

One of the ways of forming the “plural” of a noun in English is to add the suffix /z/ to that noun. For instance, the plural form for the noun [ʃuw] (“shoe”) is [ʃuwz] (“shoes”). This suffix gets pronounced in one of two other ways, depending on the noun that it attaches to. It can be pronounced as [s], as in [ʃɪps], the plural of [ʃɪp] (“ship”). And it can come out as [ɪz], as in the plural of [dɪʃ] (“dish”): [dɪʃɪz].

Which phonological form the plural suffix has depends on the kind of sound that is at the end of the noun that it attaches to. When the plural suffix attaches to a noun that ends in a vowel, it becomes the coda of the final syllable of that noun. But when the plural suffix attaches to a noun that ends in a consonant, it has to combine with that consonant to make a coda. In these scenarios, the phonotactic constraints on English codas will kick in and determine whether the result is good or not. When the result violates the phonotactic constraints on English codas, something happens to correct the situation, and this is why we get three different forms for the plural suffix. One of two things happen:

- (1) a. Change the value for the feature [voice] on the plural suffix.
- b. Epenthesis
 Insert [ɪ] to the left of the plural suffix.

Which of these things happens depends on what phonotactic constraint is trying to be satisfied. In (2) are examples of plural forms that we will use to figure out what phonotactic constraints are relevant, and how the processes in (1) are being deployed to satisfy those constraints.

(2)

[duwz]	[beisiz]	[k ^h ʌfs]
[blʌndz]	[fɪʒiz]	[p ^h ʌps]
[ɪmz]	[p ^h ɪtʃiz]	[næts]
[t ^h owz]	[fɛziz]	[bijks]
[bowlz]	[ɛdʒiz]	[mɑθs]
[bijz]	[ɪuwʒiz]	
[deɪz]		
[k ^h ʌbz]		
[bʌgz]		
[leɪðz]		
[θiŋz]		
[muwvz]		
[skowɪz]		

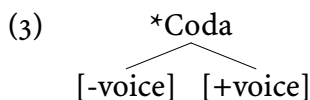
The process in (1a) is triggered by a phonotactic constraint that we have discovered in class. Based on the examples in (2), tell me what that phonotactic constraint is. The process in (1b) is triggered by a phonotactic constraint we have not yet discovered. Based on the examples in (2), formulate a phonotactic constraint on codas that triggers (1b). Finally, show me how the word [beisiz] (“bases”) is “derived.” That is, show me what the plural [beis]+suffix looks like before the processes in (1) take place, and then indicate which phonotactic constraints are violated and how (1) apply to correct the violation.

Answer:

The plural suffix is either /s/ or /z/. If it is /s/, we are not going to be able to understand why it turns into /z/ when it is attached to nouns that end in vowels. That is, there’s no obvious reason why a noun like [ɹuw] shouldn’t have a plural form like [ɹuws], if /s/ were the plural suffix. As we can see from words like [luws] (‘loose’), there is nothing about the phonotactic constraints of English that prevents codas with a single [s] in them; [ɹuws] is a perfectly good word, as far as English phonology is concerned.

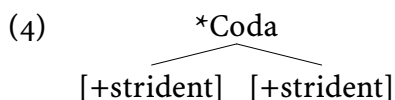
That’s why we assume that the plural suffix is /z/, and that it’s to this form that the processes in (1) apply. What we discover from the lists of plurals above is that [z] becomes [s] when the noun it attaches to ends in [f], [p], [t], [k] or [θ]. Compare this to the cases where [z] remains unchanged; in these cases, the nouns end in a vowel or [d], [m], [l], [b], [g], [ð], [ŋ], [v] or [ɹ]. A salient difference between the sounds that precede the unchanged [z] and those that precede the [z] that changes to [s] is value for the feature [voice]. The sounds that [z] stays unchanged after are all [+voice], and those that [z] becomes [s] after are all [-voice]. If we consider what would happen if [z] did not change after words ending in [-voice] sounds, we see that the result is something that violates the phonotactic constraints of English. For instance, if [z] did not change when attached to [næt] we’d get [nætz], which has the impossible coda [tz]. In our exploration of the phonotactic constraints on English codas, we discovered that the sounds that share a coda must be the same in voicing (unless one of those sounds is [+sonorant]). There is, in particular, a constraint of the form in (3) that prevents a coda from having a voiceless consonant followed

by a voiced consonant in it.



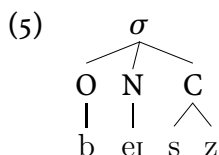
It's this phonotactic constraint that triggers (1a), then. The value of [voice] on [z] is adjusted so that it satisfies the constraint in (3).

Let's consider now the forms in which the epenthesis rule in (1b) is triggered. This happens with the nouns in the middle column, which are nouns that end with [s], [ʃ], [tʃ], [z], [ʧ] or [ʒ]. If we consider what these nouns would sound like if [z] were added to them and nothing changed, we'd get things such as [ɛʧz] and [ɪʊwʒz]. These sound (to me) like they have impossible codas — I think syllables that end with things such as [ʧz] and [ʒz] just sound impossible in English. If that is right, then there must be a phonotactic constraint that prevents the codas [ʧz], [ʒz] as well as [sz], [ʃz] and [zz], which is what would result if /z/ were added to the nouns in the middle column without epenthesis applying. What we need to do, then, is find a way of stating a phonotactic constraint that prevents codas of this sort. To do that, we need to find what is similar to the sounds [s], [ʃ], [z], [tʃ], [ʧ] and [ʒ] that makes them different from other consonants in English. As it happens, these are the [+strident] sounds in English. So a way of stating the phonotactic constraint that is responsible for blocking codas like [ʧz], [ʒz], [zz] and so on is:

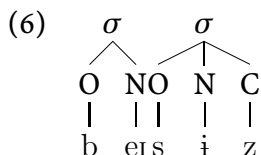


When the plural suffix [z] is added to words that end with a [+strident] sound, this phonotactic constraint will be violated. The epenthesis rule in (1b) is invoked to rescue these bad codas.

Okay, let's put this together and see how the plural noun [beɪsɪz] is derived. The noun is /beɪs/ and the plural suffix is [z], so when they are put together we get (5).



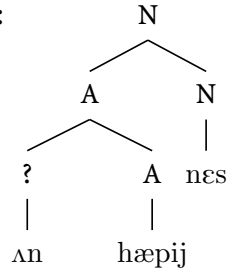
which violates both of the phonotactic constraints in (3) and (4). Epenthesis (i.e., (1b)) can apply, however, to satisfy both of these constraints. Epenthesis will form (6).



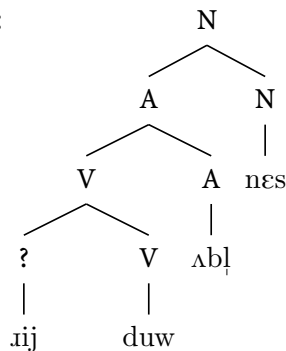
2

Show how the following words are composed from morphemes using our “tree” notation.

1. [ʌnhæpijnɛs]:



2. [iɪjdʊwʌbɫnɛs]:



3. [ʌnsɪjɪŋ]: We haven’t learned the relevant ɪŋ suffix, and so this question is ignored.

3

Based on the following example, write the rule that is responsible for prefixing [mɪs].

- (1) a. [mɪsænʌlaɪz], [mɪsθɹɔw], [mɪs.iɪjd], [mɪslɪjd],...
- b. *[mɪslɛg], *[mɪsɛlɪjɔt], *[mɪsnɪɪd], *[mɪslɪŋgwɪst]...
- c. *[mɪshæpij], *[mɪsbluw], *[mɪslɔŋ], *[mɪshaɪ]...

With this rule in hand, tell me whether [mɪs] is a derivational or inflectional prefix and, in one sentence, how this is shown by the following word:

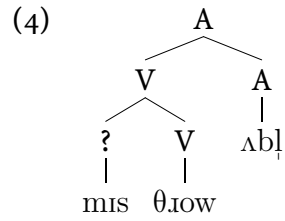
(2) [mɪsθɹɔwʌbɫ]

Answer:

From (1) we can deduce that [mɪs] prefixes onto verbs. So the rule should look something like:

(3) Insert [mɪs] / ___ V

This means that [mɪs] must have attached before [ʌbɫ] did in (2), yielding the structure in (4).



We know that [ʌbɪ] is a derivational affix, so the fact that [mis] attaches before [ʌbɪ] does allows us to deduce that [mis] must be derivational as well. We can deduce this from the law that prevents inflectional affixes from being introduced before derivational affixes.