NEUTRAL TONE OF LUOSHAN DIALECT
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1. Introduction

Luoshan is a small county with long history and brilliant culture. Lying in south Henan Province, it covers an area about 3000 square kilometers, with a constant population of about 200,000. Few materials on the tones of Luoshan Dialect (LSD) have been found. It is a pity that up to now no literature describing the neutral tone behavior in the dialect was found, and the mentioned above two are all that have been found in LSD.

2. Phonetic Experiment

2.1 Tones of Citation Syllables

Experiment results show that T1 is a high-falling tone. T2 in isolation is inherently a high convex tone, instead of a high-level as is reported in the Record (1987). T3 is a rising tone. While for T4, aurally it may appear as a simple low tone, which coincides with my result with T4 in connected speech, but through acoustic experiment it is found that T4 in isolation is a low tone with inner accent. Pitch values and durations are shown in the Table 1.

Table 1: Duration and Pitch Value: Citation Tones

<table>
<thead>
<tr>
<th>Item</th>
<th>T1</th>
<th>T2</th>
<th>T3</th>
<th>T4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duratio (ms)</td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>Pitch Value</td>
<td>Example</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Pitch values and durations of the patterns S+N and S+N+N are presented as follows:

2.2 The Neutral Tone in LSD

Sequences with neutral syllables in pattern S-N (stressed tone + neutral tone) and S-N+S are recorded. The deliberate choice of the pattern is to discover the influence the stressed syllables have on the neutral ones in both preceding and following positions.

2.2.1 The Neutral Tone in Disyllabic Sequences

In sequences with neutral tones, stressed syllables remain their tones intact as compared with the neutral ones. This is a constraint put forward by Jiao (2004).

3.1 OT Analysis of the Neutral Tone in S+N and S+N+N patterns in LSD

3.1.1 Constraints

1. Mora-Tone Mapping (*M-T for short)
2. Stress-Stability (Str-Stab for short)
3. IDENT-OO(T-f)
4. Consecutive Same Toneme Constraint (*XX.X.XX for short) (X=H or L)
5. High Neutral Tone Constraint (*HN for short)
6. H in-between Level Tones Constraint (*LT.H.LT for short)

Following the previous strategies and procedures in constraint-ranking, the hierarchy of the constraints here is shown as: *M-T >> Str-Stab >> *HN >> *LT.H.LT >> IDENT-OO(T-f) >> *XX.X.XX >> *LT.LT.H.

3.2 Ranking of Constraints

In the analysis of the neutral tones, phonological theory — Optimality Theory is employed. Six constraints are used, three faithfulness and three markedness. While in dealing with the S+N+S trisyllabic phrases, the end point of the intermediate neutral tone has something to do with the tonal category of the following syllable. Generally speaking, the end point of the neutral tone gains “L” as its default value, and this is phonological. In the pattern S+N+N, the neutral tone behaves similarly to that of S+N, with the starting point of the first neutral tone co-articulating with the end point of the preceding one, which is in the phonetic domain. While in disyllabic phrases, the end point of the neutral tone gains “L” as its default value, and this is phonological. In the pattern S-N+S, the starting point of the intermediate neutral tone has something to do with the tonal category of the following syllable. Generally speaking, the end point of the neutral tone gains “L” as its default value, and this is phonological. In the pattern S-N+N, the neutral tone behaves similarly to that of S-N, with the starting point of the first neutral tone co-articulating with the end point of the preceding one, which is in the phonetic domain.

4.4 Conclusions

Citation tones, neutral tones in disyllabic and trisyllabic sequences are examined in this thesis. Generally viewed, the neutral tone in LSD is determined by both phonetics and phonology. In both disyllabic and trisyllabic phrases, the starting point of the neutral tone is in co-articulation with the ending point of the preceding one, which is in the phonetic domain. While in disyllabic phrases, the end point of the neutral tone gains “L” as its default value, and this is phonological. In the pattern S-N+S trisyllabic phrases, the end point of the intermediate neutral tone has something to do with the tonal category of the following syllable. Generally speaking, the end point of the neutral tone gets the same value as the starting point of the following stressed tone. This phenomenon is also in the domain of phonology. As in the pattern S-N+N, the neutral tone behaves similarly to that of S-N, with the starting point of the first neutral tone co-articulating with the end point of the preceding tone, while the end point of the final neutral tone is consistently L.

In the analysis of the neutral tones, phonological theory — Optimality Theory is employed. Six constraints are used, three faithfulness and three markedness. While in dealing with the S+N+N pattern, some uncertainty remains. To account for the same tonal feature of the end point of the neutral tone with the starting point of the following stressed tone, another constraint is formulated: LNH, which states that neutral tone cannot be L before H. It requires that morae should and must be linked to single tonal features. This constraint states that neutral tone cannot have the tonal feature H in final position.

3.2 Ranking of Constraints

Following the previous strategies and procedures in constraint-ranking, the hierarchy of the constraints here is shown as: v-T, Str-Stab>>*XX.X.XX>>LT.H.LT >> IDENT-OO(T-f) >> HN>> *M-T >> *HN >> *XX.X.XX >> *LT.LT.H.

4. Conclusion

In the analysis of the neutral tones, phonological theory — Optimality Theory is employed. Six constraints are used, three faithfulness and three markedness. While in dealing with the S+N+N pattern, some uncertainty remains. To account for the same tonal feature of the end point of the neutral tone with the starting point of the following stressed tone, another constraint is formulated: LNH, which states that neutral tone cannot be L before H. It requires that morae should and must be linked to single tonal features. This constraint states that neutral tone cannot have the tonal feature H in final position. Since only the end point of the neutral tone in S+N+N pattern and that of the final neutral tone in S-N+N patterns are of phonological concern, and they all get default feature L, the above two constraints do not outrank each other.

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In sequences with neutral tones, stressed syllables remain their tones intact as compared with the neutral ones. This is a constraint put forward by Jiao (2004).

3. IDENT-OO(T-f) states that tonal feature of the neutral syllable in output form corresponds to the tightly adjacent one carried by the following stressed syllable. This constraint is a development of Correspondence Theory, which maximizes the phonological identity between tonal related output form.

4. Consecutive Same Tone Constraint (*XX.X.XX for short) (X=H or L)

Five same tones can never appear consecutively together in the output. So the combinations like HHHHH and LLLL.L are banned from surface form. It is another example of OCP.

5. High Neutral Tone Constraint (*HN for short)

This constraint states that neutral tone cannot have the tonal feature H. It requires that morae should and must be linked to single tonal features. This constraint states that neutral tone cannot have the tonal feature H in final position.

5. High Neutral Tone Constraint (*HN for short)

This constraint states that neutral tone cannot have the tonal feature L. It requires that morae should and must be linked to single tonal features. This constraint states that neutral tone cannot have the tonal feature L in final position.

6. H in-between Level Tones Constraint (*LT.LT.H for short)

This constraint states that H cannot appear in-between level tones. So HHHHH, LLLL.H, L.LLLL.H and H.LLLL.L are all violations of it.

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