LING 119A Homework 1: Finnish nouns and adjectives

This paper deals with alternations in nominative and partitive singular forms for Finnish nouns and adjectives.

1. Morphological rules and affix allomorphy

Partitive singular nouns and adjectives are marked with a suffix vowel, either [-ɑ] after a back vowel or [-æ] otherwise.[1]

Because the [-æ] allomorph occurs in a wider variety of environments, it must be the underlying form, /-æ/.[2] A phonological rule later on will take care of the [-ɑ] allomorph. The morphological rule[3] for forming partitive singulars is therefore to add /-æ/:

> Partitive Singular Formation: X → Xæ if X is [+partitive, +singular]

The nominative singular form is just the root[4] with no affixes added, so no morphological rule is needed.

2. Root allomorphy and underlying forms

Some roots only have one allomorph: [ɑɑmu] 'morning, nom. sg.' vs. [ɑɑmu-ɑ] 'morning, part. sg.'.[5] These non-alternating roots can end in any vowel except [-i]. Because these roots only have one allomorph, that is presumably their underlying form (/ɑɑmu/).

Other roots have two allomorphs: one ending with [-i], such as [lehti] 'leaf, nom. sg.' and one with [-e] such as [lehte-æ] 'leaf, part. sg.'. This alternation is found for each word with the [-e-æ] final vowels. The allomorph ending with [-i] is always found in the unsuffixed form __]$_{word}$ and the allomorph ending with [-e] is always found in the suffixed form __ V. The allomorph ending with [-e] must be the underlying one[6] (/lehte/), because if the underlying form ended with [-i] instead, we would not be able to explain why these roots behave differently from non-alternating roots that also end with [-i] in the nominative singular form.

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[1] 6.3 IdentifyAllomorphs
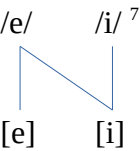[2] 6.4 UnderlyingForm
[3] 6.2 MorphologicalRule
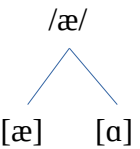[4] 6.1 MorphemeBoundaries
[5] 6.3 IdentifyAllomorphs
[6] 6.4 UnderlyingForm

3. Phonemicization

/e/ and /i/ are separate phonemes, but /e/ is realized as [i] when word-final.

/e/   /i/ [7]

[e]   [i]

The alternation in the suffix shows that the vowel /æ/ has two allophones:

/æ/

[æ]   [ɑ]

4. Phonological Rules

A Backing rule accounts for the alternation seen in the suffixes:

> *Backing:*   /æ/ → [ɑ] / [+back] __
> /æ/ becomes [ɑ] after a back vowel.[8]

A Raising rule accounts for the alternation seen in the stems:

> *Raising:*   /e/ → [i] / __]$_{word}$
> /e/ becomes [i] at the end of a word.

5. Derivations

The following derivations illustrate how the morphological rule and the phonological rule apply. I've chosen a set of words that shows both the alternating suffix and the alternating stems.[9]

'morning, nom. sg.'	*'morning, part. sg.'*	
/ɑɑmu/	/ɑɑmu/	
N, +nom, -pl	*N, +part, -pl*	***Root's Lexical Entry***
		Morphology
---	ɑɑmuæ	Part. Sg. Formation
		Phonology
---	ɑɑmuɑ	Backing
---	---	Raising
[ɑɑmu]	[ɑɑmuɑ]	***Surface Form***

[7] 5.5 PhonemicizationDiagram
[8] 6.5 RulesForAlternation
[9] 7.1 GiveDerivation

'smile, part. sg.'	'sleigh, nom. sg.'	'sleigh, part. sg.'	
/hymy/	/reke/	/reke/	
N, +part, -pl	N, +nom, -pl	N, +part, -pl	**Root's Lexical Entry**
			Morphology
hymyæ	---	rekeæ	Part. Sg. Formation
			Phonology
---	---	---	Backing
---	reki	---	Raising
[hymyæ]	[reki]	[rekeæ]	**Surface Form**

6. Additional data

I do realize that the assignment writeup suggested we don't look up further phonological data for Finnish, but looking at the advanced data now, I can add an additional phonetic rule to explain the advanced data.

I know Wikipedia isn't the most reliable source, but to paraphrase its statement regarding vowel harmony:

Front vowel pairing	Back vowel pairing
/y/	/u/
/ø/	/o/
/æ/	/ɑ/

/i/ and /e/ are considered neutral for vowel harmony in Finnish since they don't have back counterparts in the language.

If we consider a word like [rɑsti], the current phonetic rules I came up with in the basic data section can't explain the partitive singular equivalent [rɑstiɑ] since we'd expect [rɑstiæ] after applying the partitive singular formation morphological rule; the backing rule doesn't apply to the /i/ in the root /rɑsti/. If we apply a vowel harmony rule at the end of the derivation such that the suffix is changed to the backed equivalent if the word is composed of back vowels and /i/ or /e/, this new rule accounts for both the basic and advanced data.

> *Vowel Harmony*:   /æ/ → [ɑ] / (root with only back vowels and /i/ or /e/) __
> /æ/ becomes [ɑ] if the root's vowels consist of only back vowels and /i/ or /e/.[10]

In fact, the vowel harmony rule can replace the backing rule I proposed previously. Here are some derivations to show that this is indeed the case:[11]

[10] 6.5 RulesForAlternation
[11] 7.1 GiveDerivation

'smile, part. sg.'	*'morning, part. sg.'*	
/hymy/	/ɑɑmu/	
N, +*part, -pl*	N, +*part, -pl*	***Root's Lexical Entry***
		Morphology
hymyæ	ɑɑmuæ	Part. Sg. Formation
		Phonology
---	ɑɑmuɑ	Vowel Harmony
---	---	Raising
[hymyæ]	[ɑɑmuɑ]	***Surface Form***

'door, part. sg.' (archaic)	*'door, nom. sg.' (archaic)*	
/ukse/	/ukse/	
N, +*part, -pl*	N, +*nom, -pl*	***Root's Lexical entry***
		Morphology
ukseæ	---	Part. Sg. Formation
		Phonology
ukseɑ	---	Vowel Harmony
---	uksi	Raising
[ukseɑ]	[uksi]	***Surface Form***