INTRODUCTION

Reduction as a contrast-enhancement mechanism in OT:
- LIC-NONCORNER/Stress (Crosswhite, 1999);
- N-WAY-CONTRAST, SPACEF12=N (Padgett, 1997).

Reduction as a prominence alignment mechanism:
- *a/ð >> *e, o/ð >> *e, o/ð (Crosswhite, 1999)
- *i, u/ð >> *e, o/ð >> *e, o/ð (Kenstowicz, 2010)

Reduction via tensing is predictable and expected. However, previous claims regarding a pattern of reduction via laxing in BP motivate three questions:
1) Is there really reduction via laxing in northern dialects of BP?
2) How can this be accounted for?
3) What are the theoretical implications of such a pattern?

BACKGROUND AND METHODS

Vowel System in Brazilian Portuguese
- a) Stressed (d): /i, e, a, o, u/
- b) Unstressed word-final (o): /i, a, u/
- c) Unstressed word-internal

Non-final Postonic (σ_{nfp}) (Santana, 2016)
- Lax-mid vowels are the result of regressive harmony (eg. paw.pe.bra eyelid);
- Tense-mid vowels result of mid-vowel neutralization (eg. tfi.ke.tfi ticket)

Word-initial syllables (σ_i)
- 20 speakers of BP’s x 56 words in carrier sentence x randomly repeated 3x.
- ANOVA (F1 value) and Chi-square (category assigned by investigator).

RESULTS

Front vowels Back vowels

<table>
<thead>
<tr>
<th></th>
<th>e</th>
<th>o</th>
<th>i</th>
<th></th>
<th>e</th>
<th>o</th>
<th>i</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>e</td>
<td>55%</td>
<td>41.7%</td>
<td>3.3%</td>
<td>e</td>
<td>59.8%</td>
<td>39.1%</td>
<td>1.1%</td>
<td>e</td>
</tr>
<tr>
<td>u</td>
<td>55%</td>
<td>41.7%</td>
<td>3.3%</td>
<td>u</td>
<td>59.8%</td>
<td>39.1%</td>
<td>1.1%</td>
<td>u</td>
</tr>
<tr>
<td>Total: 1680 tokens</td>
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</tbody>
</table>

Lax-mid are more frequent than tense-mid vowels. eg. [xe./vi.tej] ‘magazine’ [xe./vi.te]

<table>
<thead>
<tr>
<th>σ_{nfp}</th>
<th>σ_i</th>
</tr>
</thead>
<tbody>
<tr>
<td>σ_{nfp} [i, e, a, o, u/</td>
<td>σ_i [i, e, a, o, u/</td>
</tr>
<tr>
<td>σ_{nfp} [i, e, a, o, u/</td>
<td>σ_i [i, e, a, o, u/</td>
</tr>
</tbody>
</table>

FORMALIZATION

Reduction via laxing results from an interaction between contrast enhancement and prominence alignment types of neutralization.

i e o u
- Corner vowels are protected due to Contrast enhancement constraints
- LIC-NONCORNER/Stress does not have this ability: Corner vowels are not protected. Mid vowels are penalized.

N-way contrast: maintain a number n of contrasts
Space Constraints: any two segments contrasting in F1 differ by at least 1/nth of the full F1 range (Padgett, 1997)

<table>
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<tr>
<th>σ_i [i, e, a, o, u/</th>
<th>σ_{nfp} [i, e, a, o, u/</th>
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<td>σ_i [i, e, a, o, u/</td>
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</tr>
</tbody>
</table>

THEORETICAL IMPLICATIONS

- Prominence alignment selects [e, o] in more prominent contexts and [e, o] in less prominent contexts with inverse ranking.

- Higher ranked constraints driving harmony capture the overall tendency

REFERENCES


