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Morphophonemics of prosodic reduction in Tripura Bangla

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Abstract
Tripura Bangla (TB) constructs Trochees from left to right with lapse(s) resulting in ternary rhythm. The condition of word minimality is fulfilled at the syllabic level except in monosyllables where phonetic lengthening takes place at SR for mora epenthesis and the Trochee is bimoraic. To meet the demands of the disyllabic word minimum TB adopts a plethora of methods tagging in multiple morphological and phonological changes. And the net result is prosodic reduction or reduction of longer sequences in deference to the prosodic grammar. The present article traces the modus operandi of these processes at levels segmental, syllabic, foot, word, phrase and offers an OT account of them.

Keywords: morphophonemics, prosodic reduction, constraints, optimality theory, constraint hierarchy

1. Introduction

The ideal form of a word across languages is a disyllable. In languages where codas are moraic and vowel length is distinctive, a monosyllable of CVV or CVC type is counted as heavy having two moras. Such syllables are capable of constructing a foot by itself. Tripura Bangla (TB) primarily opts for syllabic Trochees and restricts construction of moraic Trochees only when a lone monosyllable forms a content word. In such cases the bimoraic need is fulfilled by phonetic lengthening of the vowel of the syllable since in TB coda is not moraic nor vowel length is distinctive. To ensure the emergence of both types of Trochees – largely syllabic and restrictively moraic -- various strategies are resorted to. Some of them are enumerated here.

a. CV/CVV/V/VV/VC → Mora insertion → (´μμ) → (´σ)
b. (i) Segment deletion, (ii) Metathesis, (ii) metathesis + deletion
c. Syllable deletion**: (**i) final, (ii) weak medial, (iii) medial syllable merger: (iv) multiple deletion, (v) coda deletion.
d. Foot deletion through (i) Syllable reduction; (ii) Two-word compounds reducing to one word.
e. Word Reduction through syllable deletion
f. Phrase reduction via syllable deletion, foot deletion and Maximal reduction

All these phonological processes are accounted for in terms of the constraints ranked in a hierarchy as proposed in Optimality Theory (OT). (McCarthy and Prince 1993, Prince and Smolensky 1993, McCarthy and Prince 1995, Kager 1999 etc.) [5, 8, 6, 3].
§2 presents the relevant set of data categorized under different subheads; §3 states the essential features of foot construction in TB. §4 offers the OT grammar of Prosodic Reduction at various levels: syllable, word, foot, segment. §5 deals with cases of no deletion. Conclusion in §6 winds up the discussion.

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2. Representative Data [1]

Sl. No.	SCB	TB	Gloss	Remarks
1. No deletion	kʰɔ.wai bi.d̪al d̪ɔr.kar	ko.wai bi.d̪al d̪ɔr.kar	‘Khowai’ ‘cunning’ ‘need’	No deletion: as the base is by default a disyllabic foot.
2. Deletion at segment level				
a. C deletion	ʃì.pa.hi	ʃì.ɸai	‘constable’	CV.CV.CV → CV.CV: (´σσ)σ → (´σσ) C deletion = syllables merged
b. V deletion	mo.ʃɔ.la	mɔʃ.la	‘spice’	CV.CV.CV → CV.CV: (´σσ)σ → (´σσ)
c. V, C deletion	a.loiʃ.ʃo	al.ʃì	‘idleness’	CV.CVC.CV → CV.CV: (´σσ)σ → (´σσ)
d. Metathesis	ko.li.Ja	koil.za	‘lever’	CV.CV.CV → CVC.CV: (´σσ)σ → (´σσ)
e. Metathesis, C deletion	na.ri.kɛl	nai.hɔl/nai.ɔl	‘coconut’	CV.CV.CVC → CV.CVC/VC: (´σσ)σ → (´σσ)
3. Deletion at syllable level,				At final positions: (´σ) (´σσ) → (´σσ)
a. Weak final syllable in Trochee deleted	bou.d̪i.d̪i	bo.d̪i	‘sister-in-law’	Weak syllable in Trochee: (´σ) (´σσ) → (´σσ)
b. Final syllable deletion	ʃɛ.li.ka	ʃa.li/ha.li	‘sister-in-law’	Unstressed, unfooted final syllable: (´σ) (´σσ) → (´σσ)
c. Medial syllable deletion	ʈʰa.kur.bʰai	ʈʰa.βai	‘elder brother’	Unstressed syllable in Trochee deleted (´σσ) (´σ) → (´σσ)
d. Weak syllable reduction and deletion → foot reduction	bɔ.ɽo # d̪a.d̪a	bɔd̪.d̪a	‘elder brother’	(CV.CV) # (CV.CV) → (CVC.CV) (´σσ) # (´σσ) → (´σσ) Two feet are squeezed into one.
e. Full/partial syllable deletion	mo.hɔn # pur	mun.ɸur	‘Mohanpur’	Weak syllable in first foot of compound. (´σσ) (`σ) → (´σσ)
fi. Syllable deletion through merger	Ji.ra.ni.ya	zi.rain.na	‘Jirania’	CV.CV.CV.CV → CV.CVC.CV: (´σσ)σσ → (´σσ)σ
fii. Same: derived words	dʰɔ.rɔ.ni.ya	dʰɔ.roin.na	holder/catcher’	
g. multiple deletion	ʈʰa.ku.ra.ni bou.ʈʰa.ku.ra.ni	ʈʰak.rain bo.ʈain	‘priest’s wife’ ‘elder sister-in-law’	Reduction: segment, syllable deletion σσσσσ → (´σσ); σσσσ → (´σσ)
h. Syllable reduction through coda deletion/ relocation	cɔm.pɔk # nɔ.gɔr	sɔm.ɸɔ # nɔ.gɔr	Champaknagar	CV(C).CVC → CVC.CV: HH → HL/LL (´σσ) → (´σσ) To ensure and ideal Trochee.
4. Foot deletion				
a. Syllable reduction → Foot deletion	bram.mɔn # ba.ɽi.ya	baun.bai.ra	‘Brahman baria’	Two-word compounds → single word CVC.CVC → CVC, CV.CV.CV → CV.CV (´σσ) (´σσ)σ → (´σσ)σ
b.	[mɔʈ] [cʰou.mu.ho.ni]	mɔs.sɔ.mu.ni	‘Math Choumuhoni’	(´σ) (´σσ)σσ → (´σσ)σσ
5. Word Reduction				Through syllable deletion
a.	[Jɔ.gɔ.ho.ri.] [mu.ra]	zɔ.goi.ra.mu.ra	‘Jagahari mura’	(´σσ)σσ (´σσ) → (´σσ)σ(`σσ)
b.	[gɔ.nɔ.raj] [cou.mu.ho.ni]	gɔn.ras.so.mu.ni	‘Ganaraj choumuhoni’	(´σσ)σ (´σσ)σσ → (´σσ)σ(`σσ)
6. Phrase reduction				Via syllable deletion: A+N → N via foot reduction:
a. Syllable deletion	[Jɛʃ.ʈʰo] [ʃa.li.ka]	zɛ.d̪a.li ~ zɛ.d̪aʃ	‘wife’s elder sister’	(´σσ) # (`σσ)σ → (´σ) (`σσ) → (´σσ)σ/ (´σσ)
b. Foot deletion	[kon] [bɛ.la] [rat̪.ri] [bɛ.la]	kom.ba.la rait̪.t̪a.la	‘which time’ ‘at night’	(´σ) # (`σσ) → (´σ) (`σσ) → (´σσ) σ (´σσ) (`σσ) → (´σσ) σ
c. Maximal reduction	e kʰan d̪i.ye	ɛn.d̪a	‘through this side’	σσσσ → (´σσ) (`σσ) → (´σσ)
	ʃe kʰan t̪ʰe.ke	hɛn.t̪e	‘from that place’	
	ke.mon ko.re	kɛm.bɛ	‘through what way’	

[1] Data are collected from native TB speakers including some of my students.

3. Foot in TB

TB constructs Trochees from left to right in all prosodic words. One syllable is left unparsed after every foot resulting in ternary rhythm (Das 2001) [1]. That means, successive feet are not constructed as that incurs foot clash. In three and six syllable words the right most syllable remains unfooted. In a five-syllable word a second foot is constructed aligned with right edge of the word. Primary stress is invariably placed on the left most syllable of the word. In course of foot construction, the morpheme boundaries are ignored – entire input sequence is treated as single prosodic word. There is no distinction in terms of quantity among syllables such as Heavy vs. Light.[2] That means, all syllables are Light in TB. There is no long vowel underlyingly; diphthongs function as monophthongs; coda consonant is never moraic.

With these pieces of information let us now embark on constructing an OT grammar for the TB words demonstrating prosody driven reduction of underlying inputs at various levels.

4. OT grammar of prosodic reduction

4.1 Syllable deletion

To capture the facts of TB metrics stated in (3.0) the following constraints need to be invoked. Their relevance for TB grammar is spelled out.

7. GrWd=PrWd

'Grammatical word must be a prosodic word.' (Kager 1999: 152) [3]

It is a truism that a grammatical word, i.e., a word in the lexicon, must qualify as a prosodic word to get incorporated into the metrics of the language concerned. In other words, all morphological inputs constituting a word should undergo syllabification, marked with stress, parsed in foot/feet and so on. This is one of the superordinate constraints in all languages and TB is no exception.

8. Foot Binarity (FT-BIN)

'Feet are binary under moraic or syllabic analysis.' (Kager 1999: 300) [3]

FT-BIN is a universal constraint. To make a foot at least two parametric interpretations are implied in a particular language. When stress is placed at the left edge within a foot it is called Trochee; when stress is placed at the right edge in a foot, it is called an iamb. As far as TB is concerned, foot binarity is realised as Trochee. So, this is also an undominated constraint in TB.

9. TROCHEE

'Within a foot, every '*' is followed by a '.'.' (Vijver 1998: 6)

In other words, in a Trochee a stressed syllable is followed by an unstressed one. This is also an undominated constraint in TB.

The next essential constraint in TB emphasises the need for incorporating every syllable in a foot (cf. 10).

10. PARSE-SYL

'Syllables are parsed by feet'. (Kager 1999:153) [3]

Parse syllable is a well formedness constraint that insists on routing a syllable through a foot to take part in the metrical process. In the TB Trochee system, two syllables are ideal to form a foot (a syllabic Trochee). However, there are monosyllabic words too which obviously runs counter to PARSE-SYL. In words of three and six syllables one syllable remains unparsed on the right edge. Similarly, in four and seven syllables two syllables are left stranded on the right edge of the word. In pentasyllables one upbeat or unparsed syllable stands unstressed and unfooted in between two Trochees yielding ternary rhythm. Thus, in many instances PARSE-SYL is violated. In the constraint ranking it is therefore bound to be ranked very low.

11. ALIGN-L (Hd-FT, Left, PrWd, Left) (LEFTMOST) [3]

'The head foot is leftmost in Prosodic word'.

This is an inviolable requirement of TB and hence this constraint is posited amongst the higher ranked constraints. In OT terms, this requirement translates into a word-to-foot alignment constraint referring to the left edge of the word.

12. *FTFT

'Feet must not be adjacent.' (Kager 1994) [2].

In the case of five syllables two feet are posited with a lapse or unfooted syllable in between them producing ternary effect. It ensures that there be a distance between the feet. TB metrics has a special requirement for this.

13. ALL-FT-L

Align (Ft, L, PrWd, L) 'Feet are initial in PrWd.' (Kager 1999: 300) [3]

In other words, every foot stands at the left edge of the PrWd. In a language, such as TB, left alignment or ALIGN-L is strong. So, head foot is posited at the left edge of the prosodic word. Additionally, other feet also tend to be left aligned ideally. But this is not possible: other than the head foot all feet must occupy a place away from the left edge and all such feet violate ALL-FT-L. The degree of violation is counted on the basis of number of syllables by which a foot stands away from the left edge of the word. ALL-FT-L therefore, is a gradient constraint.

14. MAX-IO

'Input segments must have output correspondents. (No deletion) (Kager 1999: 67) [3].

MAX-IO requires that for every output segment there will be some input segments. No deletion of underlying segment is allowed. So, MAX-IO should be ideally an undominated constraint. But this is often lowered in ranking since deletion is a common process for achieving maximum unmarkedness as we shall notice shortly in case of TB.

15. DEP-IO

'Output segments must have input correspondents.' (No epenthesis) (Kager 1999: 68) [3].

[2] In this regard, it has to be stated that Das (2001) found the presence of Heavy syllables in TB. However, in my study – based on perception and native speakers' judgement no presence of any Heavy syllables was noted.

[3] This constraint is partially modified from the one proposed by Kager (1999: 111) *viz.* Align-L: The left edge of the Grammatical Word coincides with the left edge of the PrWd. This is because in TB the head foot is obligatorily aligned with the left edge of the word.

No extra segments can be inserted in the output. Where insertion is a regular phenomenon the position of this constraint in the constraint ranking is very low. If the input is V and the correspondent output is CV, the output candidate violates DEP-IO because of the insertion of segment C. Account of TB prosodic restructuring has a strong need for this.

16. LINEARITY-IO

'The output reflects the precedence structure of the input, and vice versa' (Kager 1999: 63) [3].

For example, if input is CV.CV and output is CVVC, linearity breaks down: V crosses over to the left of preceding C in the second syllable. This is a correspondence constraint.

17. IDENT-IO (place)

'The specification for place of articulation of an input segment must be preserved in its output correspondent.' (Kager 1999: 45) [3].

The idea was first introduced by Prince and Smolensky (1993) [8] on the basis of Paradis and Prunet (1991).

Example: a. /p/ (Input) b. /t/ (Input)
| |
[b] (Output) [d] (Output)

18. IDENT -IO (voice)

'The value of the feature [voice] of an input segment must be preserved in its output correspondent.' This is a faithfulness constraint. (Kager 1999: 40) [3].

Example:

a. /bed/ → [bed] (satisfies IDENT-IO (voice))

b. /bed/ → [bet]/[ped]/[pet] (violate IDENT-IO(voice)).

19. IDENT -IO (-back)[4]

The specification for the feature [-back] of an input segment must be preserved in its output correspondent. (Kager 1999: 128) [3]

For example: ʃa.li.ka → ʃi.la.ki

Input and output do not match in [-back] value of vowels and hence cannot win the race.

20. IDENT-IO (vowel-length or Ident-IO(v-length)

'Vowel length in the input must correspond to vowel length in the output.'

(Kathryn H. Franich: 2014)

The specification for the feature length of an input vowel must be preserved in its output correspondent. Example: bit → bi:t, are not allowed because an underlying short vowel surfaces as long in the output or vice versa.

21. IDENT -IO (-cont)

The specification for the feature [-cont] of an input segment must be preserved in its output correspondent. In other words, if a consonant is plosive [-cont] in the input, the output should preserve it as plosive. Fricativization converting [-cont] to [+cont] is not accepted.

Example: k → x, p → ϕ violate (21).

22. IDENT -IO (spr.gl)

The specification for the feature [± spread glottis] of an input segment must be preserved in its output correspondent. Unaspirated consonants are [-spr.gl] while aspirated ones are [+spr.gl]. k → k^h or vice versa are ungrammatical since they go against IDENT-IO(spr.gl).

GrWd=PrWd, FT-BIN, TROCHEE, ALIGN-L, *FTFT are undominated in TB. Since certain syllables fail to survive in the optimal output, PARSE-σ must remain dominated by these constraints. So is ALL-FT-L because in words of more than one foot other than the head foot all will incur violations in respect of this. This must be dominated by PARSE-σ as TB prefers parsing all syllables by foot rather than aligning all feet on the left edge of the word. However, they may remain unranked with respect to each other too. Let us go ahead with the former. MAX-IO is ranked even lower because its demands for no deletion is frequently overridden by the TB processes of prosodic reduction. IDNET-IO (voice) and IDENT-IO (spr.gl), being faithfulness constraints, insist on retaining the featural identity of the input segments. But often they fail to do so like others of their group *viz.* Ident-IO (v-length), IDENT-IO (-cont) IDENT-IO (-back). Hence all are ranked very low and are mutually unranked.

The anti-insertion constraint DEP-IO is also disobeyed by an optimal output which wins the race despite incorporating new segments not found in their corresponding input. Its subordinate status is therefore justified. Again, the lone anti-metathesis constraint LINEARITY-IO fighting for retention of input sequence of segments is also ranked low because of victory of many candidates with transposed segments.

We begin with relevant constraints in hierarchy. New ones will be introduced as and when necessary. The first constraint hierarchy is projected for a TB word with five underlying syllables getting reduced to two syllables.

23. [[GrWd=PrWd, FT-BIN, TROCHEE,]] ALIGN-L, *FTFT >> PARSE-σ >> ALL-FT-L >> MAX-IO >> IDNET-IO(voice), IDENT-IO(spr.gl), [[IDENT-IO(v-length), IDENT-IO(-cont), IDENT-IO(-back)]], DEP-IO, LINEARITY-IO

24. [zɛʃ.ʈʰo] [ʃa.li.ka] → zɛ.ɖaʃ →
(´σσ) # (`σσ)σ → (´σ) (`σσ) → (´σσ)

[4] This is based on IDENT-IO (back) in Kager (1999: 128). [-back] value of the feature is relevant and hence specifically stated in the constraint.

zɛʃ.ʈʰo ʃa.li.ka	ALIGN-L	*FTFT	PARSE-σ	All-FT-L	MAX-IO	IDENT-IO(voice)	IDENT -IO (spr.gl)	DEP-IO	LINEARITY-IO
a. (z´ɛ.ɖa).li			*!		*****	*	*		
b. (z´ɛʃ.ʈʰo)(ʃa.li).ka		*!	*	**					
c. zɛʃ.(ʈʰ´o.ʃa).(l`i.ka)	*!	*	*	* ***					
d. (z´ɛʃ.ʈʰo).ʃa.(l`i.ka)			*!	***					
e. (z´ɛ.ɖo)ʃa.li.ka			*!**		*	*	*		
f. ☞ (z´ɛ.ɖaʃ)					******	*	*		**

Since GrWd=PrWd, FT-BIN, TROCHEE are most powerful and remain undominated they have been kept out the tableau because of space crunch. So are IDENT-IO (v-length), IDENT-IO (-cont) IDENT-IO (-back). To acknowledge the presence of these constraints in the overall constraint hierarchy they have been kept within double square brackets in (23).

Input morpheme sequence of five syllables spanning over two words in Sadhu Bangla are reduced to two syllables forming a single word of disyllabic Trochee. The projected OT grammar upholds (24g) as the optimal candidate. By contrast, (24a) with three syllables scores better on the count of faithfulness requirements but is ruled out by the fatal violation incurred in respect of PARSE-σ. MAX-IO is violated five times because of deletion of five input segments: /ʃ, o, ʃ, k, a/. IDNET-IO (voice) is violated once as ʈʰ → ɖ; loss of aspiration in ʈʰ → ɖ incurs violation of IDENT-IO (spr.gl). The most faithful (24b) fails to win the competition because of its construction of consecutive feet in fatal violation of well formedness constraint *FTFT. Compared to (24g) it also violates PARSE-σ once since one syllable of the input goes unparsed. ALL-FT-L is defied twice as the second foot is distanced from the left edge of the word by two syllables. (24c) retains the input melody but fails by skipping over one syllable on the left edge of the word in fatal violation of undominated constraint ALIGN-L. Additional violations incurred by it stand immaterial once fatal violation rules out the candidate. Violated PARSE-σ negatively judges (24d) and (24e).

4.2 Word reduction

The constraint hierarchy in (23) repeated in (25) also accounts for morpho-phonological operations resulting in word reduction in (26) and (28).

25. [[GrWd=PrWd, FT-BIN, TROCHEE,]] ALIGN-L, *FTFT >> PARSE-σ >> ALL-FT-L >> MAX-IO >> [[IDNET-IO(voice), IDENT-IO(spr.gl)]] DEP-IO, LINEARITY-IO

[zɔ.gɔ.ho.ri.] [mu.ra] → (´zɔ.goi).ra.(`mu.ra)
(´σσ)σσ (´σσ) → (´σσ)σ(`σσ)

zɔ.gɔ.ho.ri. mu.ra	ALIGN-L	*FTFT	PARSE-σ	ALL-FT-L	MAX-IO	DEP-IO	LINEARITY-IO
a. ☞ (´zɔ.goi).ra.(`mu.ra)			*	***	**	*	*
b. (´zɔ.gɔ).(h`o.ri).(`mu.ra)		*!*		** ****			
c. zɔ.(g´ɔ.ho).ri.(`mu.ra)	*!		**	* ****			
d. (´zɔ.gɔ).ho.ri.(`mu.ra)			**!	****			
e. (´zɔ.goi).ra.mu.ra			**!*		**	*	*
f. (´zɔ.gɔ).ho.(r`i.mu).ra			**!	***			

IDNET-IO (voice), IDENT-IO (spr.gl) are suppressed in (26) because of their overt 'irrelevance' to the computation here. However, they are covertly present in the overall hierarchy. Such constraints are kept in double square brackets for clarity.

Two words in the input have been restructured as a single prosodic unit and subsequently re-syllabified and metrified. The net result is reduction of the input by one syllable yielding (26a) as the most harmonic or optimal candidate. (26b) loses the battle because of violation (twice) of anti-successive foot construction constraint *FTFT. One violation of this undominated constraint is fatal! The second foot from the left standing two syllables inside incurs two violation marks and the third syllable incurs four violations on the same count. Satisfaction of lower constraints fails to redeem the situation. Violation of ALIGN-L by (26c) throws the candidate out of the race. (26d) defies PARSE-σ twice contrary to once by the optimal candidate (26a) and hence loses out. (26e) and (26f) are also adjudged negatively on the same ground. Violation of lower constraints adds up the negative markings. Satisfaction of the other constraints cannot reverse the verdict.

The optimal output for an input of seven syllabic word is a pentasyllable: prosodic reduction of two syllables. The OT grammar of ranked constraints successfully factors out the attested TB word from the multiple contenders. This time IDNET-IO (voice) has to surface in the constraint hierarchy and the reason thereof will become obvious shortly.

27. [[GrWd=PrWd, FT-BIN, Trochee]] ALIGN-L, *FTFT >> PARSE-σ >> ALL-FT-L >> MAX-IO >> IDNET-IO(voice), [[IDENT-IO(spr.gl)]], DEP-IO, LINEARITY-IO

gɔ.nɔ.raz so.mu.ho.ni → gɔn.ras.so.mu.ni
(´σσ)σ (´σσ)σσ → (´σσ)σ(`σσ)

gɔ.nɔ.raz so.mu.ho.ni	ALIGN-L	*FTFT	PARSE-σ	All-FT-L	MAX-IO	. IDENT -IO (Voice)	DEP-IO	LINEARITY-IO
a. ☞ (g´ɔn.ras).so.(m`u.ni)			*	***	***	*		
b. (g´ɔ.nɔ).(r`az.so).(m`u.ho).ni		*!*	*	** ****				
c. gɔ.(n´ɔ.raz).so.(m´u.ho).ni	*!		***	* ****				
d. (g´ɔ.nɔ).raz.so.mu.(h`o.ni)			**!*	*****				
e. (g´ɔ.nɔ).raz.so.mu.ho.ni			**!***					
f. (g´ɔ.nɔ).(ra`z.so).mu.(h`o.ni)		*!	*	** *****				

In (28) (a) is the optimal output with five syllables metrified into two Trochees dispersed by one upbeat in the middle producing ternary rhythm. It successfully passes the test posed by the two undominated constraints. Violations of lower ranked constraints cannot have any negative effect in comparison to other contestants. (b) Incurs fatal violation(s) in respect of *FTFT militating against successive footing. Outcome of the contest in respect of other constraints is immaterial for the final verdict. (c) is debarred by its violation of undominated ALIGN-L. (d-e) incur multiple violations in respect of PARSE-σ while, compared to the optimal candidate (a), only two violations are enough to ensure defeat. (f) Demonstrates foot clash though once, and hence is evaluated ungrammatical by *FTFT.

4.3 Foot Deletion

The constraints and their ranking developed so far with the achievement of the desired results needs to include the correspondence constraint IDENT-IO (place) (cf. 17) and present it overtly in the evaluation process. Inactive constraints are put in brackets in ranking and suppressed in the tableau. The ranking is therefore as in (29).

29. [[GrWd=PrWd, FT-BIN, TROCHEE,]] ALIGN-L, *FTFT >> PARSE-σ >> ALL-FT-L >> MAX-IO >> IDNET-IO(voice), IDENT-IO(place) [[IDENT-IO (spr.gl), IDENT-IO(v-length), IDENT-IO(-cont), IDENT-IO (-back), DEP-IO, LINEARITY-IO]]

30. kon bɛ.la → kom.ba.la (´σ) # (`σσ) → (´σ) (`σσ) → (´σσ) σ

kon bɛ.la	ALIGN-L	*FTFT	PARSE-σ	All-FT-L	MAX-IO	IDENT-IO (voice)	IDENT-IO (place)
a.☞ (k´om.ba).la			*				*
b. (k´on) (b`ɛ.la)		*!		*			
c. kon (b´ɛ.la)	*!		*	*			

An input of two feet is reduced into a single foot though retaining the same number of syllables – three. Consonant place assimilation takes place (n →m/ __b); word boundary is obliterated; and the sequence of three syllables is remetrified as a single prosodic unit: (´σ) # (`σσ) → (´σ) (`σσ) → (´σσ)σ. OT grammar under construction proves its mettle in evaluating the attested TB word i.e., (30a). The third syllable from the left has to remain unfooted at the cost of one violation of PARSE-σ. Place assimilation between coronal and labial consonants (n → m/__b) is at the expense of IDENT-IO (place). Despite this (a) incurs least quantum of violation compared to the remaining contestants. (b) Constructs two successive feet and hence is ruled out by the anti-foot-clash constraint *FTFT.

For the next word rat̪.ri bɛ.la → rait̪.t̪a.la 'at night' IDENT-IO (-back) and LINEARITY-IO have to figure in the ranking and tableau as they are actively involved in the evaluation process. The constraints and their ranking are unchanged (cf. 31 & 32).

31. [[GrWd=PrWd, FT-BIN, TROCHEE,]] ALIGN-L, *FTFT >> PARSE-σ >> ALL-FT-L >> MAX-IO >> IDNET-IO(voice), IDENT-IO(-back), IDENT-IO (place) [[IDENT-IO(spr.gl), IDENT-IO(v-length), IDENT-IO(-cont), DEP-IO]] LINEARITY-IO

32. rat̪.ri bɛ.la → rait̪.t̪a.la
(´σσ) # (`σσ) → (´σσ)(`σσ) → (´σσ)σ

rat̪.ri bɛ.la	ALIGN-L	*FTFT	PARSE-σ	All-FT-L	MAX-IO	IDENT-IO(voice)	IDENT-IO (-back)	IDENT-IO(place)	LINEARITY-IO
a.☞ (r´ait̪.t̪a).la			*		*	*	*	*	*
b. (r´at̪.ri)(b`ɛ.la)		*!		**					
c. rat̪.(r´i.bɛ).la	*!		**	*					
d. rat̪.ri.(b´ɛ.la)	*!*		**						

A two-feet (two word) input reduces to a trisyllable (cf. 32a) with one Trochee constructed aligned left. (32a) satisfies the two undominated constraints ALIGN-L and *FTFT. Violation of lower ranked constraints have no crucial role in the evaluation process. One syllable is left unfooted violating PARSE-σ; one input consonant /r/ is deleted violating MAX-IO; b → t̪ incurring violations of IDNET-IO(voice) and IDENT-IO(place); ɛ → a in violation of IDENT-IO(-back); and /i/ is metathesised into the preceding syllable violating LINEARITY-IO. The most faithful output (32b) fatally goes against *FTFT and hence is defeated. (32c-d) are ruled out because of fatal violations of the high ranked alignment constraint ALIGN-L. Other violations, as usual, do not affect the ultimate judgement.

4.4 Maximal reduction

TB has instances of reduction of the input containing more than one word yielding only one word. In course of this restructuring multiple reductions take place affecting segments, syllables, words, phrases. Here we look at one such instance: eɪ kʰan d̪i.ya→ ɛn.d̪a 'through this way'. The same constraint ranking so far applied turns out to hold good even for such instances of prosodic reduction.

33. [[GrWd=PrWd, FT-BIN, TROCHEE,]] ALIGN-L, *FTFT >> PARSE-σ >> ALL-FT-L >> MAX-IO >> [[IDNET-IO (voice), IDENT-IO (-back), IDENT-IO (place), IDENT-IO (spr.gl)]], IDENT-IO(v-length), [[IDENT-IO(-cont), DEP-IO]] LINEARITY-IO

34. eɪ kʰan d̪i.ya → ɛn.d̪a σ # σ # σσ → (´σσ) (`σσ) → (´σσ)

eɪ kʰan d̪i.ya	ALIGN-L	*FTFT	PARSE-σ	All-FT-L	MAX-IO	IDENT-IO (v-length)	LINEARITY-IO
a. ☞ (´ɛn.d̪a)					*****	*	*
b. (´eɪ.kʰan)(d̪`i.ya)		*!		**			
c. eɪ.(kʰ´an.d̪i).ya	*!		**	*			
d. eɪ.kʰan.(d̪´i.ya)	*!*		**				

The optimal candidate (a) in (34) satisfies all high ranked constraints; incurs five violation marks in respect of anti-deletion constraint MAX-IO for deleting /ɪ, kʰ, a, y, a/; eɪ → ɛ leaving one violation mark in respect of IDENT-IO(v-length); final /a/ is relocated into the preceding syllable causing its metathesis. (b) Constructs two successive feet and violates *FTFT fatally and is consequently ruled out. (c-d) fatally violate ALIGN-L and hence are rejected. Rest of the violation of these constraints is self-explanatory.

35. [[GrWd=PrWd, FT-BIN, TROCHEE,]] ALIGN-L, *FTFT >> PARSE-σ >> ALL-FT-L >> MAX-IO >> [[IDNET-IO(voice),]] IDENT-IO(-back), IDENT-IO (place), IDENT-IO(spr.gl), IDENT-IO(v-length), [[IDENT-IO(-cont), DEP-IO, LINEARITY-IO]]

36. ʃeɪ kʰan t̪ʰa.kɪ.ya→ hɛn.t̪e
σσ σσσ → (´σσ) (`σσ)σ→ (´σσ)

ʃeɪ kʰan t̪ʰa.kɪ.ya	ALIGN-L	*FTFT	PARSE-σ	All-FT-L	MAX-IO	IDENT-IO (-back)	IDENT-IO (spr.gl)	IDENT-IO (v-length)
a.☞ (h´ɛn.t̪e)					******	*	*	*
b. (ʃ˜eɪ.kʰan)(t̪ʰ`a.kɪ).ya		*!	*	**				
c. ʃeɪ.(kʰ´an.t̪ʰa).(k`ɪ.ya)	*!	*	*	* ***				
d. ʃeɪ.kʰan.(t̪ʰ´a.kɪ).ya	*!*		***	**				
e. (ʃ˜eɪ.kʰan).t̪ʰa.(k`ɪ.ya)			*!	***				
f.(ʃ˜eɪ.kʰan).(t̪ʰ`a.kɪ).ya		*!	*					

In this case an input of five syllables divided into three words are contracted into a disyllabic Trochee i.e., word: ʃeɪ # kʰan # t̪ʰa.kɪ.ya → hɛn.t̪e σσ σσσ → (´σσ) (`σσ)σ → (´σσ). Demonstrating this input–output mapping through parallel evaluation of output candidates this same constraint ranking as before succeeds in yielding the exact output attested in TB. The winning candidate (36a) passes the test put forth by the four high ranked constraints. It incurs five violations in respect of MAX-IO since five input segments are deleted in the output: /kʰ, a, a, k, ɪ, y/. This output also violates IDENT-IO(-back) once in transforming /a/ to /e/; in replacing /t̪ʰ/ to /t̪/ aspiration is lost incurring one violation mark in respect of IDENT-IO(spr.gl). Similarly, reduction of /eɪ/ to /ɛ/ costs a violation of IDENT-IO(v-length). (b) and (f) fail in the fray primarily because of violating the high ranked constraint *FTFT. (c) and (d) fatally violate ALIGN-L and so disqualify. (e) Constructs two feet separated by an unfooted syllable but in comparison to (a) it has one crucial violation mark with on the count of PARSE-σ. Remaining violation marks incurred by all these constraints (36b-f) are self-explanatory.

37. [[GrWd=PrWd, FT-BIN, Trochee,]] ALIGN-L, *FTFT >> PARSE-σ >> ALL-FT-L >> MAX-IO >> IDNET-IO(voice), [[IDENT-IO(-back)]], IDENT-IO(place), [[IDENT-IO(spr.gl),]] IDENT-IO(v-length), [[IDENT-IO(-cont), DEP-IO]] LINEARITY-IO

38. kɛ.mɔn ko.rɪ.ya → kɛm.bɛ
σσ # σσσ → (´σσ) (`σσ) σ → (´σσ)

kɛ.mɔn ko.rɪ.ya	ALIGN-L	*FTFT	PARSE-σ	All-FT-L	MAX-IO	IDENT-IO(voice)	IDENT-IO(place)	IDENT-IO (v-length)	LINEARITY-IO
a.☞ (k´ɛm.bɛ)					*** ***	*	*	*	
b.(k´ɛ.mɔn).(k`o.rɪ).ya		*!	*	**					
c. kɛ.(m´ɔn.ko).(r`ɪ.ya)	*!	*	*	* ***					
d. kɛ.mɔn.(k´o.rɪ).ya	*!*		***	**					
e. (k´ɛ.mɔn).ko.(r`ɪ.ya)			*!	***					
f. (k´ɛ.mɔn).(k`oɪ.ra)		*!		**	*				*

The self-same story continues in the case of emergence of the word /kɛm.bɛ/ from /kɛ.mɔn ko.rɪ.ya/ 'how' where two input words get contracted into one disyllable: σσ # σσσ → (´σσ)(`σσ)σ→ (´σσ). Optimal candidate (38a) wins with respect all the high-ranking constraints. Its six violations of MAX-IO for six input segments /ɔ, n, o, r, ɪ, y/ absent in the optimal candidate cannot affect its fate negatively. Again, k → b/__m is in violation of IDNET-IO (voice) and IDENT-IO (place). /-ɪya/ → /ɛ/ is a case of reduction of length and hence goes against IDENT-IO (v-length). (b) and (f) incur *FTFT violation and hence are ruled out. ALIGN-L gives adverse verdict against (c) and (d) as the concerned candidates leave one and two syllables unfooted at the left edge of the word. The unparsed third syllable in (e) goes against PARSE-σ and so the candidate is rejected. Other violations in respect of other constraints do not play any decisive role in the evaluation process.

4.5 Foot deletion

An entire foot in the input (often forming a separate word) is deleted in the surface form i.e., optimal output. Reduction of such bigger chunks is also due to the need for obeying the demands of prosodic grammar asking for disyllabic prosodic words. Additional syllables are unfooted and unstressed. We

now deal with two such instances in TB. They are representative of the phenomenon operative in large number of words.

With regard to the OT grammar under preparation here, it is noted that it can perfectly evaluate the exact output form prevalent in TB. As per our practice, the inactive but covertly present constraints do not figure in the hierarchy and the corresponding tableaus.

39. [[GrWd=PrWd, FT-BIN, TROCHEE,]] ALIGN-L, *FTFT >> PARSE-σ >> ALL-FT-L >> MAX-IO >> [[IDNET-IO(voice), IDENT-IO(-back)]], IDENT-IO(place), [[IDENT-IO(spr.gl),]] IDENT-IO(v-length), [[IDENT-IO(-cont), DEP-IO]] LINEARITY-IO

40. bram.mən # ba.ɽi.ya → baun.bai.ra
(´σσ) (´σσ)σ→ (´σσ)σ

bram.mən ba.ɽi.ya	ALIGN-L	*FTFT	PARSE-σ	All-FT-L	MAX-IO	IDENT-IO(place)	IDENT-IO(v-length)	LINEARITY-IO
a.☞ (bˊaun.bai).ra			*		******	*	*	*
b.(brˊam.mən).(b`a.ri).ya		*!	*	**				
c. bram.(mˊɔn.ba).(r`i.ya)	*!	*	*	***		*	*	
d. bram.mən.(bˊa.ri).ya	*!*		***	**		*		
e. (brˊam.mən).ba.(r`i.ya)			*	*!**		*		
f. (brˊam.mən).(b`ai.ra)		*!		**	*	*	*	*

Two feet (words) constitute a single prosodic unit in TB and the latter is re-syllabified and metrified with deletion of certain syllables partly or wholly. The result is the reduction of the output by one foot. (40a) is the optimal choice despite one violation of PARSE-σ (the last syllable is unfooted), six violations of MAX-IO (deleted segments are /r, m, m, ɔ, i, y/), one violation of IDENT-IO (place) (post-alveolar /ɽ/ → alveolar /r/), one of IDENT-IO (v-length) (a → au), and one of LINEARITY-IO (ba.ɽi → bai.ra). (b) and (f) earn fatal violation in respect of *FTFT in addition to other violations. (c) and (d) get ruled out by virtue incurring violation marks with respect to ALIGN-L along with other violations of other constraints. (e) Constructs the second foot three syllables away from the left edge of the word at the cost of ALL-FT-L. This is a fatal violation.

The same OT grammar also generates the correct output in the respect of an underlying five syllable input constituting two feet. The output gets reduced to four syllables and has only one foot: mɔʈ sou.mu.ho.ni → mɔs.sɔ.mu.ni (´σ) (´σσ)σσ→ (´σσ)σσ (cf. 41-42).

41. [[GrWd=PrWd, FT-BIN, Trochee,]] ALIGN-L, *FTFT >> PARSE-σ >> ALL-FT-L >> MAX-IO >> [[IDNET-IO(voice), IDENT-IO(-back)]], IDENT-IO (place), [[IDENT-IO(spr.gl),]] IDENT-IO(v-length), [[IDENT-IO(-cont), DEP-IO, LINEARITY-IO]]

42. mɔʈ sou.mu.ho.ni → mɔs.sɔ.mu.ni
(´σ) (´σσ)σσ→ (´σσ)σσ

mɔʈ sou.mu.ho.ni	ALIGN-L	*FTFT	PARSE-σ	All-FT-L	MAX-IO	IDENT-IO (place)	IDENT-IO(v-length)
a.☞ (mˊɔs.sɔ).mu.ni			**		**	*	*
b.(mˊɔʈ.sou).(m`u.ho).ni		*!	*	**			
c. mɔʈ.(sˊou.mu).(h`o.ni)	*!	*	*	* ***			
d. mɔʈ.sou.(mˊu.ho).ni	*!*		***	**			
e. (mˊɔʈ.sou).mu.(h`o.ni)			*!	***			
f. (mˊɔs.sou).(m`u.ni)		*!		**	**	*	

4.6 Deletion at syllable level

Let us now look at some instances of deletion at syllable level (cf. 43-50). Once again, we deploy the same OT mechanism of judging the optimal outputs with relevant constraints ranked in a language specific hierarchy. The grammar being proposed so far once again yields the desired results.

43. [[GrWd=PrWd, FT-BIN, Trochee,]] ALIGN-L, *FTFT >> PARSE-σ >> ALL-FT-L >> MAX-IO >> [[IDNET-IO(voice), IDENT-IO (-back), IDENT-IO(place), IDENT-IO(spr.gl),]] IDENT-IO(v-length), [[IDENT-IO(-cont), DEP-IO, LINEARITY-IO]]

44. bou.d̪i.d̪i → bo.d̪i (´σ) (´σσ)→ (´σσ)

bou.d̪i.d̪i	ALIGN-L	*FTFT	PARSE-σ	All-FT-L	MAX-IO	IDENT-IO(v-length)
a.☞ (bˊo.d̪i)					*	*
b. (bˊou.d̪i).d̪i			*!			
c. bou.(d̪ˊi.d̪i)	*!		*	*		

45. [[GrWd=PrWd, FT-BIN, TROCHEE,]] ALIGN-L, *FTFT >> PARSE-σ >> ALL-FT-L >> MAX-IO >> [[IDNET-IO(voice)]] IDENT-IO(-back), IDENT-IO(place), [[IDENT-IO(spr.gl),]] [[IDENT-IO(v-length), [[IDENT-IO(-cont), DEP-IO, LINEARITY-IO]]

46. ʃa.li.ka → ʃa.li σσ**σ**→ (´σσ)σ

ʃa.li.ka	ALIGN-L	*FTFT	PARSE-σ	All-FT-L	MAX-IO	IDENT-IO (-back)	IDENT-IO(place)
a.☞ (ʃ˜a.li)					**	*	
b. (hˊa.li)					**	*	*!
c. (ʃ˜a.li).ka			*!		**		
d. ʃa(lˊi.ka)	*!		*	*			

47. [[GrWd=PrWd, FT-BIN, Trochee,]] ALIGN-L, *FTFT >> PARSE-σ >> ALL-FT-L >> MAX-IO >> [[IDNET-IO(voice), IDENT-IO(-back), IDENT-IO(place),]] IDENT-IO(spr.gl), [[IDENT-IO(v-length), IDENT-IO(-cont)]], DEP-IO, [[LINEARITY-IO]]

48. ʈʰa.kur.bʰai → ʈʰa.βai (´σσ) (´σ) → (´σσ)

ʈʰa.kur.bʰai	ALIGN-L	*FTFT	PARSE-σ	All-FT-L	MAX-IO	IDENT-IO (spr.gl)	DEP-IO
a.☞ (ʈʰʳa.βai)					*** *	*	*
b. (ʈʰʳa.kur).bʰai			*!				
c. ʈʰa.(k´ur.bʰai)	*!		*	*			

49. [[GrWd=PrWd, FT-BIN, Trochee,]] ALIGN-L, *FTFT >> PARSE-σ >> ALL-FT-L >> MAX-IO >> [[IDNET-IO(voice), Ident-IO(-back), IDENT-IO(place), IDENT-IO(spr.gl), IDENT-IO(v-length), IDENT-IO(-cont), DEP-IO, LINEARITY-IO]]

50. bɔ.ro d̪a.d̪a → bɔd̪.d̪a (´σσ) # (´σσ) → (´σσ)

bɔ.rɔ.d̪a.d̪a	ALIGN--L	*FTFT	PARSE-σ	All-FT-L	MAX-IO
a.☞ (b´ɔd̪.d̪a)					***
b.(b´ɔ.rɔ)(d̪`a.d̪a)		*!		**	
c. bɔ.(r´ɔ.d̪a).d̪a	*!		**	*	
d. bɔ.rɔ.(d̪´a.d̪a)	*!*		**	**	

Prosodic reduction is accomplished by syllable merger in (52), metathesis and deletion (53, 54) by the same OT mechanism.

51. [[GrWd=PrWd, FT-BIN, Trochee,]] ALIGN-L, *FTFT >> PARSE-σ >> [[ALL-FT-L]] >> MAX-IO >> [[IDNET-IO(voice), IDENT-IO(-back), IDENT-IO(place), IDENT-IO(spr.gl)]], IDENT-IO (v-length), [[IDENT-IO(-cont), DEP-IO, LINEARITY-IO]]

52. mo.hɔn ɸur → mun.ɸur (´σσ) # (`σ) → (´σσ)

mo.hɔn ɸur	ALIGN-L	*FTFT	PARSE-σ	MAX-IO	IDENT-IO (v-length)
a.☞ (m´un.ɸur)				*	*
b. mo.(h´ɔn.ɸur)			*!		
c. (m´o.hɔn).ɸur			*!		

53. [[GrWd=PrWd, FT-BIN, Trochee,]] ALIGN-L, *FTFT >> PARSE-σ >> ALL-FT-L >>MAX-IO >> [[IDNET-IO(voice), IDENT-IO(-back), IDENT-IO(place), IDENT-IO(spr.gl)]], IDENT-IO(v-length), [[IDENT-IO(-cont),]] DEP-IO, LINEARITY-IO

54. zi.ra.ni.ya→zi.rain.na (´σσ)σσ → (´σσ)σ

zi.ra.ni.ya	Align-L	*FTFT	PARSE-σ	All-FT-L	MAX-IO	IDENT-IO (v-length)	DEP-IO	LINEARITY-IO
a.☞ (z´i.rain).na			*		*	*	*	*
b. (z´i.ra).(n`i.ya)		*!		**				
c. zi.(r´a.ni).ya	*!		**	*				
d. zi.ra.(n´i.ya)	*!*		**	**				

55. [[GrWd=PrWd, FT-BIN, Trochee,]] ALIGN-L, *FTFT >> PARSE-σ >> ALL-FT-L >>MAX-IO >> [[IDNET-IO(voice), IDENT-IO(-back), IDENT-IO(place)]] IDENT-IO(spr.gl), IDENT-IO(v-length), [[IDENT-IO(-cont),]] DEP-IO, LINEARITY-IO

56. d̪ʰɔ.rɔ.ni.ya→ d̪ɔ.roin.na (´σσ)σσ → (´σσ)σ

dʰɔ.rɔ.ni.ya	ALIGN-L	*FTFT	PARSE-σ	All-FT-L	MAX-IO	IDENT-IO (spr.gl)	IDENT-IO (v-length)	DEP-IO	LINEARITY-IO
a.☞ (d̪´ɔ.roin).na			*		*	*	*	*	*
b. (d̪ʰʳɔ.rɔ).(n`i.ya)		*!		**					
c. d̪ʰɔ.(r´ɔ.ni).ya	*!		**	*					
d. d̪ʰɔ.rɔ.(n´i.ya)	*!*		**	**					

An input sequence of four syllables reduces to two in (58) through vowel (u) deletion and (i) metathesis.

57. [[GrWd=PrWd, FT-BIN, Trochee,]] ALIGN-L, *FTFT >> PARSE-σ >> [[ALL-FT-L >>]] MAX-IO >> [[IDNET-IO(voice), IDENT-IO(-back), IDENT-IO(place), IDENT-IO(spr.gl), IDENT-IO(v-length), IDENT-IO(-cont), DEP-IO]], LINEARITY-IO

58. (h-i) ʈʰa.ku.ra.ni → ʈʰak.rain σσσσ → (´σσ)

ʈʰa.ku.ra.ni	ALIGN-L	*FTFT	PARSE-σ	All-FT-L	MAX-IO	LINEARITY-IO
a.☞ (ʈʰʳak.rain)					*	*
b. (ʈʰʳa.ku).(r`a.ni)		*!		**		
c. ʈʰa.(k´u.ra).ni	*!		**	*		
d. ʈʰa.ku.(r´a.ni)	*!*		**	**		
e. (ʈʰʳa.ku).ra.ni			*!*			

Similarly, five syllables get contracted to two in (59) through monophthongization of diphthong (ou → o), deaspiration (ʈʰ → ʈ), syllable deletion (ku → Ø) and metathesis of i into the preceding syllable. Constraints are same and ranking too is same. The active ones are figure in the tableau.

59. [[GrWd=PrWd, FT-BIN, Trochee,]] ALIGN-L, *FTFT >> PARSE-σ >> ALL-FT-L >>MAX-IO >> [[IDNET-IO(voice), IDENT-IO(-back), IDENT-IO (place),]] IDENT-IO(spr.gl), IDENT-IO(v-length), [[IDENT-IO(-cont), DEP-IO]], LINEARITY-IO

60. bou.ʈʰa.ku.ra.ni → bo.ʈain σσ σσσσ → (´σσ)

bou.ʈʰa.ku.ra.ni	ALIGN-L	*FTFT	PARSE-σ	All-FT-L	MAX-IO	IDENT-IO(spr.gl)	IDENT-IO(v-length)	LINEARITY-IO
a.☞ (b´o.ʈain)					*	*	*	*
b.(bou.ʈʰa).(k`u.ra).ni		*!		**				
c. bou.(ʈʰʳa.ku).(r`a.ni)	*!		*	*				
d. (b´o.ʈa).ku.(r`a.ni)			*!	***		*	*	

We notice an instance of coda deletion by way of prosodic reduction of an input: k → Ø (cf. 62). The OT grammar is the same as before. Only the active ones are shown in the tableau.

61. [[GrWd=PrWd, FT-BIN, Trochee,]] ALIGN-L, *FTFT >> PARSE-σ >> ALL-FT-L >> MAX-IO >> [[IDNET-IO(voice), IDENT-IO (-back),]] IDENT-IO (place), [[IDENT-IO(spr.gl), IDENT-IO(v-length), IDENT-IO(-cont), DEP-IO, LINEARITY-IO]]

62 sɔm.pɔk nɔ.gɔr → sɔm.ɸɔ.nɔ.gɔr (´σσ) (´σσ) → (´σσ)σσ

sɔm.pɔk nɔ.gɔr	Align-L	*FTFT	PARSE-σ	All-FT-L	MAX-IO	IDENT-IO(place)
a.☞ (s´ɔm.pɔ).nɔ.gɔr			**		*	
b. (s´ɔm.pɔk).(n`ɔ.gɔr)		*!		**		
c. sɔm.(p´ɔk.nɔ).gɔr	*!		**	*		
d. sɔm.pɔk.(n´ɔ.gɔr)	*!*		**	**		*

4.7 Deletion at segment level

In (64) h → Ø resulting in reduction of three syllables to two. The constraints hierarchy is the same with only the relevant ones surfacing in the tableau.

63. [[GrWd=PrWd, FT-BIN, Trochee,]] ALIGN-L, [[*FTFT]] >> PARSE-σ >> [[ALL-FT-L >>]] MAX-IO >> [[IDNET-IO(voice), IDENT-IO(-back), IDENT-IO(place), IDENT-IO(spr.gl)]], IDENT-IO(v-length), IDENT-IO(-cont), [[DEP-IO, LINEARITY-IO]]

64. ʃi.pa.hi → ʃi.ɸai
(´σσ)σ → (´σσ) segment deletion → syllables merged

ʃi.pa.hi	Align-L	PARSE-σ	MAX-IO	IDENT-IO(v-length)	IDENT-IO(-cont)
a. ☞ (ʃ˜i.ɸai)			*	*	*
b. (ʃ˜i.pa).hi		*!			
c. ʃi.(p´a.hi)	*!	*			

Deletion of one vowel ɔ → Ø accomplishes prosodic reduction as shown in (64).

65. [[GrWd=PrWd, FT-BIN, Trochee,]] ALIGN-L, [[*FTFT]] >> PARSE-σ >> ALL-FT-L >> MAX-IO >> [[IDNET-IO(voice), IDENT-IO(-back), IDENT-IO(place), IDENT-IO(spr.gl), IDENT-IO (v-length), IDENT-IO(-cont), DEP-IO, LINEARITY-IO]]

66. mo.ʃɔ.la → mɔʃ.la (´σσ)σ → (´σσ)

mo.ʃɔ.la	ALIGN-L	PARSE-σ	All-FT-L	MAX-IO
a.☞ (m´ɔʃ.la)				*
b. (m´o.ʃɔ).la		*!		
c. mo.(ʃ˜ɔ.la)	*!	*	*	

The same OT grammar reduces three syllables to two via multiple segmental deletion (68).

67. [[GrWd=PrWd, FT-BIN, TROCHEE,]] ALIGN-L, [[*FTFT]] >> PARSE-σ >> ALL-FT-L >> MAX-IO >> [[IDNET-IO(voice), IDENT-IO(-back), IDENT-IO(place),

IDENT-IO(spr.gl), IDENT-IO(v-length), IDENT-IO(-cont), DEP-IO,]] LINEARITY-IO

68. a.loiʃ.ʃo → al.ʃì (´σσ)σ → (´σσ)

a.loiʃ.ʃo	Align-L	Parse-σ	All-FT-L	Max-IO	LINEARITY-IO
a. ☞ (´al.ʃì)				***	*
b. (´a.loiʃ).ʃo		*!			
c. a.(l´oiʃ.ʃo)	*!	*	*		

Metathesised vowel yields the same result of prosodic reduction in (68) and the same OT mechanism accounts for it.

69. ko.li.za → koil.za (´σσ)σ → (´σσ)

ko.li.za	ALIGN-L	PARSE-σ	All-FT-L	MAX-IO	LINEARITY-IO
a. ☞ (k´oil.za)				*	*
b. (k´o.li).za		*!			
c. ko.(l´i.za)	*!	*	*		

Once again, deletion and metathesis produce reduced output: (´σσ)σ → (´σσ) as in (71).

70. [[GrWd=PrWd, FT-BIN, TROCHEE,]] ALIGN-L, [[*FTFT]] >> PARSE-σ >> ALL-FT-L >> MAX-IO >> [[IDNET-IO(voice)]], IDENT-IO(-back), IDENT-IO(place), [[IDENT-IO(spr.gl), IDENT-IO(v-length),]] IDENT-IO (-cont), [[DEP-IO, LINEARITY-IO]]

71. na.ri.kɛl → nai.hɔl (´σσ)σ → (´σσ)

na.ri.kɛl	ALIGN-L	PARSE-σ	All-FT-L	MAX-IO	IDENT-IO (-back)	IDENT-IO (place)	IDENT-IO (-cont)
a. ☞ (n´ai.hɔl)				*	*	*	*
b. (n´ai.ɔl)				*!*	*		
c. (n´a.ri).kɛl		*!					
d. na.(r´i.kɛl)	*!	*	*				

5.0 No deletion

Finally, where reduction is redundant i.e., input and output match our proposed OT grammar succeeds in explaining the attested output in TB. This is demonstrated in (73) and (75).

72. [[GrWd=PrWd, FT-BIN, Trochee,]] ALIGN-L, [[*FTFT]] >> PARSE-σ >> [[ALL-FT-L]] >> MAX-IO >> [[IDNET-IO (voice), IDENT-IO (-back), IDENT-IO (place), IDENT-IO (spr.gl)]], IDENT-IO (v-length), IDENT-IO (-cont), [[DEP-IO, LINEARITY-IO]]

73. kʰɒ.wai → ko.wai
(´σσ) → (´σσ) No deletion: Disyllabic foot is ideal.

kʰɒ.wai	ALIGN-L	PARSE-σ	MAX-IO	IDENT-IO (v-length)	IDENT-IO(-cont)
a.☞ kʰʴo.wai)			*	*	*
b. (kʰʴo).wai		*!			
c. kʰɒ.(w´ai)	*!	*			

** b and c are also ruled out by high ranked TROCHEE and FT-BIN which are not included in the tableau for lack of space.

74. [[GrWd=PrWd, FT-BIN, TROCHEE]] ALIGN-L, [[*FTFT]] >> PARSE-σ >> [[ALL-FT-L]] >> MAX-IO >> [[IDNET-IO(voice), IDENT-IO(-back), IDENT-IO (place), IDENT-IO(spr.gl),]] IDENT-IO (v-length), IDENT-IO(-cont), [[DEP-IO, LINEARITY-IO]]

75. bi.ɖal → bi.ɖal (´σσ) → (´σσ)
No deletion: Disyllabic foot is ideal. CVC is not Heavy syllable and hence no stress shifts.

bi.ɖal	ALIGN-L	PARSE-σ	MAX-IO	IDENT-IO (v-length)	IDENT-IO (-cont)
a.☞ (b´i.ɖal)			*	*	*
b. (b´i).ɖal		*!			
c. bi.(ɖ´al)	*!	*			

6. Conclusion

Every content word must have a foot singly or in addition to more. This universal truism of prosodic grammar is satisfied in Tripura Bangla by constructing Trochees predominantly at the syllabic level. For ensuring the presence of two syllables for a syllabic Trochee as also dictated by the disyllabic word minimum requirement the language enlarges the shorter ones even as reduces the longer ones. In the latter case, though the ideal goal of two syllables often remains unachieved, the reductionist move continues resulting in yielding smaller outputs from larger inputs. A plethora of methods tagging in multiple morphological and phonological changes are adopted by TB. One gets to get subtle insights into the morphophonemics in operation in the language under the dicta of its prosodic grammar. The present article traces the modus operandi of these processes at levels segmental, syllabic, foot, word, phrase and offers an OT account of them.

7. References

1. Das, Shyamal. Some Aspects of the Prosodic Phonology of Tripura Bangla and Tripura Bangla English. Doctoral Dissertation. CIEFL (EFL-U). Hyderabad 2001. [ROA-493, http://ruccs.rutgers.edu/roa.html]
2. Kager, Rene. Ternary rhythm in alignment theory. Ms., Utrecht University 1994. [ROA-35, http://ruccs.rutgers.edu/roa.html]
3. Kager, Rene. Optimality Theory. Cambridge University Press 1999.
4. Kathryn H, Franich. Contour Tones and Prosodic Structure in Med0mba In the Proceedings of the 40th Barkley Linguistic Society 2014.
5. McCarthy, John, Alan Prince. Prosodic Morphology I: constraint interaction and satisfaction. Ms., University of Massachusetts, Amherst and Rutgers University 1993. [To appear as Technical report no. 3, Rutgers University Centre for Cognitive Science. Cambridge, Mass.: MIT Press.]
6. McCarthy, John, Alan Prince. Faithfulness and reduplicative identity (Correspondence Theory). In Beckman, Walsh Dickey, and Urbanczyk 1995a, 249-384.
7. Prosodic morphology. In Goldsmith. The Handbook of Phonological Theory. Oxford: Blackwell 1995b, 318-66.
8. Prince, Alan, Smolensky. Optimality Theory: constraint interaction in generative grammar. Ms., Rutgers University, New Brunswick and University of Colorado, Boulder 1993. [To appear as Technical report no. 2, Rutgers University Centre for Cognitive Science. Cambridge, Mass.: MIT Press.]