

CHAPTER V-THE SYLLABLE

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1. WHAT IS A SYLLABLE?

Native speakers tend to recognize a unit intermediate between the segment and the word, that is, the syllable: **the smallest possible unit of speech**. The functions of the syllable appear to be threefold: a-to carry the phonetic manifestations of the suprasegmentals, b-to be the chief domain of patterns of arrangement of phonemes, or phonotactics, and c- to act as a unit of organization in the process of speech production. Being the smallest pronounceable units, the syllables form language units of greater magnitude, that is morphemes, words and phrases. Each of these units is characterized by a certain syllabic structure.

In looking for an adequate definition of a syllable, we need to do two things. We must account for the words in which there is agreement on the number of syllables, and we must also explain why there is disagreement on some other words. It is necessary to mention that the syllable is a fairly complicated phenomenon and like the phoneme it can be studied on four levels: acoustic, articulatory, auditory and functional, which means that the syllable can be approached from different points of view. The severe complexity of the phenomenon gave rise to many theories. Let us consider some of the most current theories.

In phonetics some have attempted to identify syllables on the basis of the amount of articulatory effort needed to produce them [4, p.164]. The psychologist R.H. Stetson was one who argued that each syllable corresponds to an increase in air pressure, air from the lungs being released as a series of chest pulses – the **pulse or motor** theory of syllable production. This theory is based on the assumption that expiration in speech is a pulsating process and each syllable should correspond to a single expiration so that the number of the syllables in an utterance is determined by the number of expirations made in the production of the utterance.

Another theory most often referred to is the theory of syllable put forward by O. Jespersen [4, p.164]. It is generally called the **prominence theory** and is based on the concept of sonority. This defines the syllable in auditory terms, arguing that some sounds (vowels) are intrinsically more sonorous than other, and that each peak of sonority corresponds to the centre of a syllable. According to O. Jespersen each sound is characterized by a certain **degree of sonority** which is understood as acoustic property of a sound that determines its perceptibility. According to this sound property a ranking of speech sounds could be

established. This starts with the open vowels as the most sonorous, continues through the close vowels, the sonorants, the voiced fricatives, the voiced plosives, the voiceless fricatives and ends with the voiceless plosives as the least sonorous. In any sequence the most sonorous sounds tend to form the center of the syllable and the least sonorous — the marginal segments. Thus in the word **plant**, for example, the sequence passes from the minimally sonorous [p], through [l] with a greater degree of sonority to the maximum sonorous [a:]. It continues with decreasing sonority through [n] to a second minimum with [t]:

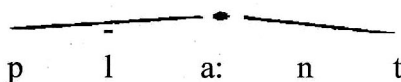


Figure V.1: Sonority diagram of the word *plant*

It is true that this principle seems to be very general but there are, on the other hand, syllables in many languages which contradict it.

Further experimental work aimed at the description of the syllable as a phonetic phenomenon resulted in a lot of other theories, such as F. de Saussure's theory, the theory of the Rumanian linguist A. Rosetti, and the theory of the Czech linguist B. Hala [26].

Phonological views of the syllable focus on the way sounds combine in a language to produce typical sequences [4, p.164]. Two classes of sound are established: sounds that can occur on their own, or are at the centre of a sequence of sounds (vowels (V)); and those that can not occur on their own, or at the edge of a sequence (consonants (C)). Typical sequences include CV, CVC, CCVC... The syllable, in this view, takes its place as an important abstract unit in explaining the way vowels and consonants are organized within a sound system.

It is perfectly obvious that the syllable is by no means a simple concept. No phonetician has succeeded so far in giving an exhaustive and adequate explanation of what the syllable is. The difficulties seem to arise from the various possibilities of approach to the unit. We could say there exist two points of view:

a- Some linguists consider the syllable to be a purely articulatory unit which lacks any functional value. They define the syllable in terms of properties of sounds, such as sonority or prominence.

b- However, the majority of linguists treat the syllable as the smallest pronounceable unit which can reveal some linguistic functions. The syllable is considered as a unit of organization and planning of the sounds of an utterance.

The definition of the syllable from the functional point of view existing in modern linguistics tends to single out the following features of the syllable:

a- a syllable is a chain of phonemes of varying length;

b- a syllable is constructed on the basis of contrast of its constituents (which is usually of vowel-consonant type);

c- the nucleus of a syllable is a vowel, the presence of consonants is optional; there are no languages in which vowels are not used as syllable nuclei, however, there are languages in which this function is performed by consonants;

d- the distribution of phonemes in the syllabic structure follows the rules which are specific enough for a particular language.

Perhaps the most likely theory is that the syllable arises from the alternating opening and closing of the vocal tract during speech, resulting in an alteration of vowel-like and consonant-like articulations. The consonantal articulations, especially plosives, are often signaled phonetically as modifications to the vowel-like articulations, and this results in the typical structure of the syllable – consonants grouped around a vowel. All languages have syllables of the form V, in addition, many languages have patterns of greater complexity, with CVC being the most frequent.

The central position of the syllable, occupied by the V(owel) element, is normally referred to as the “**peak**” (sometimes the “**nucleus**”). Most of consonants are marginal. The sound which forms the peak or the center of a syllable is called the **syllabic sound**. All vowels and some of the consonants are syllabic. Most of the consonants are non-syllabic (asyllabic).

A syllable is the smallest possible unit of speech [17, p.248].

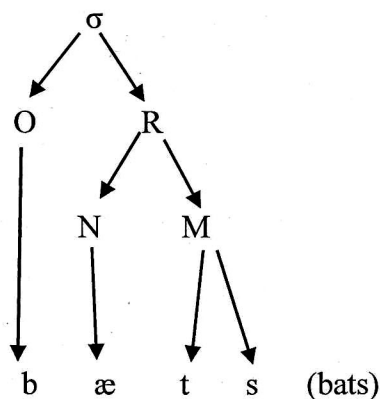
The syllable may be defined as one or more speech-sounds forming a single uninterrupted unit of utterance which may be a whole word, e.g. man /mæn/, /ai/ or part of it, e.g. morning /mɔ:. niŋ/ [27, p.86].

2. SYLLABLE FORMATION

2.1. The representation of syllable structure [14, pp.153-157]

The syllable has received a very considerable amount of attention from phonologists, especially in recent years, and a number of alternative models of the syllable have been offered.

Many phonologists designed a branching, hierarchical syllable structure. For a traditional structuralist statement of this position see Pike (1967) and Pulgram (1970). More recently, writers like Kiparsky (1979), Halle and Vergnaud (1980), Steriade (1982) and Harris (1983) have presented an improved version of the hierarchical branching theory in the framework of a **Multi-Tiered Phonological Theory**. In this view, syllable structure can be represented as follows:



(Note: σ = syllable, O = onset, R = rhyme, N = nucleus and M = margin)

Figure V.2: Multi-Tiered Syllable Structure [14, p.154]

Another model – that of Hyman (1985) has a different way of thinking. Hyman suggests that the core of phonological representations consists of rhythmic **WEIGHT UNITS** rather than onsets and rhymes or C and V slots proposed by other writers. Segments have weight units associated with them underlying. But only associations between weight units and vowels tend to survive to the surface. Normally consonants lose their weight units and re-associated with the weight unit of an adjacent vowel by the syllabification rules. Only those segments whose association with a weight unit is preserved to the end of a derivation are syllabic.

Most current work in theoretical phonology assumes a model that incorporates a **CV-tier** (Consonant – Vowel tier) in terms of which the canonical forms of morphemes are stated. Precursors of this approach are Hockett (1947) and Abercrombie (1967).

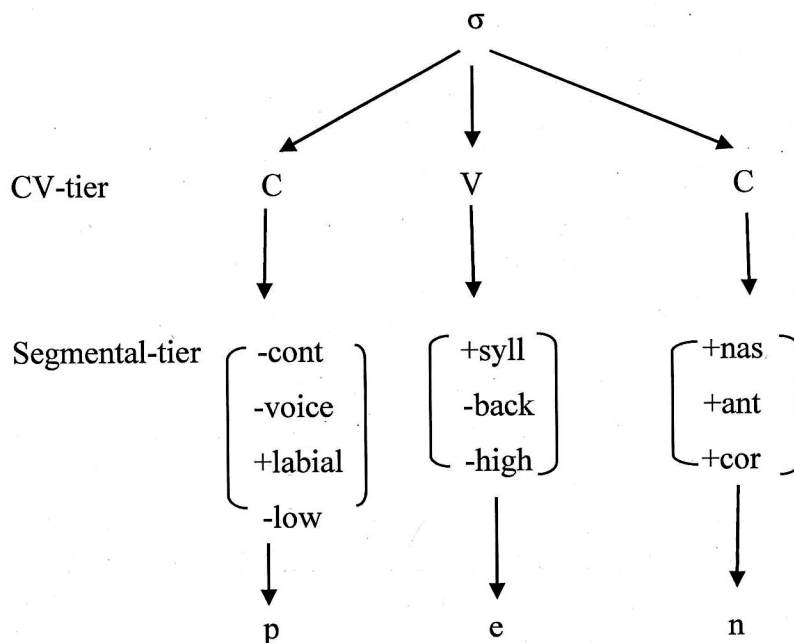


Figure V.3: CV-tier Syllable Structure [14, p.157]

A V element of the CV-tier represents a syllable **NUCLEUS**, i.e. peak of sonority while a C element represents a syllable **ONSET** or **MARGIN**, i.e. an element which is not the peak.

One of the functions of the syllable in all languages is defining syllabicity for segments. Any segment dominated by a C-element of the CV-tier is nonsyllabic while any segment dominated by a V-element is syllabic. An interesting consequence of this model is that it obviates the need for the feature [syllabic]: the V element of the CV-tier is the constituent of the syllable that contains the **SONORITY PEAK**.

According to Peter Ladefoged [17, p.248], a syllable can be divided into its **onset** and **rhyme**. The rhyming part of a syllable consists of the vowel and any consonants that come after it. Any consonants before the rhyme form the onset of the syllable. The rhyme of a syllable can be further divided into the nucleus, which is the vocalic part, and the **coda**, which consists of any consonants.

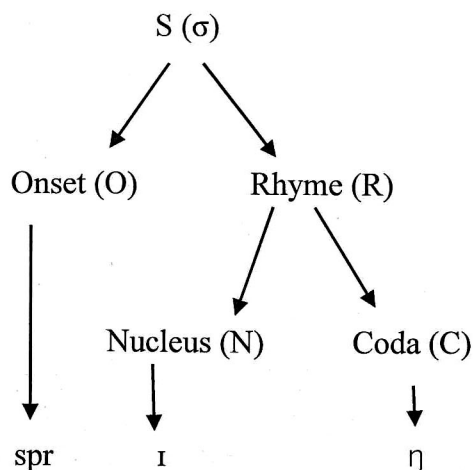


Figure V.4: Syllable Structure

A complete description of a syllable requires four sub-syllabic units. The **nucleus (N)** is the syllable's only obligatory member. It is a vocalic segment that forms the core of a syllable. The **coda** consists of those segments that follow the nucleus in the same syllable. The **rhyme (R)** is made up of the nucleus and coda. The **onset (O)** is made up of those segments that precede the rhyme in the same syllable. [17, p.243]

In the English language there are minimum syllables which are formed by a single vowel sound in isolation, e.g. *are* /a:/, or /ɔ:/. There are syllables which have an **onset** and **nucleus**, e.g. *bar* /ba:/, *key* /ki:/. There are syllables which have no **onset** but have a **coda**, e.g. *am* /æm/, *ease* /i:z/. Other syllables have both **onset** and **coda**, e.g. *run* /rʌn/, *fill* /fɪl/.

Consonants which can occur as the onset are: a-all single consonant phonemes except /ŋ/, b-plosive plus approximant other than /j/, c-voiceless fricative plus approximant other than /j/, d-consonant plus /j/ (before /u:/ or /ʊr/), e-/s/ plus voiceless plosive, f-/s/ plus nasal other than /ŋ/, g-/s/ plus voiceless fricative, h-/s/ plus voiceless plosive plus approximant, i-/s/ plus voiceless fricative plus approximant.

The following can occur as the nucleus : a-all vowels and b-syllabic consonants

Consonants which can occur as the coda are: a-the single consonant phonemes except /h/, /w/, /j/ and, in non-rhotic varieties, /r/, b-lateral approximant + plosive or affricate, c-in rhotic varieties, /r/ + plosive or affricate, d-lateral approximant + fricative, e-in rhotic varieties, /r/ + fricative, f-lateral approximant + nasal, g-in rhotic varieties, /r/ + nasal or lateral, h-nasal + homorganic plosive or affricate, i-nasal + fricative, j-Voiceless fricative + voiceless plosive, k-two voiceless fricatives, l-two voiceless plosives, m-plosive + voiceless fricative, n-lateral approximant + two consonants, o-in rhotic varieties, /r/ + two consonants, p-nasal + homorganic plosive + plosive or fricative, q-three obstruents [33].

2.2. Syllable formation

The sequences of sounds that can make up a syllable differ from language to language and are strictly limited within each language. In the case of the English language there is a

wide variety of syllable types, the two main types of which are **a-Co-3 + V + Co-4** and **b-C + syllabic C**. Thus, in English, the syllable can be formed by:

a-by any vowel (V),

e.g. or, are, I

b-by one vowel preceded by one consonant (CV),

e.g. core, car

c-by one vowel followed by one consonant (VC),

e.g. ought, art

d-by one vowel both preceded and followed by (one) consonant(s),

e.g. hit, man

e-by a word-final syllabic lateral /l/ or nasal /m, n/ immediately preceded by a consonant,

e.g. [pl] (as in *people*), [dn] (as in *garden*)

Not every language allows so wide a variety of syllable types as English does. In fact, the preferred syllable type among the world's languages is CV, the CVC and V. Different languages have different preferred structures of the syllable.

The rules that characterize permissible syllable structures in a language are called phonotactic constraints, and they determine what constitutes a possible syllable.

According to Peter Roach [23, p.61], the structure of the syllable is as follows:

Pre-initial Initial Post-initial Vowel Pre-final Final Post-final1 Post-final2 Post-final3

Onset

Coda

e.g. spring, texts

3. CLOSED AND OPEN SYLLABLES [27, p.88]

3.1. Open syllable

A syllable which ends in a vowel is called an open syllable,

e.g. he, wri-ter

3.2. Closed syllable

A syllable which ends in a consonant is called a closed syllable,

e.g. it, man

4. SYLLABLE DIVISION

4.1. Syllabification Rules

The division of English words into syllables is governed by the following principal rules:

RULE 1: The English a-long vowels, b- diphthongs, and c- unstressed vowels always occur in a phonetically open syllable when they are separated from the following syllabic (that form a syllable) sound by only one consonant,

e.g. 1. 'me.ter, 'ar.my

2. 'fa.ces, 'voi.ces

3. 'Ger.ma.ny, 'or.di.na.ri.ly

RULE 2: A short stressed vowel when separated from a following syllabic sound by only one consonant, always occurs in a closed syllable, although it is difficult to tell where the point of syllable division actually is: after the consonant or within it,

e.g. 'study, 'body.

4.2. Syllabic ambiguity

Correct syllable division at the junction of words, however, is very important in English, as wrong syllable division in this case may lead to the confusion of one word with another. Sometimes, it is difficult to say whether a consonant is the coda of one syllable or the onset of another. Thus, syllable division can lead to the case of syllabic ambiguity. One example is the sequence of sounds /ʃ i: s ə: ð ə m i: t/ which can be read as *She saw them eat* or *She saw the meat* depending on correct syllable division of the sound sequence /ð ə m i: t/. It is difficult for us to divide a word such as *happy* into syllables. Some people say it is [hæ.pi]; other regard it as [hæp.i]. Another solution is to consider the [p] as belonging to both syllables, and to call it **ambisyllabic**. Other examples of syllabic ambiguity can be found with syllable division in the words which contain either a diphthong or a triphthong. Another examples are the syllable division in words such as *higher* and *hire*. *Higher* and *hire* are, in most English dialects, the same sound. But I think the tendency would be to count *higher* as two syllables and to count *hire* as one syllable, based on how they are spelled.

5. STRONG AND WEAK SYLLABLES [23, pp.75-82]

What do we mean by strong and weak syllables? In the present context, we are using these terms to refer to phonetic characteristics of the syllable. The most important thing to note at present is that any strong syllable will have as its centre one of the vowel phonemes (or possibly a triphthong), but not /ə/. Weak syllables, on the other hand, as they are being defined here, can only have four types of centre:

5.1. The vowel /ə/ (“schwa”)

The sound /ə/ can be

5.1.1. Spelt with a,

e.g. *attend*, *character*, *barrack*

5.1.2. Spelt with ar,

e.g. *particular*, *molar*, *monarchy*

5.1.3. Adjectival endings spelt with ate,

e.g. *intimate*, *accurate*, *desolate*

5.1.4. Spelt with o,

e.g. *tomorrow*, *potato*, *carrot*

5.1.5. Spelt with or,

e.g. *forget*, *ambassador*, *opportunity*

5.1.6. Spelt with e,

e.g. *settlement*, *violet*, *postmen*

5.1.7. Spelt with er,

e.g. *perhaps*, *stronger*, *superman*

5.1.8. Spelt with u,

e.g. *Autumn*, *support*

5.1.9. Spelt with ough,

e.g. *thorough*, *borough*

5.1.10. Spelt with ous,

e.g. *gracious*, *callous*

5.2. Close front vowels (in the general region of i: and ɪ): [i],

e.g. *easy* [i:zi], *busy* [bizi]

5.3. Close back vowels (in the general region of u: and ʊ): [u],

e.g. *you* [ju], *to* [tu], *do* [du]

5.4. Syllabic consonants: [m, n, l, r, ŋ]

e.g. *bottle* [bɒtl], *garden* [ga: dn], *happen* [hæpŋ / m], *history* [hisrɪ]

CHAPTER V EXERCISES

I-Questions for Discussion:

- 1-How is the syllable defined?
- 2-What is the internal structure of an English syllable?
- 3-What can an English syllable be formed by?
- 4-What syllable is called phonetically open syllable? Closed syllable?
- 5-What are the rules of dividing the English word into syllable?
- 6-What is the difference between weak and strong syllables?

II- T / F: Decide whether the following statements are true or false:

- 1-The syllable may be defined as one or more speech sounds, forming a word or part of a word, containing one vowel sound, with or without a consonant or consonants, and uttered at a single effort.
- 2-The full internal structure of a phoneme consists of onset and coda.
- 3-In the word *spring*, /i:/ is the nucleus.
- 4-*Beautiful* is a word of two syllables.
- 5-The syllable structure of *learn* is CVC.
- 6-*Voiceless* is a word with the point of syllable division right after the sound /s/.
- 7-A weak syllable is the one which might end in a syllabic consonant.
- 8-*Or* is a syllable made up of one phoneme.
- 9-A syllable which ends in a vowel is called a closed syllable.
- 10-Correct syllable division is very important in communication.

III- Multiple Choice: Choose the best answer:

1	The.....may be defined as one or more speech sounds forming a word or part of a word, containing one vowel sound, with or without a consonant (or consonants), and uttered at a single effort.			
	A-syllable	B-phoneme	C-intonation	D-morpheme
2	Which syllable is formed by a vowel?			
	A-sky	B-seem	C-or	D-hit
3	Which syllable is formed by a vowel+a consonant?			
	A-she	B-eat	C-sit	d-or
4	Which syllable is formed by a consonant+a vowel?			
	A-she	B-eat	C-it	d-eye
5	Which syllable is formed by a consonant+a vowel + a consonant?			
	A-he	B-eat	C-sit	d-eye
6	Which word contains a syllabic consonant?			
	A-meat	B-seat	C-run	D-little
7	In English, a syllable is generally not formed by.....			
	A- a vowel	B-Consonant+vowel	C-Vowel+consonant	D-two stops
8	Which word contains a syllabic consonant?			
	A-meat	B-seat	C-run	D-little
9	How many syllables are there in the word <i>garden</i> ?			
	A-1	B-2	C-3	D-4

10	Which of the following syllable division is correct?			
	A-Ger.ma.ny	B-Germ.any	C-German.y	D-Ger.many
11	Which of the following syllable is an open syllable?			
	A-she	B-it	C-at	D-eat
12	Which of the following syllable has the structure of Vowel?			
	A-talk	B-learn	C-or	D-at
13	Which of the following syllable has the structure of Consonant+Vowel?			
	A-learn	B-sea	C-sit	D-at
14	<p>Which of the following rules govern the syllable division of the word <i>study</i>?</p> <p>A-The English long vowels always occur in a phonetically open syllable when they are separated from a following syllabic sound by only one consonant.</p> <p>B-The English diphthongs always occur in a phonetically open syllable when they are separated from a following syllabic sound by only one consonant.</p> <p>C-The English unstressed vowels always occur in a phonetically open syllable when they are separated from a following syllabic sound by only one consonant.</p> <p>D-A short stressed vowel when separated from a following syllabic sound by only one consonant always occurs in a closed syllable, although it is difficult to tell where the point of syllable division is.</p>			
15	Which of the following syllable has the full structure of onset-nucleus-coda?			
	A-sit	B-are	C-or	D-I
16	Which consonant cluster is the coda in the word <i>streets</i> ?			
	A-sr	B-tr	C-str	D-ts
17	How many syllables are there in the word <i>ordinarily</i> ?			
	A-2	B-3	C-4	D-5
18	Which of the following words contains a syllable of the type C+syllabic C?			
	A-little	B-read	C-can	D-eye
19	Which of the following syllables is an open syllable?			
	A-meat	B-reach	C-do	D-sit
20	Which of the following syllables is a closed syllable?			
	A-me	B-heart	C-oh	D-sit

IV- How many syllables are there in these words:

Wonderful, beautiful, English, infertile, season