Ling 125
Project #1
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Proto-Balto-Finnic -> Finnish

Sound change: Epenthesis, vowel compensatory shortening

#	**Proto-Balto-Finnic**	**Finnish**	**gloss**
2	no:ri	nuori	‘young’
3	ko:ri	kuori	‘bark, peel’
4	ho:li	huoli	‘care, worry’
5	jo:ni	juoni	‘line, direction’
6	le:mi	liemi	‘broth’
7	me:s	mies	‘man’
8	me:li	mieli	‘mind’
9	ke:li	kieli	‘tongue, language’
10	re:mu	riemu	‘joy’
11	me:kka	miekka	‘sword’
12	pe:na	piena	‘slat, rail, cross-piece’
13	ve:ras	vieras	‘foreign’
17	tø:	tyø	‘work’
18	mø:	myø	‘along’
46	lehti	lehti	‘leather, sheet’
63	mesi	mesi	‘honey’
78	tosi	tosi	‘true’
79	solki	solki	‘buckle, brooch’

According to the table above, we can see that there are vowel shortening and vowel epenthesis in the evolution of some of the words. We can also see that only those words with long vowel undergo epenthesis and it states that the presence of long vowel is the condition to trigger epenthesis. And therefore epenthesis has to be performed on the preceding position before the vowel shortening, e.g.

	Proto-Balto-Finnic		Finnish	
13	ve:ras	>	vi<u>e</u>:ras	Epenthesis
	vie:ras	>	vi<u>e</u>ras	Vowel shortening
2	no:ri	>	nu<u>o</u>:ri	Epenthesis
	nuo:ri	>	nu<u>o</u>ri	Vowel shortening
17	tø:	>	tyø:	Epenthesis
	tyø:	>	tyø	Vowel shortening

Although different vowels are being inserted before the long vowels, there is a pattern of which vowel to be inserted.

Long vowel	preceding inserted vowel
o:	u
e:	i
ø:	y

It is obvious that the preceding inserted vowel has to be with the same frontness/backness and roundness with the long vowel.

#	**Proto-Balto-Finnic**	**Finnish**	**gloss**
15	hi:ri	hi:ri	'mouse'
50	ha:va	ha:va	'wound'
64	ku:si	ku:si	'fingernail, claw'
16	ky:næræ	ky:næræ	'ell (measure)'

The data above states that not all long vowels trigger the epenthesis. Words with high or low long vowels like [i:], [a:], [u:] and [y:] do not have any sound changes and in another words, epenthesis only happens if the proceeding sound is a mid long vowel.

Conclusion

Step 1: Epenthesis

$\emptyset > V_{[\alpha \text{ v-place \& roundness high}]} / \_ V_{[\alpha \text{ v-place \& roundness long mid}]}$

Step 2: Vowel shortening

V:[mid] > V/ V_

*The long vowel is shortened when the preceding sound is also a vowel. This can assure that vowel shortening happens after the vowel epenthesis.

Proto-Balto-Finnic -> Estonian

Sound change: word final elision, word final vowel shift

#	**Proto-Balto-Finnic**	**Estonian**	**gloss**
2	no:ri	no:r	‘young’
3	ko:ri	ko:r	‘bark, peel’
4	ho:li	ho:l	‘care, worry’
5	jo:ni	jo:n	‘line, direction’
6	le:mi	le:m	‘broth’
7	me:li	me:l	‘mind’
9	ke:li	ke:l	‘tongue, language’
15	hi:ri	hi:r	‘mouse’
29	ilma	ilm	‘weather, world’
47	hauta	haut	‘grave’
48	lauta	laut	‘board’
50	ha:va	ha:v	‘wound’
51	hinta	hint	‘price’
52	into	int	‘passion’
53	halko	halk	‘piece/ block of wood’
54	kylmæ	kylm	‘cold’
32	nælkæ	nælk	‘hunger’
33	hærkæ	hærk	‘ox, bull’
34	silmæ	silm	‘eye’
45	lehmæ	lehm	‘cow’
38	lintu	lint	‘bird’
39	hullu	hull	‘crazy’
58	kirppu	kirpp	‘flea’
1	ma:	ma:	‘land’
14	lu:	lu:	‘bone’
17	tø:	tø:	‘work’
18	mø:	mø:	‘along, by’
7	me:s	me:s	‘man’
13	ve:ras	vɨ:ras	‘foreign’

According to the data above, we can see that there is elision happening at the word final position only at certain conditions.

It is possible that the sound at final position triggering the elision. If that is the case, the data at the bottom of the table could be explained as long vowels and consonants do not trigger word final elision (e.g. only regular vowels).

#	**Proto-Balto-Finnic**	**Estonian**	**gloss**
56	hiki	hiki	‘sweat’
25	kivi	kivi	‘stone’
26	lumi	lumi	‘snow’
27	læpi	læpi	‘hole, through’
49	lava	lava	‘platform, frame’
19	kala	kala	‘fish’

According to the data above, there are times that the word final vowel does not undergo elision. The difference between the words with elision and those without is that the words without elision are of simpler structure. They consist of two syllables with each in the form CV(the structure of the whole word is basically CVCV). Comparing with those with elision, their first syllable has more complicated forms like CV: (‘no:ri’, ‘le:mi’), CVV(‘lauta’,’hauta’), VC(‘ilma’), CVC(‘hinta’, ‘hullu’) or CVCC(‘kirppu’).

Assumption #1: Elision will happen at final vowel except in those words with the structure of CVCV.

#	**Proto-Balto-Finnic**	**Estonian**	**gloss**
66	mato	matu	‘snake’
67	elo	elu	‘life/ building’
68	hako	haku	‘evergreen sprig’
69	ilo	ilu	‘beaty’
70	himo	himu	‘lust, desire’
71	iho	ihu	‘skin, hide’
21	kylæ	kyla	‘village’
22	ikæ	ika	‘age’
23	isæ	isa	‘father’

Other than elision, there is also vowel shift at the word final position.

o > u
æ > a / _#

Sample (66), (68), (70) and (21), according to the assumption #1, should remain the same form in Estonian without undergoing elision. But there are indeed some alternations at the word final position. It seems like that in Estonian, mid vowels like [o] and [æ] cannot be the word final and therefore they are shifted to the closest high or low vowel with the same v-place.

Conclusion #1: Word final vowel shift
$V_{[\alpha \text{ v-place mid}]} > V_{[\alpha \text{ v-place closest high/low}]} / \_\#$

Sample (67), (69), (71), (22) and (23) suggest a modification of assumption #1:

Conclusion #2: Elision will happen at final vowel except in those words with the structure of CVCV or VCV.

#	**Proto-Balto-Finnic**	**Estonian**	**gloss**
40	mænty	mænʲtʲ	'pine'
41	synty	synʲtʲ	'birth'
47	hauta	haut	'grave'
48	lauta	laut	'board'
42	hanki	haŋk	'crust of snow'
43	kurki	kurk	'crane'

According to the data above, we can see both 5 samples undergo elision but only (40) and (41) have the final two sound palatalized; and the alveolar nasal becomes velar nasal in (42).
It is likely that in (42), the change in place of articulation is an example of assimilation as the proceeding sound is [k] which is a velar stop. If so, then the alternation in (40) and (41) is likely to be related to/ under the condition of the proceeding sound.

[t] has to receive the phonetic property, e.g. palatalized, from [y] since it is assimilating the tongue position. And like (42), the nasal is also assimilating the proceeding sound and becomes palatalized also.

This hypothesis will only work if the place assimilation takes place before the elision. And the [n] assimilation will only be performed before a stop like [t] and [k].

Conclusion #3:
Palatalization: Stop > palatalized/_[y]
Place assimilation: Nasal > α place/ _ [α place stop]

*Palatalization has to be performed before elision.

#	**Proto-Balto-Finnic**	**Estonian**	**gloss**
35	marja	mari	'berry'
36	karja	kari	'cattle'
37	orja	ori	'slave'
81	pohja	pɨhi	'bottom, base'

According to conclusion #2, elision is first performed.
(35) marja > marj

It seems that [j] cannot be a word final sound in Estonian and so it is being assimilated into [i] which has similar tongue position.

Conclusion #4: Place assimilation
[j] > [i]/_#

#	**Proto-Balto-Finnic**	**Estonian**	**gloss**
6	le:mi	le:m	'broth'
7	me:li	me:l	'mind'
9	ke:li	ke:l	'tongue, language'
10	re:mu	rɨ:m	'joy'
11	me:kka	mɨ:kk	'sword'
12	pe:na	pɨ:n	'slat, rail, cross-piece'
13	ve:ras	vɨ:ras	'foreign'

It is not easy to find out the condition of when will [e:] become [ɨ:]. The only observation is that when [l] is around the long vowel [e:], it remains as [e:] in Estonian. It may be a valid condition that when [l] is either the preceding or proceeding position, [e:] wouldn't become [ɨ:] since [ɨ] and [l] have similar tongue position. But this only happens to long vowel [e:].

Conclusion #5: Place dissimilation
[e:] becomes [ɨ:] only except when [l] is at the preceding or proceeding position.

#	**Proto-Balto-Finnic**	**Estonian**	**gloss**
59	verkko	vɨrkk	'net'
72	vesa	vɨsa	'sprout, weed, brush'
73	helma	hɨlm	'skirt, frock'
75	velka	vɨlk	'debt'
74	terva	tɨrv	'tar'
76	perna	pɨrn	'spleen'
77	leuka	lɨuk	'jaw, chin'
60	onsi	ɨ:s	'a hollow place'
24	joki	jɨki	'river'
78	tosi	tɨsi	'true'
79	solki	sɨlk	'buckle, brooch'
80	sormi	sɨrm	'finger'
46	lehti	leht	'leather, sheet'
45	lehmæ	lehm	'cow'
63	mesi	mesi	'honey'
37	orja	ori	'slave'