Turkish Final Devoicing
Sample phonology homework write-up

(Notes:
The data set provided uses the “Americanist” transcription system in which [ ü ] = IPA [ y ], [ s ] = IPA [ f ], [ ç ] = IPA [ ʧ ], and [ j ] = IPA [ ʤ ]. In this write-up IPA symbols will be used.

The instructions to the problem ask only for an analysis, and do not specify that derivations be included. However, in this sample write-up, I have included a section on derivations as a model for you.)

Morphological analysis and alternants

From this data, it appears that Turkish words can consist of a root alone (e.g. [ip] ‘rope’), or root + suffix (e.g. [ip-i] ‘rope’ (psd.). There is a possessive suffix in this data, which alternates as follows: -[i] ~ -[ı] ~ -[u] ~ -[y].

There are both alternating and non-alternating roots in the data. The alternating roots end in stops or affricates which differ in voicing:

[sebep] ~ [sebeb] ‘reason’
[ʃarap] ~ [ʃarab] ‘wine’
[kanat] ~ [kanad] ‘wing’
[kurt] ~ [kurd] ‘worm’
[ahmet] ~ [ahmed] ‘Ahmed’
[pabuʧ] ~ [pabuʤ] ‘slipper’
[gyʧ] ~ [gyʤ] ‘power’
[renk] ~ [reng] ‘color’

The non-alternating roots are:

[ip] ‘rope’
[kep] ‘cap’
[ʃeref] ‘honor’
[bit] ‘louse’
[pilot] ‘pilot’
[demet] ‘bunch’
[sepet] ‘baskent’
[sanat] ‘art’
[kıtf] ‘rump’
[saʧ] ‘hair’

Distribution of alternants of alternating morphemes

The voiced and voiceless final alternating roots in the data are in complementary distribution. Alternants ending in voiceless consonants are always word-final, whereas alternants ending in voiced consonants are always followed by a vowel:
Possible analyses of alternating morphemes

There are two possible analyses of the alternating roots. A representative root like [sebep] ~ [sebeb] ‘reason’ could be underlyingly /sebep/ or it could be /sebeb/.

If the underlying representation is /sebeb/, then it would be necessary to posit a rule of Final devoicing, to account for the final voiceless consonant word-finally:

C --> [-voiced / ___ #]

Alternatively, if the UR is /sebep/, then it would be necessary to posit a rule of Pre-vocalic voicing, to account for the voiced consonant which appears before the possessive suffix:

C --> [+voiced] / ___ + V

It would be necessary to restrict Pre-vocalic voicing to apply only when the following vowel is separated from the root by a morpheme boundary, since there is no general pre-vocalic voicing, as seen in a root like [sepet] ‘basket’.

Superiority of Final devoicing analysis

The rule of Pre-vocalic voicing is slightly more complex than the rule of Final devoicing, but basically either analysis is adequate as a description of the alternating roots. However, as a description of all the data provided (non-alternating as well as alternating roots), only the analysis with Final devoicing is adequate. The analysis with Pre-vocalic voicing predicts that all morpheme-final consonants are voiced before a vowel belonging to a different morpheme. However, a form like [p-i] ‘rope’ (psd.) indicates that the analysis with Pre-vocalic voicing is not tenable. According to the rule of Pre-vocalic voicing there should not be a [p] before the suffix vowel.

URs of morphemes

URs of all the data provided are shown next. Notice that there is an underlying root-final contrast in voicing of stops and affricates in Turkish (/sebeb/ vs. /kep/), just as there is initially (/bit/ vs. /pilot/) and medially (/sebeb/ vs. /sepet/):

/sebeb/ ‘reason’
/jarab/ ‘wine’
However, word-finally the contrast is neutralized in favor of the voiceless phonemes by the rule of Final devoicing.

**Derivations**

There are four types of forms in this data: alternating roots, suffixed and unsuffixed; and non-alternating roots, suffixed and unsuffixed. One derivation of each type of form is included here to illustrate how the analysis works.

Derivations of a non-alternating root are shown first for the root /ip/ ‘rope’. (The possessed suffix appears to be simply a high vowel---that is all the various alternants have in common phonologically. The effect of an assumed Vowel Assimilation rule which completely specifies the possessed suffix vowel’s features is also shown in the derivation.) Final Devoicing applies vacuously to the final consonant of the non-possessed root (i.e., the rule applies, because the form meets the structural description of the rule, but the rule has no phonetic effect).

<table>
<thead>
<tr>
<th>UR</th>
<th>/ip/ ‘rope’</th>
<th>/ip-V/ ‘rope’ (psd.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Final Devoicing</td>
<td>p</td>
<td>[+high]</td>
</tr>
</tbody>
</table>

(V Assim.)

<table>
<thead>
<tr>
<th>PR</th>
<th>[ip]</th>
</tr>
</thead>
<tbody>
<tr>
<td>[ipi]</td>
<td></td>
</tr>
</tbody>
</table>

The possessed form does not meet the structural description of Final Devoicing because that form contains no word-final consonants.

Derivations of an alternating root, /sebeb/ ‘reason’, are shown next:
UR  /sebeb/ ‘reason’  /sebeb-V/ ‘rope’ (psd.) [+high]
Final Devoicing  p
(V Assim.  i)
PR  [sebep]  [sebebi]

The unsuffixed root again meets the structural description of Final Devoicing, and this time the final consonant undergoes a phonetic change, becoming voiceless.