



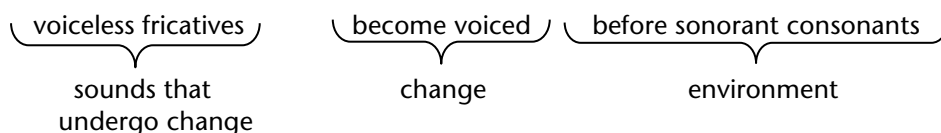
Student Resource

How to Write Phonological Rules

Rule writing is an important skill in linguistics. There are different types of rules, depending on the subfield and the type of problem one is solving. The goal is always to present material in a complete and concise manner. For phonology, this means:

- (a) designating all and only the sounds that undergo change;
- (b) precisely stating the change that occurs; and
- (c) designating the environment in which the change takes place.

One can write rules using simple prose:



However, phonologists prefer to use a simple schematic that lays it all out cleanly:

INPUT → OUTPUT / ENVIRONMENT

- The **input** is the sound (or natural class of sounds) that undergoes change
- The **output** is the particular change that the sound undergoes. (What happens to it?)
- The **environment** specifies the conditions under which the change takes place. (Where does it happen?)

Rule-writing conventions

- The underscore indicates the position of the target sounds in the environment.
- \emptyset indicates the absence of a sound, so is used to represent deletion or insertion.
 - $\emptyset \rightarrow t$ “insert a t”
 - $t \rightarrow \emptyset$ “delete a t”
- # indicates a word boundary:
 - # indicates “before a word boundary,” so at the end of the word (“word-final”).
 - # indicates “following a word boundary,” so at the beginning of the word (“word-initial”).
- **C** and **V** represent the set of all consonants and all vowels in the language, respectively.
- To specify subsets of vowels or consonants that form a natural class, use the phonetic feature that defines the class (e.g., stops, sonorants, velars, nasals, back vowels). This can be represented as a binary feature in square brackets, e.g., [+nasal] or [-nasal].
- In the output, only state the feature that undergoes change, e.g., [-voice C] → [+voice] “voiceless consonants become voiced.” There is no need to repeat the C, since it doesn’t change; see example (d) or (e) below.
- If you need to combine V or C plus a feature in square brackets, the C or V can either be typed beside it, as above, the feature c

Student Resources: How to Write Phonological Rules

- If you need to combine V or C plus a feature in square brackets, the C or V can either be typed beside it, as above, the feature can be subscripted, as in (f) below, or the C or V can be typed on a separate line above or below the feature.

Examples

a. $V \rightarrow \emptyset / \# [p] _ [t]$

“Vowels are deleted between a word-initial [p] and a [t].”

b. $\emptyset \rightarrow V / \# [p] _ [t]$

“Vowels are inserted between a word-initial [p] and a [t].”

c. $C \rightarrow [-\text{voice}] / _ \#$

“Consonants devoice in word-final position.”

d. $[\text{+stop}, -\text{voice}] \rightarrow [\text{+voice}] / _ C_{[\text{+sonorant}]}$

“Voiceless stops become voiced before sonorant consonants.”

e. $[\text{+stop}, \text{+alveolar}] \rightarrow [\text{+post-alveolar}] / V_{[\text{+high}]} _$

“Alveolar stops become post-alveolar following high vowels.”

f. $V_{[-\text{stress}]} \rightarrow \text{ə} / V_{[\text{+stress}]} C _$

“Unstressed vowels are pronounced as schwa when the preceding vowel is stressed.”