Class 5: Principles of rule application

To do
• Read Anderson ch. 10 and Kiparsky 1973 (SQs due Tuesday).
• Finish Sudanese assignment (due Tuesday).

Overview: Multiple application
The basic problem to be dealt with today is what to do with a form that, for some rule A → B / X__Y, contains multiple instances of XAY, either because XAY straightforwardly occurs twice in the form, or because there are multiple ways of interpreting XAY (e.g., it contains parentheses).

1. Multiple, non-overlapping matches
SPE p. 344: “To apply a rule, the entire string is first scanned for segments that satisfy the environmental constraints of the rule. After all such segments have been identified in the string, the changes required by the rule are applied simultaneously.”

Example: Remember Palauan vowel reduction and stress from last time?
○ How would those rules apply to an underlying representation like /ʔabiŋal/?

2. Multiple matches: one instance’s target is another’s environment
Example: optional schwa deletion French (data originally from Dell 1970)

/oʊvʊnɪɾ/ → [ʊvʊnɪɾ] or [ʊvnɪɾ] ‘to remember’
/pəsəɾa/ → [pəsəɾa] or [pasɾa] ‘will pass’
/pɑrvʊnɪɾ/ → [parvʊnɪɾ] *[parvnɪɾ] ‘to reach’
/sufləɾa/ → [suflora] *[sufhra] ‘will blow’
/əɾɪ#dəɾɛ#partɪɾ/ → [əɾɪ#dəɾɛ#partɪɾ] or [əɾɪ#dɛɾ#partɪɾ] ‘Henri had to go’
/ʒak#dəɾɛ#partɪɾ/ → [ʒak#dəɾɛ#partɪɾ] *[ʒak#dɛɾ#partɪɾ] ‘Jacques had to go’

○ Write a rule for schwa deletion.

○ What does the quote from SPE above predict for this form: /ty#dəɾəɾe/ ‘you were becoming’

○ Actual result is [ty#dəɾəɾe] or [ty#dvəɾe] or [ty#dəɾe], but not *[ty#dvne]—discuss.

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**Example from Colin Wilson**: Woleian

merame ‘moon’  maremali ‘moon of’
metai ‘my eyes’  matemami ‘our eyes’
yefar ‘shoulder’  yaferai ‘our shoulders’

final-V raising: \( V \rightarrow [-\text{low}] / \underline{\_} \# \)

dissimilation: \( V \rightarrow [-\text{low}] / \underline{\_} \text{C}_0 [-\text{cons}] \)

- What does the quote from SPE above say should happen to /marama+li/?

### 3. Possible solution I: directional application

Left-to-right: Scan the string for the leftmost eligible segment and apply the rule to it. Then scan the resulting form for the leftmost eligible segment, etc.

- Does this work for Woleian? French?

Right-to-left: Same thing but start with the rightmost eligible segment.

- Does this work for Woleian? French?

### 4. Possible solution II from Anderson (1974)

- Find all segments eligible for the rule and circle them.
- For each circled segment, identify the smallest environment that lets the segment meet the rule’s structural description.
- If the rule is optional, you may uncircle some of the eligible segments and forget about their environments.
- If any circled segment is contained in some other circled segment’s environment, uncircle (and forget about the environments of) as few segments as possible to get rid of these overlaps.
- Now apply the rule simultaneously to the remaining circled segments.

- What does Anderson’s proposal predict for the French string /ty#vudre#k#s#k#l#b#do#/ ‘you would like that what the beadle…’?

- Does Anderson’s proposal help with Woleian?

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5. **Tonkawa revisited**

<table>
<thead>
<tr>
<th>Vowel</th>
<th>Meaning</th>
<th>Vowel</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>/picen/</td>
<td>'he cuts it'</td>
<td>/picena/</td>
<td>'he is cutting it'</td>
</tr>
<tr>
<td>we+pcen+o?</td>
<td>'he cuts them'</td>
<td>we+pcena+n+o?</td>
<td>'he is cutting them'</td>
</tr>
<tr>
<td>ke+pcen+o?</td>
<td>'castrated one; steer'</td>
<td>ke+pcena+n+o?</td>
<td>'he is cutting me'</td>
</tr>
<tr>
<td>/notxo/</td>
<td>'he hoes it'</td>
<td>/netla/</td>
<td>'he licks it'</td>
</tr>
<tr>
<td>notx+o?</td>
<td>'he hoes them'</td>
<td>netl+o?</td>
<td>'he licks them'</td>
</tr>
<tr>
<td>ke+ntox+o?</td>
<td>'he hoes me'</td>
<td>ke+ntal+o?</td>
<td>'he licks me'</td>
</tr>
<tr>
<td>notox</td>
<td>'hoe'</td>
<td>/naxace/</td>
<td>'he makes it a fire'</td>
</tr>
<tr>
<td>we+ntox+o?</td>
<td>'he makes them a fire'</td>
<td>we+ntace+n+o?</td>
<td>'he is making it a fire'</td>
</tr>
<tr>
<td>ke+ntox+o?</td>
<td>'he makes me a fire'</td>
<td>ke+ntace+n+o?</td>
<td>'he is making me a fire'</td>
</tr>
</tbody>
</table>

- Recall K&K's syncope rule Ch. 3: V → Ø / #CVC__CV
- If we simplify the rule to V → Ø / VC__CV, what problems do we run into?

6. **Minimal vs. maximal application**

Something to think about in these and other cases of potential multiple application: is the rule applying as often as possible or as seldom as possible?

7. **More than one target because of an abbreviatory convention**

English stress in verbs and adjectives (there are exceptions, and there’s also a lot more to it…)

- evéde
- suprème
- cajóle
- defy
- caróuse
- confide

- évéd
- səpˈʃɛm
- kʰədʒoʊl
- dəfər
- kʰəɹəʊz
- kʰənfəid

- tormént
- eléct
- exist
- adápt
- collápse
- exháust

- tomément
- əlékt
- øgzíst
- ødəέpt
- kʰəlæps
- øgzást

- rélish
- cóvet
- devélop
- stólid
- kómmon
- clándéstine

- əˈlɛlʃ
- kʰávət
- dəvˈlæp
- stółid
- kʰˈáman
- kʰənˈdɛstɪn

- Formulate generalizations above the three columns. It may help to think of the traditional English distinction between long and short vowels.
Let’s translate the generalizations into a rule schema.

Expand the schema into rules.

Try applying the rules to a word from the rightmost column—what problem could arise if the rules weren’t disjunctively ordered?

Reminder: When a schema with parentheses is expanded, the resulting rules are disjunctively ordered. The $n^{th}$ subrule applies only if the $(n-1)^{th}$ was not applicable.

Because schemas with parentheses expand like this:

$$A \rightarrow B / X (Y) \underline{Z}$$
$$A \rightarrow B / XY \underline{Z}$$
$$A \rightarrow B / X \underline{Z}$$

and not in the reverse order, we could say that these schemas are greedy: they look for the longer match first.

8. Tricky case from Latvian
(Indo-European language from Latvia with 1,500,000 speakers):

- Glide formation: $[-\text{cons}] \rightarrow [-\text{syll}] / \underline{\text{____}} [+\text{syll}]$
- Truncation: $V \rightarrow \emptyset / \underline{\text{____}}$

First, remember the special convention about the + boundary: $\underline{\text{____}} Y$ is really $\underline{\text{____}} (+)Y$. That means that every rule is really a schema (can you see how?)!

Apply the rules to these cases and discuss:$^4$

- /ï̃ai+a/ ‘rides’
- /kur+iai/ ‘basket (gen. sg.)’
- /aui+a/ ‘puts on (footgear)’

$^4$ Actual outcomes: [jaj], [kurwja], [auj].

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