SYLLABLE & SYLLABLE STRUCTURE

(continued)

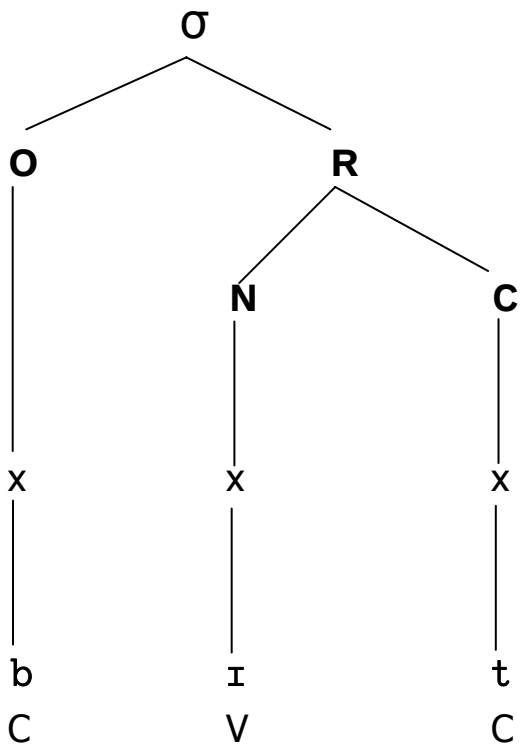
The syllables we have looked at so far are fairly simple ones.

We have not, for example, represented the difference between short and long vowels.

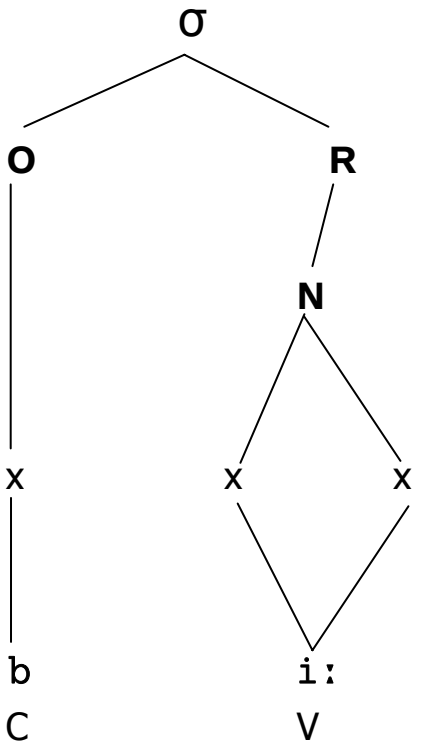
Such distinctions are represented by attaching the segments of the syllable into *timing slots* referred to as the **skeletal tier**.

In order to do this, the **nucleus is branched** and **short vowels** are represented on a **single tier** while **long vowels** (including diphthongs in English) are represented as occupying **two tiers**.
e.g.

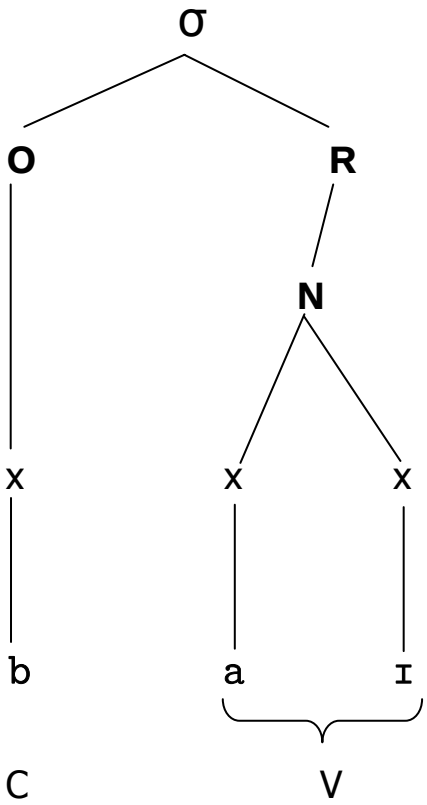
bit - /bɪt/



bee – /biː/



buy – /baɪ/



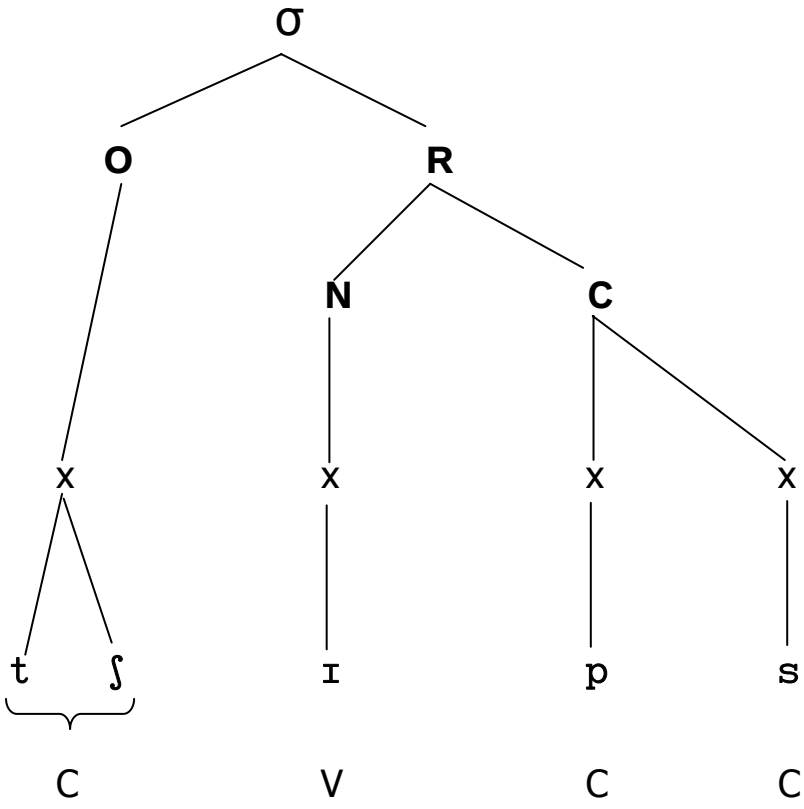
What is intended by the representations above is that **long vowels** are constituted as a **single vowel quality** which is attached to **two skeletal slots;** whereas **diphthongs** have **two** different **vowel qualities**.

The point is that nuclei with long vowels and with diphthongs are parallel with respect to the number of timing slots within the nucleus.

Using the same principle, the use of the skeletal tier enables us to identify the different consonant properties of affricates:

e.g.

chips – /tʃɪps/



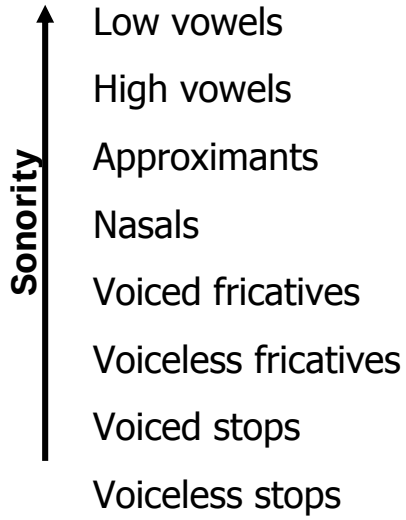
Segments such as **[tʃ]** and **[dʒ]** are called **complex segments**, since they **behave like single segments** (i.e. they occupy a single unit of timing) while having an **internal structure** which **resembles two segments**.

The Sonority Hierarchy

It is widely believed that there are both **universal** and **language specific constraints** on the form that syllables may take; i.e. constraints on the **syllabification** of sequences of segments.

There are two main universal constraints:

1. it is claimed that sequences of segments are syllabified in accordance with a **sonority scale** of the following form:



Sonority of increases from the bottom to the top of the scale

Sonority is an acoustic effect – the more sonorous a sound the more it resonates.

Applied to syllable structure, the idea is that the most sonorous element in a syllable will be located within the nucleus, and that the further one gets from the nucleus, the less sonorous are the segments.

e.g. blink - /blɪŋk/

This principle runs into some difficulty in syllables with consonant clusters involving an initial 's'

e.g. sprint - /sprɪnt/

However as it is this [s]-initial consonant cluster (which is also the only three-way branching onset in English) that violates the sonority hierarchy predictions, the principle is considered a universal one.

Maximal Onset

Maximal onset principal is also considered a universal principle of syllabification

In a word like ***appraise*** - /əpɹeɪz/, it is clear that the word is bisyllabic; the question is where the boundaries are.

We know:

/p/ may occur in coda position in English – (*cap, cup* …)

/pɹ/ is a well-formed onset in English – (*prize, preen* …)

/ɹ/ may occur alone in onset position – (*rice, raze* …)

/ pɹ/ is not a well-formed coda cluster as it violates the predictions of the sonority hierarchy.

Therefore, ***/u:pɹ/ , /sɪpɹ/*** … are ill-formed.

What we must decide then is whether the syllabification of ***appraise*** is ***/ə.pɹeɪz/*** or ***/əp.ɹeɪz/***

The principle of maximum onset says that **in cases like this**, where the language specific phonotactics will allow for two or more syllabifications across a syllable boundary, it is the syllabification which **maximizes the material in the following onset** that is preferred.

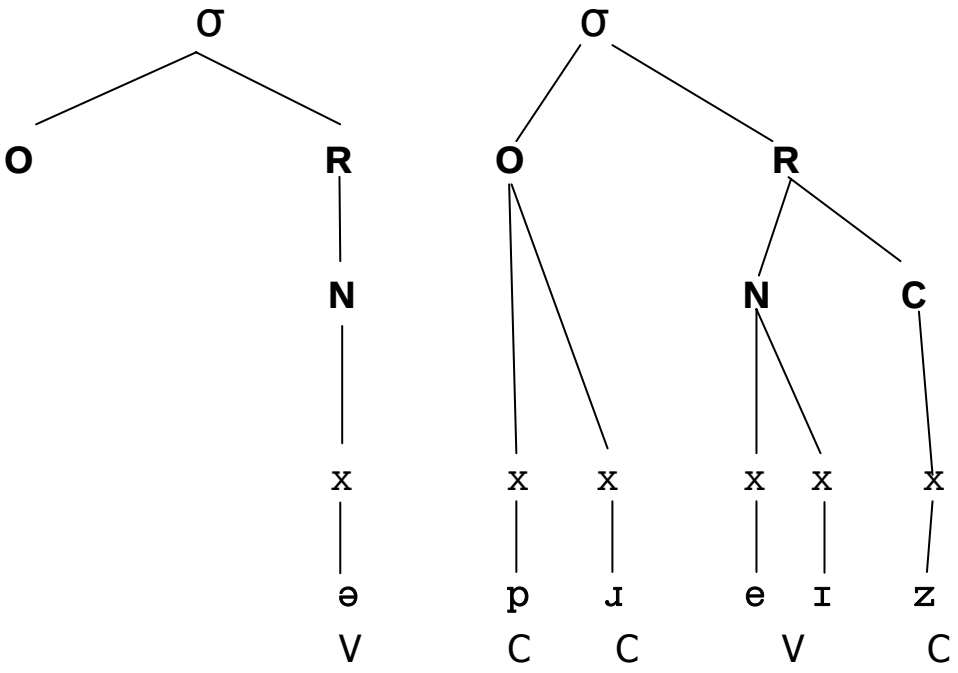
Therefore ***appraise*** is ***/ə.pɹeɪz/***

Maximum onset principle is connected with the universal fact about syllable structure that (in some sense) CV syllable structure is more basic than VC types.

Evidence for this:

- CV type syllables appear first in human children's speech
- aphasia patients start using CV type syllables first as they recover
- languages which have both onset and coda consonants typically allow a wider range of consonants in the onset position
- coda consonants are much more likely to undergo loss of articulation in the course of historical development
- there are no known languages which have VC-type syllables but lack CV-type syllables; but the reverse is not the case

Therefore the syllable structure of ***appraise – /***ə.pɹeɪz***/*** is:



Syllable Weight

Syllables in which there is **no branching within the rhyme**, either at the level of rhyme node itself or within the nucleus is called a **light syllable**.

Syllables which have **branching** anywhere **within the rhyme** constituent is called a **heavy syllable**.

At this stage, we can make two generalizations about word stress in English:

1. any stressed syllable in English is very likely to be a heavy syllable
2. monosyllabic words are unlikely to end in one of the short vowel phonemes