A Metrical Phonology Analysis of Manchu Stress

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Introduction

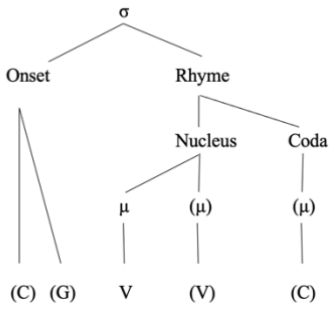
Previous analyses of Manchu stress, beginning in the 19th century, have been marked by inconsistencies and a lack of precision, frequently attributing stress to syllables in fixed positions without considering the internal structure or stress-related characteristics of these syllables (Gorelova, 2002; Joseph, 2018; Möllendorff, 1892; Norman, 2013; Zakharove, 1879). These analyses were largely based on fragmented descriptions rather than a coherent framework, resulting in conflicting and limited understandings of the stress system. This research introduces a metrical phonology approach based on 2023 fieldwork data in the Sanjiazi village of this critically endangered language, Manchu. The proposed analysis features a left-to-right parsing system with moraic trochee feet and a right-end rule, while also addressing the interaction between suffixes and stress through extrametricality.

Data and Analysis

To begin with, the analysis argues that Manchu is a weight-sensitive language, where closed syllables (CVC) attract stress due to their heavier weight compared to open syllables (CV). Syllables containing two or more moras (μ) are heavy (H) and ones containing one mora are light (L). Based on the data collected by the author in 2023, stress is confirmed phonologically by processes such as syncope of unstressed syllables such as in /tʰu.lur.ˈki.tə/ → /tʰul.ˈki.tə/ 'outside', and phonetically by longer duration, higher pitch, and increased intensity of the stressed syllable.

Furthermore, the analysis shows weight by position in spoken Manchu, where contextually dependent weight is assigned to consonants (Hayes, 1995). For example, in /ˈhas.kʰə/ 'left', /ˈtʰukʰ.su/ 'village', and /u.ˈlun/ 'belly', coda consonants, rather than onset, add moraic weight, affecting stress placement. The moraic representation of syllables in spoken Manchu is demonstrated in Figure 1[1].

Figure 1 The moraic representation of syllables



Building on the moraic representation, this analysis argues that spoken Manchu has a moraic trochee foot type, which has a left-edge prosodic prominence. Evidence for this includes consistent stress assignment to the first syllable in disyllabic words with light syllables, e.g., /ˈsa.tə/ 'old', and to heavy syllables in words like /ʈʂi.ˈʈʂʰən/ 'eat' and /ˈvəi.tɕʰi/ 'door'. Thus, in Manchu, two legit syllable types can form moraic trochee foot: ˈLL and ˈH. Moreover, the parsing direction is left-to-right, as demonstrated in LLL words like /ˈpi.tʰə.kʰə/ 'book', where stress consistently falls on the initial syllable, supporting the (ˈLL)L parsing rather than right-to-left L(ˈLL) parsing[2]. Following this, a right-edge stress pattern is proposed based on final syllable stress for words containing two feet, as seen in (LL)(ˈH) structures like /tʰu.lu.ˈkun/ 'plow'.

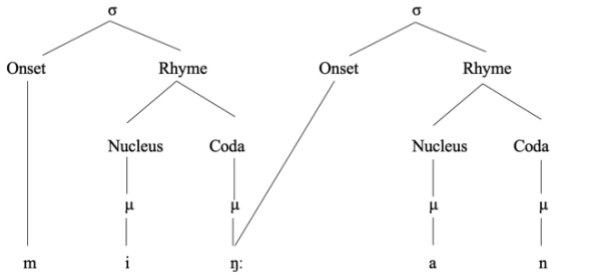
[1] G is the shorthand for glides. Parentheses in the figure indicate optionality in syllable structures.
[2] Parentheses indicate foot formation here.

(1)	end rule			X	
	feet	(x	.)	(x	.)
	weight	L	L	L	L
	mora	μ	μ	μ	μ
	syllable	CV	CV	CV	CV
	segment	ku	lu	ˈma	kə

The proposed rules for Manchu stress effectively account for the stress patterns in a wide range of words. To demonstrate the adequacy of the left-to-right parsing with moraic trochee feet and the right-end rule[3], a detailed analysis outlining the step-by-step process of stress assignment for word /ku.lu.ˈma.kə/ ‘rabbit’ is shown in (1).

The current metrical phonology framework also highlights the role of morphology in Manchu stress assignment. A class of morphemes is identified for the first time as extrametrical. For example, the suffix /miə/ is represented in the metrical analysis as <H>[4], rather than participating in the stress assignment process as a heavy syllable and forming a foot (H). The extrametrical status of this morpheme is supported by evidence encompassing various syllable structures: LLˈLL<H>, ˈLLL<H>, LˈHL<H>, HˈLL<H>, HˈH<H>, ˈHL<H>, and ˈH<H>. For example, in /fə.tʰi.ˈkʰə.lə.miə/ ‘to kick’, where stress is placed on the antepenultimate syllable, can be elegantly analysed as (LL)(ˈLL)<H>, rather than *(LL)(LL)(ˈH).

Figure 2 The representation of geminate /ŋ:/, exemplified by word /miŋ:an/ ‘thousand’



Finally, the current stress analysis effectively accounts for a variety of stress patterns, such as words with geminates, which have one underlying segment while linked to two separate syllables (Leben, 1980). Figure 2 illustrates the underlying representation of geminates and the stress of the word is placed on the second syllable, as predicted by the metrical analysis (H)(ˈH). The analysis also accommodates other word structures involving geminates, such as ˈHL (/ˈsaŋ:a/ ‘hole’), HˈH (/tʰɔŋ:ˈun/ ‘chest’), HˈLL (/ɕiŋ:ˈələ/ ‘mouse’), and LˈHL (/ɕiliŋ:a/ ‘saliva’), thereby supporting the validity of the metrical stress analysis and affirming the geminate representation.

Conclusion

This study significantly enhances our understanding of Manchu stress patterns through a refined metrical phonology framework, utilizing data from 2023 fieldwork. By introducing a left-to-right parsing system with moraic trochee feet and a right-end rule, the study addresses previous inconsistencies and accurately predicts stress placement in geminates. It also highlights the role of morphology in stress assignment by identifying the suffix /miə/ as extrametrical for the first time. This application of metrical phonology to Manchu stress is pioneering. Additionally, it explores the interaction between morphology and phonology in an agglutinative language, contributing to narrowing a critical gap in stress research for Tungusic languages, which remains underexplored but highly promising.

[3] “End Rule” selects out a peripheral foot for main stress (Prince, 1983). In Manchu, the rightmost foot is promoted by the right end rule.

[4] <H> represents extrametricality introduced by the suffix /miə/.

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