

Morpho-syntactic Influence on Morpho-phonological Well- formedness

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Theoretical Basis

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- Structural Information crucial for determining phonological domain (Selkirk, 1982, 1984, 1986, 1995, 2011)
- Distributed Morphology (DM), a theory where phonological exponence are introduced after syntax (Halle and Marantz, 1993; Harley and Noyer, 1999; Embick, 2015; Bobaljik, 2017; Bruening, 2018)
- Two crucial units
 - Roots (no synsem features but has underlying phonological representation)
 - Functional Morphemes (synsem features but no phonological features)

Mechanism of DM

Lists Accessed

Access to
Syntactic Terminals

Stages of the Derivation

Syntactic Derivation

(Spell-Out)

Access to
The Vocabulary

PF

LF

Access to
The Encyclopedia

(Interpretation)

(Embick, 2015: 20)

Issue at hand

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- The phonological processes of Meiteilon presents an interesting puzzle as its application is not systematic

- Processes that will be discussed today
 - Voicing Assimilation (VA)
 - Nasal place assimilation (NPA)
 - deaspiration (LoA)

- My argument: The ‘apparent’ unsystematic nature in the application of these processes is due to the morpho-syntactic configuration the processes are co-indexed with.

Roadmap

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- Show how only phonological analysis is not enough to account the application versus non-application of the phonological processes
- What is the domain for the application of these processes?
 - Prosodic Word
- The mechanism for determining a Prosodic Word in Meiteilon.
- How the seeming exceptional case in application of phonological processes within nominal domain is also triggered by structural configuration?

To begin with, let us look at some examples...

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➤ Agreement in voice feature

1. ləŋ- + -pə / -te/ -ke → ləŋ-**bə**/ ləŋ-**de**/ ləŋ-**ge**
throw Nzr/ Neg/ Vol → 'to throw' / 'did not throw' / 'will throw'
2. lək- + -pə / -te/ -ke → lək-**pə**/ lək-**te**/ lək-**ke**
come Nzr/ Neg/ Vol → 'to come' / 'did not come' / 'will come'

➤ Place Assimilation of Nasals

3. kon + pak → ko**mp**ak 'big bowl'
utensil flat
4. sən + kon → sə**ŋ**gon 'cow shed'
cow shed

Contd.

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► Loss of Aspiration

5. k^hən- + -t^hok + -pə → k^hən-**d**ok-pə ‘to pick out’

pick Dir Nzr

6. t^hɑŋ- + -k^hət + -pə → t^hɑŋ-**g**ət-pə ‘to carry (something) up’

carry Dir Nzr

- In Optimality Theory (OT) framework (Prince and Smolensky, 1993; Kager, 1999), phonological processes are analysed through constraint system
- Further, application of phonological processes in a language indicate that their corresponding constraints are ranked high.
- And, high ranked constraints cannot be violated.

contd.

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- All constraints can be basically divided into two categories
 - Faithfulness constraint (IDEN IO (Input-Output) constraints): No change between input and output
 - Markedness constraint: Alteration in the input to produce a well-formed output
 - (based on alteration, eg. Agree(voice) in Meiteilon)
- On the superficial level, it is possible to state that Agree(voice) in Meiteilon is ranked higher than IDEN IO.
- Is that really so?

contd.

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- ▶ Adopting Prince and Smolensky's (1993) notion of Richness of the Base, which argues that all inputs are possible in all languages but an output set by a grammar is based on language-particular ranking of the constraint, let us take a nonsensical underived word where all the segmental units agree in voice feature to check the constraint ranking.

▶ Tableaux 1

A	dəb	Ident(IO)	Agree (voice)	B	dəb	Agree (voice)	Ident(IO)
i.	●*dəb			i.	●*dəb		
ii.	təb	*	*	ii.	təb	*	*
iii.	təp	**	**	iii.	təp	**	**

contd.

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In fact, voiced obstruent is systematically blocked in the language (*Obstr_(voice))

Let us see how the mechanism works in the language in the table below

Tableaux 2

A.	ba	*Obstr(voice)	Ident (IO)	B	ba	Ident (IO)	*Obstr(voice)
i.	ba	*!		i.	●*ba		*
ii.	pa		*	ii.	pa	*!	

Further the existence of example below, where VA applies only between morpheme boundaries in a derived domain confirms that the process is co-indexed to a specific morpho-syntactic configuration

7. pan (grow) + -pə (Nzr) → pan -bə / *ban -bə 'to grow'

8. lak + -pə (Nzr) → lak -pə / *lag -bə

Similarly...

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- It can be stated that the constraints for Nasal Place Assimilation and deaspiration are also ranked high
- However, both the processes are co-indexed to certain morpho-syntactic configuration
- The co-indexation includes Voicing Assimilation as well because there are constructions where the processes fail to apply

No VA	No NPA	No LoA
9. ə- + pik + -pə → ə-pik-pə/ *ə-bik-pə Attr. small Nzr 'small'	11. kon + -pə → kon-bə / *kom-pə hug Nzr 'to hug'	13. t ^h əw + t ^h i → t ^h əw-t ^h i/*t ^h əw-di oil waste 'oil waste'
10. wa + -ton → wa-ton/ *wa-don bamboo tip 'tip of bamboo'	12. t ^h on- + -ke → t ^h on-ke/ *t ^h oŋ-ge pile Vol. 'will pile up'	14. p ^h əm- + -k ^h i → p ^h əm-k ^h i /*p ^h əm-gi sit Past 'sat'

So what is the domain of phonological processes?

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- ▶ Take place between Categorized root plus suffixes
 - ▶ process of categorization takes place in narrow syntax (de Belder and Craenenbroeck, 2015; de Belder, 2011)
- ▶ So, I argue that Prosodic word in Meiteilon are formed by mapping structural units to prosodic word.
- ▶ I also argue that syntactic units mapped are bigger than a phrase because it contains larger syntactic configuration

15. čəŋ- + -lu + -te + -le → čəŋ-**ru**-**də**-re ‘did not enter’

enter - Deic - Neg - Pref

Prosodic words in Meiteilon

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Note that DM proposes roots to be associated with phonological elements while functional items receive phonological feature only after syntactic derivation and morphological conditions can alter syntactic configuration by triggering certain modification during Vocabulary Insertion.

- Further, I adopt two theories of how the mapping mechanism works

- **Generalized Alignment**

$\text{Align}(\text{Cat1}, \text{Edge1}, \text{Cat2}, \text{Edge2}) =_{\text{def}}$

$\forall \text{Cat1} \exists \text{Cat2}$ such that Edge1 of Cat1 and Edge2 of Cat2 coincide,

Where, $\text{Cat1}, \text{Cat2} \in \text{PCat} \cup \text{Gcat}$

$\text{Edge1}, \text{Edge2} \in \{\text{Right}, \text{Left}\}$

(McCarthy and Prince, 1993: 2)

- **Edge-Based Theory**

Right/Left edge of $\alpha \rightarrow$ Edge of β

α is a syntactic category, β is a prosodic category

(Selkirk, 1995: 447)

The Mechanism

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- Left edge of categorized root mapped to left edge of Prosodic Word
- I adopt this idea to account why all functional items get clubbed with roots in Meiteilon

➤ $[_{AspP}[_{DP}[_{NP}Root_N(\sqrt{Root\ n})\ D]][_{vP}[_{vP}[_{DP}[_{NP}Root_N(\sqrt{Root\ n})]\ D]Root_V(\sqrt{Root\ v})]\ v]Asp]$

- **Morphological Merger**

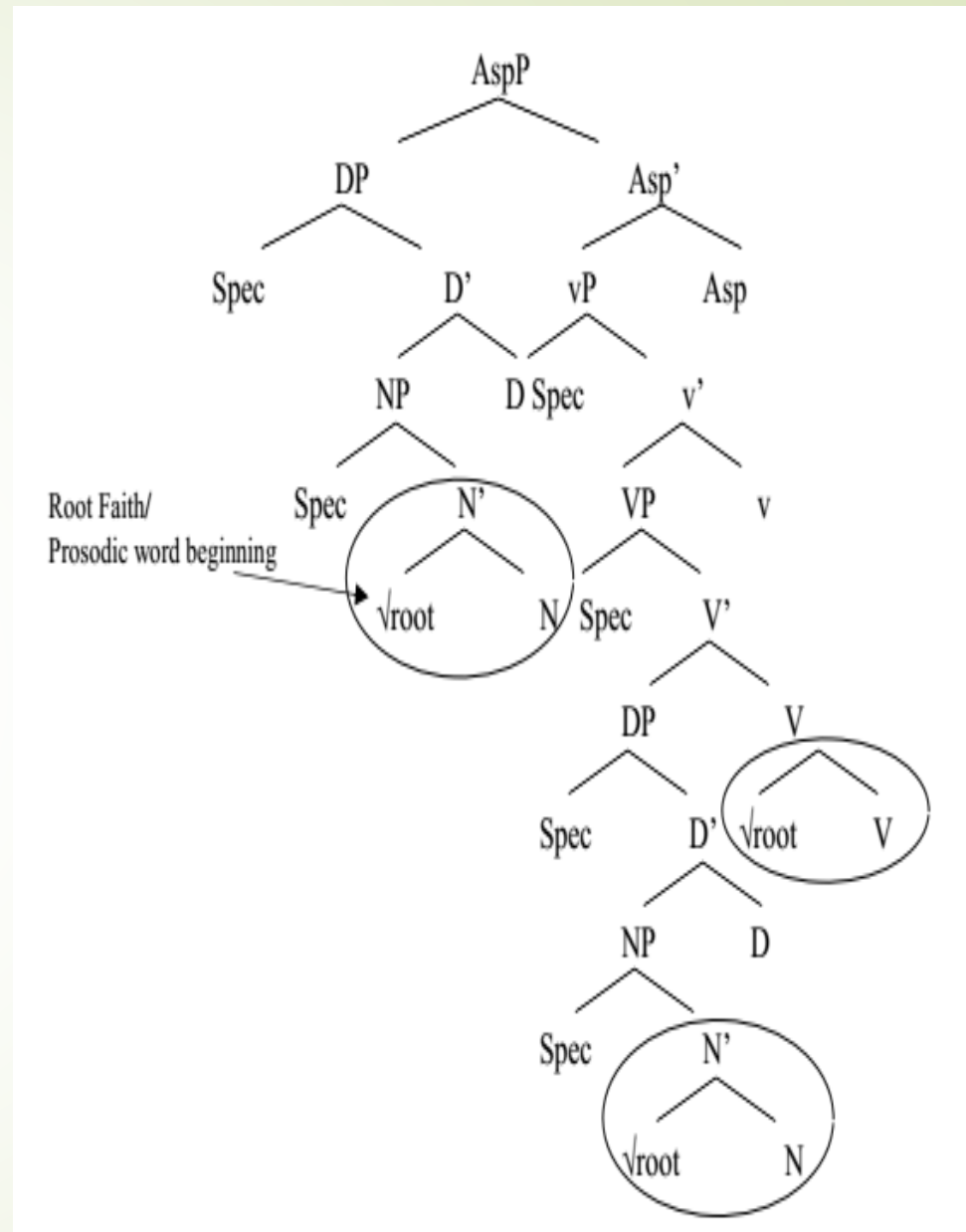
Root_N+D Root_N+D Root_V + Asp

- **Vocabulary Insertion (Insertion of phonological exponents)**

Root_N+D Root_N+D Root_V + Asp

- **Prosodic Mapping**

(ω Root_N +D (ω Root_N +D (ω Root_V + Asp



Domain of phonological process

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- The domain for the application of phonological processes in Meiteilon

Phonological Domains	Phonological Process Application
(ω Root _N + D	✓
(ω Root _N + D	✓
(ω Root _V + Asp	✓

- Left edge of categorized root marks the boundary of a Prosodic Word in the language
- This is why no voicing assimilation takes place between the attributive adjective prefix and root

16. $\text{ə-}(\omega\text{ta}\eta + \text{-pə}) \rightarrow \text{ə-}(\text{ta}\eta\text{-bə})$ 'expensive'

Blockage of Phonological processes

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➤ The above mechanism also helps account why no voicing assimilation and deaspiration takes place in nominal compounds

➤ Prosodic Word construction for t^haw+ t^hi (oil+ waste)

➤ Step 1:

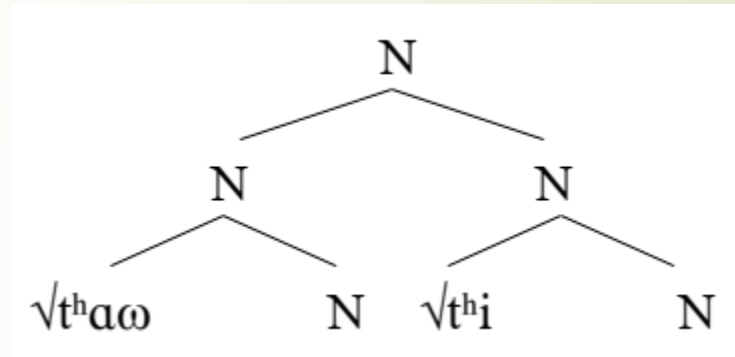
Mark left edge of root

[√t^haw N [√t^hi N

➤ Step 2: Mapped the left edge of root to left edge of Prosodic Word

(ω √t^haw (ω √t^hi (different prosodic domains, no phonological processes)

➤ However, this does not hold for nasal place assimilation



Nasal Place Assimilation

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- NPA is the only process which is regressive and alters a root.

17. kon + pak → kom-pak 'flat bowl'
utensil flat

➤ [Root kon] + [Root pak] → (ωkon - (ωpak

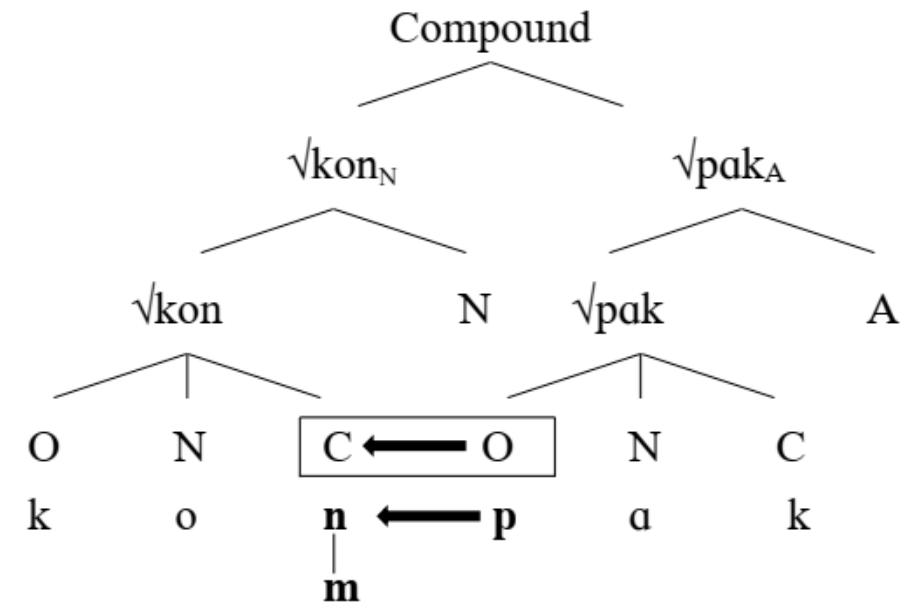
- Two categorized roots, here I adopt

- Positional Faithfulness (Lombardi, 1999)

- distinction in phonological strength of onset versus coda plays a crucial role

- So, phonological element in the onset position will be marked for higher faithfulness

- Hence, the alteration of root coda



What about deaspiration?

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- Lets begin with the directional markers.
- Four directional markers in the language
 - *sin-* ‘in’; *t^hok-* ‘out’; *t^hə-* ‘down’ and *k^hət-* ‘upward’

- Adding these markers with the verb *pu-* ‘carry’, we have the following
 18. a. *pu-* + ***sin-*** → *pu-sin* ‘carry in’
 - b. *pu-* + ***t^hok-*** → *pu-t^hok* ‘carry out’
 - c. *pu-* + ***t^hə-*** → *pu-t^hə* ‘carry down’
 - d. *pu-* + ***k^hət-*** → *pu-k^hət* ‘carry up’

contd.

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- Apart from the directional markers, Meiteilon has deictic markers *-lu/ -lə*

19. tombə čak ča-**ru**-re

Tomba rice eat-Deic-Perf

‘Tomba has eaten rice’ (away from the point of speech)

- Co-occurrence is allowed

20. tombə čak ča-**t^hok-u**-re

Tomba rice eat-Dir-Deic-Perf

‘Tomba has eaten rice’ (more focused on completion of the action)

- Presents a puzzle as to why two directional elements co-occur.

A difference....

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- ▶ Difference in where the markers can appear w.r.t. to the verb

21. tombə čak ča-t^hok-hən-lu-re/ *ča-hən-t^hok-lu-re → (ča-t^hok-həl-lu-re)

Tomba rice eat-Dir-Caus-Deic-Perf

‘Tomba was made to eat rice somewhere’

- ▶ Causative marker *hən* cannot intervene between the verb and directional suffix however, it can occur between the verb and the deictic marker.
- ▶ directional marker occurs within the vP domain while the deictic marker occurs beyond the vP domain

contd.

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- ▶ Here, I adopt Ramchand's (2008) First Phase Syntax proposal to account this puzzle.
- ▶ She argues that verbs which have only 'directed motion interpretation' (Ramchand, 2008; 125) must combine with PathP.
- ▶ As the directional markers in Meiteilon strongly encodes direction or the path through which the event took place, I adopt Ramchand's proposal and argue that the directional marker originates under Path head.
- ▶ The PathP gets selected by Process verb (Butt and Scott, 2002) and the Path head moves up to the verb head resulting into an incorporated configuration

contd.

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[_{TP} tombə_N [_√tombə N] [_{vP} t_{tombə} [_{VP} k^hɑŋ_N [_√k^hɑŋ N] [_{PathP} Spec [_{RvP} Spec [_{RvP}] t_{Path}] t^hɑŋ_v [_√t^hɑŋ V] + Path] v] T]

➤ Morphological Merger

➤ tombə_N k^hɑŋ_N (t^hɑŋ_v + Path)-v-T

➤ Vocabulary Insertion

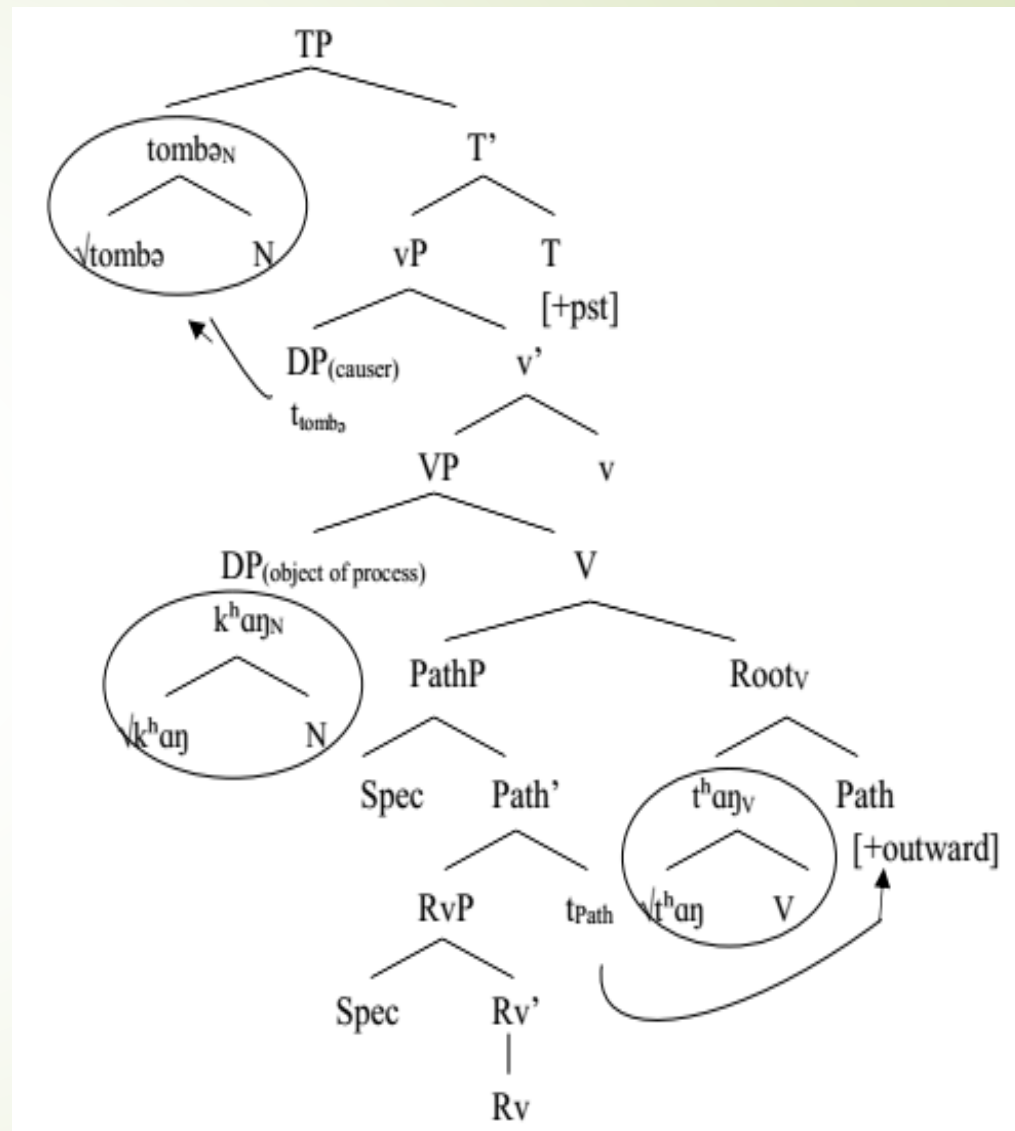
➤ tombə k^hɑŋ (t^hɑŋ + t^hok)- k^hi

➤ Prosodic Mapping

➤ (ωtombə (ωk^hɑŋ (ω(t^hɑŋ + t^hok)- k^hi

➤ tombə k^hɑŋ t^hɑŋ-dok-k^hi

➤ ‘Tomba carried out the wok’



More puzzles in nominal compounds

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- ▶ The story so far does not account the application of these processes in certain nominal compounds.

22. p^{hi} + t^ha → p^{hi}-da 'mat'

cloth spread

23. sən + k^haw → seŋ-gaw 'purse'

money bag

- ▶ However, I argue that these puzzles are still triggered by their structural configuration

Thank You