

Non-isomorphic morphological and phonological feet in Inari Saami

Inari Saami (Äimä 1918; Itkonen 1946, 1986–1991; Sammallahti 1998), a Finno-Ugric language of Northern Finland, has a rhythmic process of Consonant Gradation whose distribution is incompatible with the facts of stress and duration. In this talk, I will show that Inari Saami must be analyzed as having two foot tiers that must coexist in the representation simultaneously — the incompatibility cannot be resolved by appeal to serial ordering.

Consonant Gradation entails the insertion of a foot-medial consonantal mora and presupposes the construction of minimally disyllabic constituents from left to right across the domain. This is illustrated in (1). In western varieties of Saami, the distribution of Consonant Gradation perfectly mirrors that of stress feet. In Inari Saami, however, the metrical system underwent radical restructuring without altering the distribution of Consonant Gradation. The crucial stages in this development were as follows. First, in imparisyllabic words, final lapses were eliminated by forcing each word to end with a maximal syllabic trochee, as shown in (2). Syllabic trochees are then parsed exhaustively from left to right over the remainder, as shown by the behaviour of words with 5 and 7 syllables in (3). Second, Apocope applied in words of three or more syllables, but crucially left the foot structure intact (4). The outputs of Apocope in present-day Inari Saami are distinguished by a *word-final monosyllabic foot* that now contrasts with legacy consonant-final forms in which the structural description for Apocope was not met (5).

Our argument for parallelism comes from a consideration of the alternations conditioned by morphosyntactic environment, here case and number forms of disyllabic nouns. (6) supplies a reconstructed Proto-Saami paradigm for *pinnɔ ‘pile’; (7) gives the corresponding paradigm for present-day Inari Saami /pino/ with stress foot structure supplied in brackets, morphological foot structure (for Consonant Gradation) in braces. As shown in (7), one of the most important manifestations of stress foot structure is phonetic duration. For example, a long vowel is ‘half-long’ ($V\cdot$) in the weak branch of a disyllabic stress foot, but extra long ($VV\cdot$) when the sole nucleus of a monosyllabic stress foot. Similarly, a geminate is half-long ($C\cdot$) when medial in the stress foot, but extra long ($C\cdot C$) at the boundary between two stress feet. We also find lengthening of the vowel in the first (main-stressed) syllable to meet the requirements of FOOT BINARITY. This is seen in the illative plural, inessive and elative forms.

In Proto-Saami, Strong Grade developed before an open rhyme, as in the nominative and illative singular, essive and partitive forms. Preceding a closed rhyme, the foot-medial consonant remained unlengthened (Weak Grade), as in the genitive, accusative, inessive and elative singular forms, and the plural generally. In present-day Inari Saami, the distribution of the Strong and Weak Grade is morphologically conditioned, thanks to the earlier application of Apocope (which gave rise to instances of the Strong Grade preceding a closed rhyme) as well as the loss of genitive singular $\{-n\}$ and accusative singular $\{-m\}$ (which produced instances of the Weak Grade preceding an open rhyme). As (7) shows, the cumulative result of these changes is that every possible combination of $\{\text{Strong, Weak}\} \times \{\text{final monosyllabic foot, } \neg\text{final monosyllabic foot}\}$ is attested. Thus, crucially, the same morphosyntactic context (e.g. the essive and partitive) may require *both* a final monosyllabic foot *and* trigger the Strong Grade (which presupposes a disyllabic domain). Since each combination is essentially a lexical property of the suffix, the conflict between the two representations cannot be resolved by appeal to strata — they must be introduced simultaneously. This conclusion is reinforced when we look at consonant stems, where the two types of domain may even overlap, e.g. /kielas/ ‘cape, point, keel’ $\rightarrow \{(kie)(las)\}$ (NOM.SG) $\sim \{(kiel)(la\}seh$ (NOM.PL), where the plural form evinces the Strong Grade (diagnosed by geminate [ll]).

Inari Saami thus extends our knowledge of cases where the constituents manipulated by morphological processes are not isomorphic with those of the phonology (cf. Downing 2006).

(1) *Gradation feet*

UR	STRONG	WEAK	
/mane/	{maneeh}	{mannee}	‘egg NOM.PL~NOM.SG’
/pino/	{pinooh}	{pinnoo}	‘pile NOM.PL~NOM.SG’
/lasa/	{lazaah}	{lassaa}	‘doorpost NOM.PL~NOM.SG’
/ɲamma/	{ɲammaah}	{ɲam:ma}	‘teat NOM.PL~NOM.SG’
/lanne/	{lanneeh}	{lan:ne}	‘prison NOM.PL~NOM.SG’
/kiessi/	{kiessih}	{kies:si}	‘guest NOM.PL~NOM.SG’
/tiletem/	{tilet}{temeeh}	{tilet}{tiamman}	‘impatient NOM.PL~ILL.SG’
/purrʌmʌʃ/	{purrʌ}{mʌʒah}	{purrʌ}{mʌʃʌn}	‘food NOM.PL~ILL.SG’

Note: /C:C/ = overlong geminate

(2)	Proto-Saami	>	Early IS	
	[(σσ)σ]		[(σ)(σσ)]	
(3)	[(σσ)(σσ)σ]	>	[(σσ)(σ)(σσ)]	
	[(σσ)(σσ)(σσ)σ]	>	[(σσ)(σσ)(σ)(σσ)]	
(4)	Early IS	>	Post-Apocope IS	(5) Non-apocoped legacy forms
	[(σ)(σσ _V)]		[(σ)(σ _C)]	[(σσ _V), [(σσ _C)]
	[(σσ)(σσ _V)]		[(σσ)(σ _C)]	[(σ)(σσ _C)]
	[(σσ)(σ)(σσ _V)]		[(σσ)(σ)(σ _C)]	[(σσ)(σσ _C)]
	[(σσ)(σσ)(σσ _V)]		[(σσ)(σσ)(σ _C)]	[(σσ)(σ)(σσ _C)]
	[(σσ)(σσ)(σ)(σσ _V)]		[(σσ)(σσ)(σ)(σ _C)]	[(σσ)(σσ)(σσ _C)]

Note: [σ_C = closed syllable; σ_V = open syllable]

(6)	<i>Proto-Saami</i> *pinɔɔ ‘pile’		(7)	<i>Inari Saami</i> /pino/ ‘pile’	
	SG	PL		SG	PL
NOM	*(pin.nɔɔ)	*(.pi.nɔɔk)	NOM	{(pin·o·)}	{(pino·h)}
GEN	*(pi.nɔɔn)	*(.pi.nɔɔj)	GEN	{(pino·)}	{(pino·jj)}
ACC	*(pi.nɔɔm)	*(.pi.nɔɔj).tee	ACC	{(pino·)}	{(pinoj·jt)}
ILL	*(pin.nɔɔ)ɔn	*(.pi.nɔɔj).(ta.an)	ILL	{(pin·o·n)}	{(pii·)(noo·jt)}
INESS	*(pi.nɔɔs).nee	*(.pi.nɔɔj).nee	INESS	{(pii·)(noo·st)}	{(pii·)(noo·jn)}
ELAT	*(pi.nɔɔs).tee	*(.pi.nɔɔj).stee	ELAT	{(pii·)(noo·st)}	{(pii·)(noo·jn)}
ESS		*(pin.nɔɔ).nee	ESS		{(pin·)(noo·n)}
PART		*(pin.nɔɔ).tee	PART		{(pin·)(noo·n)}

References

- Äimä, Frans. 1918. *Phonetik und Lautlehre des Inarilappischen. I. Beobachtungsphonetik und deskriptive Lautlehre. II. Instrumentale Versuche und Messungen.* [Mémoires de la Société Finno-ougrienne 42–43.] Helsinki: Suomalais-ugrilainen seura.
- Downing, Laura J. 2006. *Canonical Forms in Prosodic Morphology.* Oxford: Oxford University Press.
- Itkonen, Erkki. 1946. *Struktur und Entwicklung der ostlappischen Quantitätssysteme.* [Mémoires de la Société Finno-ougrienne 88.] Suomalais-ugrilainen seura.
- Itkonen, Erkki. 1986–1991. *Inarilappisches Wörterbuch.* [Lexica Societatis Fenno-Ugricae 20.] Helsinki: Suomalais-ugrilainen seura. 4 volumes.
- Sammallahti, Pekka. 1998. *The Saami Languages. An Introduction.* Karasjok: Davvi Girji OS.