Homework: Vowel Sequences in a Japanese Dialect

Due Thurs. 1/31 in class

1. Introduction

This problem is about a regional dialect of Japanese. Assume that this dialect has the following vowel inventory.

<table>
<thead>
<tr>
<th>Short</th>
<th>Long</th>
</tr>
</thead>
<tbody>
<tr>
<td>i</td>
<td>i:</td>
</tr>
<tr>
<td>u</td>
<td>u:</td>
</tr>
<tr>
<td>e</td>
<td>e:</td>
</tr>
<tr>
<td>o</td>
<td>o:</td>
</tr>
<tr>
<td>a</td>
<td>a:</td>
</tr>
</tbody>
</table>

Please assuming the following features for vowel quality:

<table>
<thead>
<tr>
<th></th>
<th>high</th>
<th>low</th>
<th>front</th>
<th>back</th>
</tr>
</thead>
<tbody>
<tr>
<td>i</td>
<td>+</td>
<td>−</td>
<td>+</td>
<td>−</td>
</tr>
<tr>
<td>e</td>
<td>−</td>
<td>−</td>
<td>+</td>
<td>−</td>
</tr>
<tr>
<td>a</td>
<td>−</td>
<td>+</td>
<td>−</td>
<td>−</td>
</tr>
<tr>
<td>o</td>
<td>−</td>
<td>−</td>
<td>−</td>
<td>+</td>
</tr>
<tr>
<td>u</td>
<td>+</td>
<td>−</td>
<td>−</td>
<td>+</td>
</tr>
<tr>
<td>j</td>
<td>+</td>
<td>−</td>
<td>+</td>
<td>−</td>
</tr>
<tr>
<td>w</td>
<td>+</td>
<td>−</td>
<td>−</td>
<td>+</td>
</tr>
</tbody>
</table>

There are extensive phonological alternations that arise when the Accusative case is added to a nouns. For purposes of this problem, assume that the underlying representation of this suffix is /-o/. In other words, the dialect has a rule of inflectional morphology that informally looks like this:

\[ X \rightarrow Xo \quad \text{when } [+\text{accusative}] \]

For the underlying representation of the stems, you may use the isolation form.

Write up in prose form an OT analysis of these data. I would like you to check your answer with OTSoft—please include suitable bits of program output to justify your answer (simple text clips are ok; use Courier font so they’re legible). In your write-up, include tableaux for these forms: 1. [soraa], 19. [sarː], 26. [nagainoː], 32. [kirjoː], 36. [meʃuː]
Here are the inputs and candidates from my own OTSoft file, which only depicts the essential part of each form:\(^1\)

/e-o/ \(\emptyset\) joː, oː, eo, eː, juː

/i-o/ \(\emptyset\) juː, joː, io, u, o, iː, eː

/a-o/ \(\emptyset\) aː, ao, o, woː

/u-o/ \(\emptyset\) uː, uo, woː, oː

/o-o/ \(\emptyset\) oː

/ji-o/ \(\emptyset\) ŋuː, ŋjuː, ŋjoː, ŋio, ŋoː, ŋiː, ŋeː

Be sure your analysis can handle the candidates just given, but also feel free to add more candidates.

2. Remarks and hints

2.1 Source

This problem is taken from the research of an outstanding phonologist but I would like you to invent your own answer rather than Googling his/hers…

2.2 Hints

The answer I made up assumed a massively autosegmental representation in which all feature values can be spread, deleted, and moved, with Faithfulness constraints varying on three parameters:

- MAX vs. IDENT. MAX is violated if you lose the value entirely. IDENT is violated if you either lose the value or dock it onto some other docking site. Docking sites are assume to be little X’s, one per segment. Examples:

\[
\begin{array}{cccccccc}
| & | & | & | & | & | & | \\
\text{k} & \text{a} & \text{n} & \text{e} & \text{k} & \text{a} & \text{n} & \text{j} & \text{o} \\
\end{array}
\]

or perhaps:\(^2\)

\[
\begin{array}{ccccccc}
| & | & \& & | & | & | \\
\text{k} & \text{a} & \text{n} & \text{i} & \text{o} \\
\end{array}
\]

---

\(^1\) These are IPA forms; of course in the text file I used ad hoc expedients like S or :.

\(^2\) The multiply-linked X for [nj] would be a palatalized [nʲ]. Many sources on Japanese describe it thus.
• DEP is violated when there is a new docking site added, as in the first version of [kanjo:] above.
• MAX and IDENT for just one value is allowed—penalizing just the + to − change, or just the + to − change, or you can also use the classical version that penalizes both directions.
• MAX and IDENT can be limited to stem segments (often, stem segments or features survive where affix segments or features do not).

2.3 Writeup

Please do use the ranking argument facility for OTSoft—it will produce safe ranking arguments, also nice tiny tableaux that will serve to illustrate your analysis. Paste these into your text in Courier font.

At the end of your writeup, please place an appendix pasting in every single tableau. I doubt I will read this but I may consult it if I’m unsure about your analysis.

2.4 Various other hints

• Hiatus seems to be tolerated (for at least a few vowel sequences) in stems. I suggest you ignore this; we’ll cover possible treatments later on.

2.5 Remark

We will return to this problem later, once when we have finished covering covered theories of type variation—so for now, following the glorious tradition of phonology problem sets, all of the exceptional forms have been suppressed.
3. Main set of data—regular forms

3.1 Stems ending in [e]

<table>
<thead>
<tr>
<th>Stem</th>
<th>Accusative</th>
<th>gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>[kane]</td>
<td>[kanjo:]</td>
<td>‘money’</td>
</tr>
<tr>
<td>[ume]</td>
<td>[umjo:]</td>
<td>‘plum’</td>
</tr>
<tr>
<td>[hatake]</td>
<td>[hatakjo:]</td>
<td>‘field’</td>
</tr>
<tr>
<td>[kire]</td>
<td>[kirjo:]</td>
<td>‘slice’</td>
</tr>
<tr>
<td>[mae]</td>
<td>[majo:]</td>
<td>‘front’</td>
</tr>
</tbody>
</table>

3.2 Stems ending in [i]

<table>
<thead>
<tr>
<th>Stem</th>
<th>Accusative</th>
<th>gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>[kaki]</td>
<td>[kakju:]</td>
<td>‘persimmon’</td>
</tr>
<tr>
<td>[kari]</td>
<td>[karju:]</td>
<td>‘debt’</td>
</tr>
<tr>
<td>[nani]</td>
<td>[nanju:]</td>
<td>‘what’</td>
</tr>
<tr>
<td>[dehairi]</td>
<td>[dehairju:]</td>
<td>‘in and out’</td>
</tr>
<tr>
<td>[hanabi]</td>
<td>[hanabju:]</td>
<td>‘firework’</td>
</tr>
<tr>
<td>[taaramomi]</td>
<td>[taaramomju:]</td>
<td>‘packaged rice seeds’</td>
</tr>
<tr>
<td>[toʃi]</td>
<td>[toʃu:]</td>
<td>‘age’</td>
</tr>
<tr>
<td>[hari]</td>
<td>[harju:]</td>
<td>‘needle’</td>
</tr>
<tr>
<td>[tori]</td>
<td>[torju:]</td>
<td>‘bird’</td>
</tr>
<tr>
<td>[meʃi]</td>
<td>[meʃu:]</td>
<td>‘meal’</td>
</tr>
<tr>
<td>[dottʃi]</td>
<td>[dottʃu:]</td>
<td>‘which’</td>
</tr>
<tr>
<td>[mikoʃi]</td>
<td>[mikoʃu:]</td>
<td>‘portable shrine’</td>
</tr>
<tr>
<td>[uʃi]</td>
<td>[uʃu:]</td>
<td>‘cow’</td>
</tr>
</tbody>
</table>

3.3 Stems ending in /a/

<table>
<thead>
<tr>
<th>Stem</th>
<th>Accusative</th>
<th>gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>[sora]</td>
<td>[soraa]</td>
<td>‘sky’</td>
</tr>
<tr>
<td>[tama]</td>
<td>[tamaa]</td>
<td>‘ball’</td>
</tr>
<tr>
<td>[hadaka]</td>
<td>[hadakaa]</td>
<td>‘naked body’</td>
</tr>
<tr>
<td>[makekata]</td>
<td>[makekataa]</td>
<td>‘way of losing’</td>
</tr>
<tr>
<td>[hana]</td>
<td>[hanaa]</td>
<td>‘flower’</td>
</tr>
<tr>
<td>[nawa]</td>
<td>[nawaa]</td>
<td>‘rope’</td>
</tr>
<tr>
<td>[taba]</td>
<td>[tabaa]</td>
<td>‘bundle’</td>
</tr>
</tbody>
</table>
26. [wara] [waraa] ‘straw’
27. [naginata] [naginataa] ‘long sword’
28. [arahira] [arahiraa] ‘a kind of dance’
29. [budo:dana] [budo:danaa] ‘vine stands’
30. [mekata] [mekataa] ‘weight’
31. [abura] [aburaa] ‘oil’
32. [kega] [kegaa] ‘wound’
33. [kagura] [kaguraa] ‘divine dance’
34. [tawara] [tawaraa] ‘rice package’
35. [sandaara] [sandaaraa] ‘rice package’
36. [ʃita] [ʃi:taa] ‘tongue’

3.4 *Stems ending in [u]*

<table>
<thead>
<tr>
<th>Stem</th>
<th>Accusative</th>
<th>gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>37. [sar] [sar:u]</td>
<td>‘monkey’</td>
<td></td>
</tr>
<tr>
<td>38. [maku] [mak:u]</td>
<td>‘screen’</td>
<td></td>
</tr>
<tr>
<td>39. [mizu] [mizu:u]</td>
<td>‘water’</td>
<td></td>
</tr>
<tr>
<td>40. [rosoku] [rosoku:u]</td>
<td>‘candle’</td>
<td></td>
</tr>
<tr>
<td>41. [waragutsu] [waragutsu:u]</td>
<td>‘straw shoes’</td>
<td></td>
</tr>
<tr>
<td>42. [retasu] [retasu:u]</td>
<td>‘lettuce’</td>
<td></td>
</tr>
<tr>
<td>43. [haiku] [haiku:u]</td>
<td>‘haiku’</td>
<td></td>
</tr>
</tbody>
</table>

3.5 *Stems ending in [o]*

<table>
<thead>
<tr>
<th>Stem</th>
<th>Accusative</th>
<th>gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>44. [nagaino] [nagaino:u]</td>
<td>‘long one’</td>
<td></td>
</tr>
<tr>
<td>45. [ohuro] [ohuro:u]</td>
<td>‘bath’</td>
<td></td>
</tr>
<tr>
<td>46. [ijiko] [ijiko:u]</td>
<td>‘stone powder’</td>
<td></td>
</tr>
</tbody>
</table>