflected its final syllable constitutes a degenerate foot. Then it would have the left-hand metrical structure shown below; and with a monosyllabic suffix it would have the right-hand metrical structure:



BLANK IN ORIGINAL

Notice how similar this behavior would be to that of a regular odd-syllabled root. The inflected forms would pattern identically (cf. *m̄lari+ngu*, say, above) and the root uninflected would be like a regular odd-syllable root with Stress Fronting applied (cf. [gá:li:na], GY,101). The sole difference is the short vowel in the second, unstressed, syllable. One might expect there to be a couple of roots with this property in Dixon's corpus, and that, understandably, they have gone unnoticed. Their hallmark would be the stress pattern when two or more syllables are suffixed:

#CVCVCV+CV+CV# compared to, say, *wagúja+ní:+ŋ(gu)*

especially when Final Dropping does not apply because of the absence of a penultimate long vowel. Conceivably, though, there are other reasons for ruling out such a root type.

On the other hand, this account does predict that there will be no odd-syllabled words (especially, roots) with final long vowel -- Vowel Lengthening can only cause length on the last even-numbered vowel of a word. This is at variance with Dixon's account, wherein: "There is no theoretical reason why we should not have an odd-syllabled root ending in a: or u: - Rule 4 [Illicit Length Elimination] would delete the length from absolute forms but it would occur before oblique cases (CVCVCV:gu, and so on). However, no root of this form has presented itself in the data collected." (GY,86)

At this stage it is appropriate to note a peculiarity in the paradigm of three-syllabled roots in /iy#, such as /guriliy/ given three pages ago. Just as there are no odd-syllabled long-vowel-final roots, this root does not surface as [gurili:]. Following the hypothetical pattern just discussed we would expect it to be:



Dixon reports [guri:li]. Presumably the optional but common rule of Stress Fronting (as described earlier) applies to allow the alternate [gú:ri:li], which differs only in the length of the second, unstressed, vowel from our expectation, and thus is phonetically very similar to it. Therefore I am tempted to suggest that the systematic phonetic representation of this word is indeed [gú:rili], and similarly for the other five roots like it. The alternative is to except it from the sub-clause of the foot-construction rule given two pages ago -- this ad hoc move would say that the root behaves completely regularly.

Turning to the general paradigmatic behavior of stems in /iy/, consider the fact that the /y/ usually does not surface, though there is good justification for it from the allomorphy of suffixes such as the ERG and COMIT and the blocking of Final Dropping. There is just one environment where a y does appear in this position, namely before the single vowel-initial morpheme in Yidiny. This is /#ala/ 'now', which has allomorph /#la/ following a vowel (GY,86-88,97) -- a rule



$v \rightarrow \emptyset / v(\#) \_$

could be allowed to apply quite generally in Yidiny, ordered after Final Dropping, though its effect would be evident, as far as I know, in this morpheme only.

The rule which deletes /y/ in the forms from /-iy#/ roots is simpler than the one Dixon requires (GY,79). Within this account, it has the form

$y \rightarrow \emptyset / i \_ ((\#)CX)\#\#,$

where X is any string containing no ##

(I use ## as the boundary of what Dixon terms the "grammatical word", and, congruent with his usage, # for the "phonological word". Some affixes are "non-cohering" and introduce a # -- see GY,88-98).

This rule of /y/-deletion is intrinsically ordered after the above vowel-deletion rule, and it is blocked before a vowel, so the observed forms

galbi:y#ala

guri:liy#ala

(GY,87)

are derived. In Dixon's account of such forms the long vowel in the likes of galbi: and galbi:y#ala arises from a merger of /i/ and /y/, and is necessary to feed his stress assignment rule. Hence, in his account, the y in galbi:y#ala is not the underlying /y/ of /galbiy/, but rather one from "a late rule that inserts the glide y between i: and a (sequences of two vowels are not permitted in Yidiny, even across word boundaries)." (GY,97) That such an ad hoc rule is not needed here is further evidence for the approach taken in this paper.

### Irregular verbal affixes

There are three common verbal derivational suffixes which can introduce vowel length and perturb the stress pattern of the word in which they occur -- they are /-ji-n/ 'antipassive', etc., /-da-n/ 'coming', and /-ri-n/ 'going'. The vowel length they introduce appears not to be through application of the Vowel Lengthening rule, for it can occur at more than one place in the same word given more than one irregular affix (or one affix removed from the regular application of Vowel Lengthening) as in:

/magi+ ri+nal+ da+ nyu+nda /  
climb up+ +COMIT+coming+DAT SUBORD  
[magi:riŋá:ldanyú:n]

(GY,93, cf. 224-5)

A solution through cyclic application of Vowel Lengthening etc. also appears unattainable because length appears in even-syllabled stems (from odd-syllabled roots), such as [wúnabá:jiŋ] from /wunaba+ji+ŋ/ 'hunt for+antipassive+PRES', when a suffix of zero or two syllables follows, but not otherwise. The essential data about one of these affixes is contained in this table:

	'hunt for'		'see'		
(a)	wúnabá:jin̩ /wunaba+ji+n̩/	(b)	wawá:jin̩ /wawa+ji+n̩/	PRESENT	
(c)	wunábají:ny /wunaba+ji+nyu/	(d)	wawá:jinyú /wawa+ji+nyu/	PAST	tense (GY,218)

Words typified by (b) and (c) have the regular pattern of stress and vowel length. So does (a) once we apply the necessary rule:

V → [+long] /  $\overset{s}{\text{---}}(C)+\text{AFFIX}$

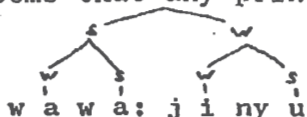
("lengthen a stressed vowel preceding one of these affixes").

(Stress is included in the structural description to block application to the root-final vowel in (c).)

The real irregularity of these affixes is exemplified by the six-syllable word on the previous page, and cases such as (d) in the table. If (d) were in no way irregular it would surface as \*[wáwajinyu]. To describe this a further clause may be added to the foot-level of the subordination rule, viz.

subordination rule - (a) (binary) feet are labelled  $\overset{s}{w}$ , except that they are all labelled  $\overset{w}{s}$  throughout a word in which an irregular affix begins any foot and no consecutive w w syllables result.

Another way of stating the exceptional case is that the feet are labelled according to L' if an irregular affix begins any foot and the word tree is not labelled  $\overset{w}{s}$  (i.e. word is not odd-syllabled). It seems that any principle must be cumbersome which will give



but not perturb (c) or other words from their regular patterns. Stress Fronting, as described earlier, will apply to the first foot of such words as (d) -- hence the example (GY,102) of [baRá:jiná] 'punch+antipassive+PURP' alternating with [báRa:jiná]. Possibly here the aberrant  $\overset{w}{s}$  labelling is assigned only to the foot containing the irregular affix.

There may well be other ways of incorporating these irregular affixes into a general account of Yidiny stress, perhaps through some complex allomorphy rule. The one Dixon considers (and rejects):

"-:ji-n following an even-syllabled stem,

-ji-n following an odd-syllabled stem " (GY,75)

is inadequate on two counts: it predicts [\*wúnabájin] for (a) above; and the suspect 'free colon' notation runs afoul of R-conjugation stems, which retain their marker as in [bajá:Rjinyú] 'follow-ji-PAST'. But to argue from the behavior of these affixes that in general "information concerning vowel length is not inferable from stress placement" (GY,73) is unwarranted.

### Further evidence

There are three minor areas of Yidiny phonology which build nicely on the general account of vowel-length and stress of this paper, and I shall consider them in turn.

(1) minor morphological alternations described as being based on syllabicity (GY,142) can more plausibly be viewed as conditioned by the local metrical environment.

(1.1) deletion of r and R before the ERG and LOC suffixes is obligatory at the coda of the DTE, and optional at the coda of other stressed syllables (more likely for r than R)

(1.2) deletion of stem-final y before the DATIVE suffix is blocked at the coda of the DTE, and similarly

(1.3) deletion of stem-final ny before ABLATIVE /mu/, or other simplifications of the ny+m cluster, are blocked after the DTE.

(2) sometimes the monosyllabic non-cohering affixes behave like cohering affixes (i.e. as if beginning with + instead of #). Dixon gives just two examples of this (GY,97):

/gada+nyu #di/	/gali+ŋal+nyu#ala/
come PAST, self	go COMIT PAST now
[gadá:ny#di]	[gáliŋálnyu#lá]
[gadá:nydi]	[galiŋalnyúla]

We are told that "ŋadí 'self' is the only word in Yidiny with stress on a non-initial syllable that does not involve a long vowel. It is related to the post-inflectional affix -di" (GY,380). But the lower right example above is another example. It is apparent that its alternate stress pattern is assigned late in the derivation, since Vowel Lengthening has not applied, (and if it had, so would have Final Dropping), and Final Dropping has applied, "internally", in [gadá:nydi]. We can account for such forms by rebuilding the metrical tree at the grammatical word level, i.e. within domains bounded by ## rather than by #. Dixon's approach, which bases stress assignment on the distribution of vowel length, would dictate an ad hoc vowel shortening rule, and a derivation via intermediate \*[galiŋalnyu:la].

(3) Stress Retraction is Dixon's term for the unusual pattern of the "handful of words" (GY,102) whose underlying forms conform to:

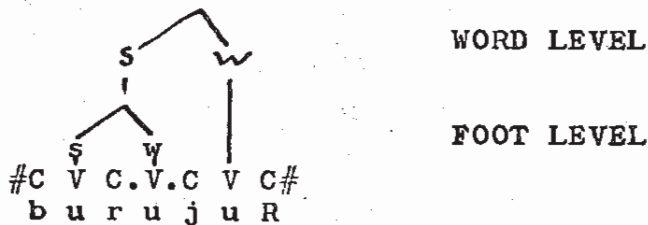
$$\#CV \begin{bmatrix} +\text{cons} \\ +\text{son} \\ -\text{nas} \end{bmatrix} V [-\text{son}] V [+son] \#$$

Now [+cons,+son,-nas] picks out the set {l,r,R} of consonants which only end syllables, not begin them, and [-son] segments can only begin syllables and never end them (as set out at the beginning of the paper). So these Stress Retraction words have the syllable structure #CVC.V.CVC#, at least at the stage of the construction of the metrical tree. It is only in such a word that a syllable consisting solely of a vowel can occur in Yidiny in a position to receive stress. Dixon's data show that it does not -- that such forms instead bear stress on the first and third syllable, e.g.

[bùrujú:R] [gùrabá:y] [gàrawá:y] [jàruwá:y]



It is natural in such cases to postulate that the foot construction rule once again assigns a (degenerate) foot to the heavy final syllable, rather than pair it with the extra-light penultimate, so that the resulting metrical tree would be:



wherein the DTE is the first syllable, and predicted form is [búrujuR]. Possibly the middle syllable is weaker than the last, so it might be perceived as [búrujuR] as I in fact do at its occurrence on Hale's field tape. Further indication that the primary stress is initial (rather than final) is in Dixon's hypothesis (GY,103) of historical developments linking the two dialects: [máluwáy] > [málwáy] 'spirit, shadow', and [gúrunga] > [gúrnga] 'kookaburra'. (Syllable breaks after the conventions of this paper, stress after Dixon).

Noting the syllable divisions involving homorganic nasal-stop clusters justified at the beginning of the paper, it is interesting also to observe the two other, intermediate, cases of "retraction" given by Dixon: [baRú:mbá•r] and [mirí:mbá•l]; which suggest that the unpacking of the abstract pre-nasalized stops can occur before the construction of the metrical tree -- but /gúrunga/ above shows that it need not.

Thus we begin to understand the phenomenon of "Stress Retraction" and do not have to derive its patterns via an unattested intermediate "regular" pattern in arbitrarily specified forms.

In all, the reinterpretation of the Yidiny data as given in this paper illustrates two counterposing forces. The universal hypotheses of metrical theory help us understand the stress and vowel alternations of this "out-of-the-way language", but at the same time its processes indicate refinements that are needed in that theory (pace GY,xvii). These include the ability of the branchingness of a foot (at least, the first) to radically affect the structure of the word tree, and the ways in which syllable structure can affect the structure at the foot level.

## Notes

1. My information comes mostly from R.M.W. Dixon's lectures on Yidiny (A.N.U., 1975) and his cited work. I am also grateful to him for giving me a copy of the tape recording of the three published Yidiny texts, and for discussion of the material of this paper. Ken Hale made available his two hours of Yidiny recordings and his transcriptions (made in 1960), and provided useful comments on them. For discussions of the metrical approach to problems of this nature I am indebted to David Duncan, Morris Halle, John McCarthy, Todd Sjoblom and Jean-Roger Vergnaud, none of whom necessarily agree with the details of this account.

2. In this and other respects /w/ patterns with the non-sonorant consonants and thus I take it to be [-sonorant] in Yidiny. /ŋ/ cannot occur root-finally; /y/ can end a syllable with vowel /i/ in underlying representations but not in surface forms.

3. It occurs in line 25 of Text 9 (GY,533), where furthermore I perceive the initial syllable as bearing a stronger stress than the other two stressed syllables, just as would be predicted for the DTE. In fact, I find that in general the first stress in a word without long vowels (which is thus the stress on the first syllable) is a stronger stress than other stresses in the word. However Dixon does not distinguish degrees of stress (with one exception, noted below), and at this stage nothing further appears to turn on the distinction, so I shall not pursue it.

4. The unique /waRa:buga/ 'white apple tree' could also be seen as having the same irregularity, but marked on a medial rather than a final vowel. That it "inflects exactly like a regular even-syllabled root (for instance *nunangara*)" (GY,86) would suggest that ternary feet are the largest that may begin at an underlying long vowel. However, one example is surely not enough. The best characterization of the vowels Dixon has as underlyingly long may well be that they have the property that they must begin a foot (including, if necessary, a degenerate one). The ternary feet *s w w* would then follow from a general process of "stray syllable adjunction", which attaches single otherwise unattached syllables to the foot to their left, after binary feet have been constructed wherever possible.

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NB Correction p. 115

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