The syllable in English

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Abstract

The paper is about the syllable in Eng lish . It tries to investigate the nature and structure of the syllable .the paper comprises four sections . Section one presents a definition of the syllable . examines the nature of the syllable , states a notion of the time of the syllable and shows syllabification . Section two is devoted to the explanation of the structure of the syllable in English . Each syllable structure is fully explained with examples . These structures include the simple syllable , onset +vowel , vowel +coda, onset + vowel +coda and syllabic consonants . Section three provides a discussion of strong and weak syllables in English together with the way the can be characterized . Section four is devoted to a conclusion of the paper .

1. The syllable

1.1 Definition

The syllable is a fundamentally important unit both in phonetics and in phonology. It is a good idea to keep phonetic notions of the syllable separate from phonological ones. Phonetically we can observe that the flow of speech typically consists of an alternation between **vowel**-like states (where the vocal tract is comparatively open and unobstructed) and **consonant**-like states where some obstruction to the airflow is made. Silence and **pause** are to be regarded as being of consonantal type in this case. From the acoustic point of view, this means that the speech signal shows a series of peaks of energy (roughly in the frequency range 500-3000 Hz.) corresponding to vowel-like state separated by troughs of lower energy. However, this view of the syllable appears often not to fit the facts when we look at the phonemic structure of syllables and at speakers views about them. One of the most important areas is that of **syllabic consonants**.

Phonologists are interested in the structure of the syllable, since it appears to be the interesting observation to be made about which phonemes may occur at the beginning, in the middle and at the end of syllables. The study of sequences of phonemes is called **phonotactics**, and it seems that the phonotactic possibilities of a language are determined by the syllabic structure; this means that any sequence of sounds that a native speaker produces can be broken down into syllables without any segments being left over. For example, in 'their strengths triumphed frequently', we find the rather daunting sequences of consonant phonemes / ŋθstr / and / mftfr /, but using what we know of English phonotactics we can split these

cluster into one part that belongs to the end of one syllable and another part that belongs to the beginning of another. Thus the first one can only be divided / ŋθ ׀ str / or / ŋθs ׀ tr / and the second can only be / mft ׀ fr /. Phonological treatments of syllable structure usually call the first part of a syllable the **onset**, the middle part the **peak** and the end part the **coda**; the combination of peak and coda is called the **rhyme**. These are explained more fully under separate headings.

Syllables are claimed to be the most basic units in speech: every language has syllables, and babies learn to produce the syllable before they can manage to say a word of their native language. When a person has a speech disorder, their speech will still display syllabic organization, and slips of the tongue also show that syllabic regularity tends to be preserved even in "faulty" speech (Roach, 2002: 76).

The syllable is a unit of pronunciation typically larger than a single sound and smaller than a word. A word may be pronounced 'syllable at a time', as in *ne-ver-the-less*, and a good dictionary will indicate where these **syllabic divisions** occur in writing, thus providing information about how a word may be hyphenated. The notion of syllable , in short , is very real to **NATIVE SPEAKERS**, and is often used in a quasi-technical sense in everyday conversation (e.g. Shall I put it in words of one syllable?). **Syllabification** is the term which refers to division of a word into syllables; **resyllabification** refers to a **REANALYSIS** which alters the location of syllable boundaries. A word containing a single syllable is called a **monosyllable**; if it contains more than one, the term **polysyllable** is used (**or monosyllabic word** / **polysyllabic word** respectively).

Providing a precise definition of the syllable is not an easy task, and there are several theories in both **PHONETICS** and **PHONOLOGY** which have tried to clarify matters. From a phonetic viewpoint, attempts have been made to define the syllables of a **LANGUAGE** on the basis of the articulatory effort needed in order to

produce them. When argued that each syllable corresponds to an increase in air pressure, air from the lungs being released as a series of chest pulses. This can often be readily felt and measured, particularly in emphatic speech; but it is also often difficult to detect such a pulse in adjacent syllables, as when two **VOWELS** co-occur, e.g. going(which has two syllables, but usually said in a single muscular effort). An alternative phonetic approach attempts to define the syllable in auditory terms: the **PROMINENCE** theory argues that, in a **STRING** of sounds, some are intrinsically more 'sonorous' than others, and that each 'peak' of **SONORITY** corresponds to the center of a syllable. These peaks are best illustrated by vowels, which have the greater carrying-power. The less sonorous sounds provide 'valleys' of prominence, and are best illustrated by the closures and narrowing which produce consonants.

This approach gives a useful general guideline, but it does not always indicate clearly where the boundary between adjacent syllables falls, e.g. in *husker*, the problem of whether to split the word as *hus-ker*, *hu-sker* or *husk-er* is not answerable using arguments based on perceived sonority. The problem remains, even if other acoustic features than sonority (such as pitch or length) are incorporated within the notion of prominence, but has been specifically addressed in some phonological theories (notably **METRICAL PHOMOLOGY**).

Phonetic approaches of this kind attempt to provide a definition of the syllable valid for all languages, and it is possible that more valid definitions in terms of speech production or perception will emerge. Phonological views of the syllables, on the other hand, focus on the ways sounds combine in individual languages to produce typical **SEQUENCES**. Here, two classes of sounds are usually established: sounds which can occur on their own, or at the center of a sequence of sounds, and sounds Which cannot occur on their own, or which occur at the edges of a sequence

of sounds. The former include such sounds as [i],[a],[u], etc., and are generally referred to as **VOWELS**; the later include such sounds as [p],[g],[f],[tʃ], etc., and are generally referred to as **CONSONANTS**. A consonant-vowel (CV) sequence is a pattern which seems to be found in all languages: because the syllable is not 'closed' by another consonant, this type of syllable is often called an **open syllable** type. A CVC pattern is also very common in English. In such a case, the following terminology is widely used:

The opening segment of a syllable = **the onset**,

The closing segment of the syllable = **the coda**,

The central segment of the syllable = **the center** or **nucleus**.

A useful collective term for the opening and closing segment is the **MARGINS** (or **EDGES**) of the syllable. In **METRICAL PHONOLOGY**, the nucleus and coda are viewed as a single constituent of syllable structure, called the **rhyme** (or **rime**), and coda are viewed as a single constituent of syllable structure, called the rhyme (or rime), and syllables are distinguished phonologically in terms of their **WEIGHT**.

In this way, for instance, one can identify the various **CLUSTER** of segments which may occur at syllable margins, such as CV (*say*), CCV(*play*), CCCV(*stray*), etc. Exceptional syllables can also be identified, such as those where certain consonants occur alone to form the syllable-the **NASALS** and **LATERALS** in words such as button [bʌtn] and bottle [bɒtl], where [,] indicates that the final consonant is a **syllabic consonant.**

The notion of syllable is widely used elsewhere in phonology, e.g. in relation to **PROSODY** and cross-linguistic studies of **RHYTHM** (see **SYLLABLE-TIMED** language). In the **DISTINCTIVE FEATURE** theory of phonology proposed by Chomsky and Halle (see Chomsky), syllabic is used to replace the earlier term

'vocalic', referring to all segments constituting a syllabic nucleus. Vowels, liquids and nasal would be [+ syllabic] ([+syll]); all other segments would be [-syll].

In later approaches to phonology, the nation of syllable has become increasingly important, especially in models of **NON-LINEAR PHONOLOGY**. Here, syllabification and (resyllabification) are interpreted in relation to questions of **REPRESENTATION**- how and at what point syllable structure is assigned to strings in a **DERIVATION**, and which phonological rules are involved in syllabification. Several models recognize a prosodic **HIERARCHY** in which the syllable plays a role: in **PROSODIC MORPHOLOGY**, for example, it is level above the **MRA** and below the **FOOT** (Crystal, 2003: 447- 8- 9).

We might ask first whether syllables are phonetically definable, as all phonological constructs should be. This claimed that syllables correlate with bursts of activity of the intercostals muscles ('chest pulses'), the speaker emitting one syllable at a time, as independent muscular gestures. But subsequent experimental work has shown no such simple correlation; whatever syllables are, they are not **SIMPLE** motor units.

We are still far from any phonetic definition, that speech is produced in measured bursts of **initiator power**, or **feet,** which are the basic rhythmic units of a language. (the'initiator' is normally the pulmonic egressive machinery.) In English, for example, each initiator-burst corresponds to a stressed syllable, and the intervals between stressed syllables are (all things being equal) roughly equal (Lass, 1998: 248).

The syllable is a combination of sounds with a vowel (pure vowel or diphthong) as the nucleus (center) is called a syllable. The following words consist of one syllable only:

book , pen , come , in , wide .

The following words have two syllables :

Win dow , black board , play ing

A syllable can, however, be a vowel sound only. Examine these monosyllabic (one – syllable) words: a , air , are , ear , or .

Notice also these tow-syllable words in which one of them is a vowel sound and the other is a combination of a consonant or consonants and a vowel :

a bove , I raq , au tumn , teach er.

Sometimes the combination of certain consonants with / l / or / n / will have the length and loudness of a syllable (AL-Hamash and AL-Jubouri, 1976: 9).

1.2 Nature of the Syllable

On phonological grounds vowels and consonants have different distributions. We find a similar situation with the syllable, in that it may be defined both phonetically and phonologically. Phonetically (that is, in relation to the way we produce them and the way they sound), syllables are usually described as consisting of a center which has little or no obstruction to airflow and which sounds comparatively loud; before and after this center (that is, at the beginning and end of the syllable), there will be greater obstruction to airflow and / or less loud sound. We will now look at some examples:

i) What we might call a **minimum syllable** would be a single vowel in isolation, e.g. the words 'are' **ɑː, 'or' ɔː,** 'err' ɜː. These are preceded and followed by silence. Isolated sounds such as **m**, which we sometimes produce to indicate agreement, or ʃ, to ask for silence, must also be regarded as syllables.

ii) Some syllables have an **onset** (that is, they have more than just silence preceding the centre of the syllable):

'bar' **bɑː** 'key' **kɪː** 'more' **mɔː**

iii) Syllable may have no onset but have a **coda**:

'am' **æm** 'onght' **ɔːt** 'ease' **ɪːz**

iv) Some syllable have onset and coda:

'run' **rʌn** 'sat' **sæt** 'fill' **fɪl** (Roach, 2002: 70).

Vowels and consonants typically do not act alone; there are very few words or word-like noises which consist of only one sound (they include *I, eye, oh, m*). The vast majority of English words contain a combination of vowels (V) and consonants (C), such as CV (*go*), VC (*up*), CVC (*cat*), CCVCC (*stops*), and CCCV (*screw*). The combined units are called *syllable*s. In the above examples the words each contain only one such unit, and are thus often called *monosyllables,* or *monosyllabic words*. This notion contrasts with words that contain more than one syllable (*poly - syllabic words*) – most of the words in the language, in fact. The present sentence contains instances of a tow syllable (disyllabic) word, *despite*/dɪspɑːt/ (CVCCVC), and a three – syllable (trisyllabic) word, *instances* /ɪnstɑnsɪz/ (VCCCVCCVC), and the previous sentence has a five – syllable word, *polysyllabic* /pɔlɪːsɪlabɪk/,which despite its length has a simple syllabic structure(CVCVCVCVCVC).

People know about syllable. 'Not another syllable!' we may say to someone who is protesting too much. And if we want to emphasize a point, or speak plainly, we may well try 'to put it in words of one syllable'. People are also able to count the number of syllables in a word, by beating out its rhythm. The rule is basically simple: each syllable contain one vowel or vowel-like nucleus. The word *despite* has tow such nuclei, so there are tow syllables. The word *polysyllabic* has five nuclei, so there are five syllables (Crystal, 2004: 246).

1.3 Time of Syllable

Roach (2002: 76) States that a language in which all syllables tend to have an equal time value in the rhythm of the language are said to be syllable-timed; this tendency is contrasted with *stress-timing*, where the time between stressed syllables is said to tend be equal irrespective of the number of unstressed syllables in between. Spanish and French are often claimed to be syllable-timed; many phoneticians, however, doubt whether any language is truly syllable-timed.

Crystal (2003: 449) States that the term "syllable-timed" is a very general term used in **PHONETICS** to characterize the pronunciation of **LANGUAGES** displaying a particular type of **RHYTHM**; it is opposed to **STRESS-TIMED** languages. In syllable-timed languages, the **SYLLABLES** are said to occur at regular intervals of time, as in French; this characteristic is sometimes referred to as **isosyllabism** or **isosyllabicity.** However, very little work has been done on the accuracy or general applicability of such properties, and the usefulness of the typology has been questioned.

On the other hand, we might ask first whether syllables are phonetically definable, as all phonological constructs should be. This claimed that syllables correlate with bursts of activity of the intercostals muscles (‘chest pulses’), the speaker emitting syllable one at a time, as independent muscular gestures. But subsequent experimental work has shown no such simple correlation; whatever syllable are, they are not SIMPLE motor units.

Each initiator-burst is a power-curve, rising to a peak of acoustic energy, and then tailing off. We can represent English stress-timing by superimposing a schematic curve over a syllable-sequence, as follows

(a) Jóhn bought	twó new	bóok there	yésterday	
(b) Jóhn	bóught tow	néw books	thére	
(c) Jóhn saw a	bláckbird	yésterday		

(Verticals represent foot-divisions.) Whereas the French equivalents of (b,c) would be more like:

Jean	a	ache	té	deux	livers	hier
Jean	a	vu	un	merle	hier	

Each language has it is own kind of **isochronism** (rhythm based on roughly equal units); the initiator-power is emitted in 'quanta', which in French generally coincide with syllables in the simple sense, in English with stressed syllables.

So the definition of 'phonetic syllable' seems reasonably straight forward for a syllable-timed language (assuming this kind of distinction is valid); but for one like English things are a bit more complex: foot boundaries may (but don't have to) coincide with syllables (Lass, 2002: 249).

1.4 Syllabification

There are still problems with this phonetic description of the syllable: an unanswered question is how we decide on the division between syllables when we find a connected sequence of them as we usually do in normal speech. We will look at two words that are good examples of this difficulty. Most English speakers feel that the word 'going' gəʊɪŋ consists of tow syllables; we could decide on phonetic grounds that the ʊin the middle is the dividing point between the two syllables, since the articulation is slightly closer to obstructing airflow than the vowels next to

it. This would not answer the question of whether the **ʊ** belongs to the first or to the second syllable; of course, we know that the **ʊ** is part of the **əʊ** diphthong phoneme, but this is a fact of phonology, not of the phonetic structure of the syllable. Another difficult case is the word 'extra' ekstrə. One problem is that by some definition the **s** in the middle, between **k** and **t,** would be counted as a syllable, which most English speakers would reject. They feel that the word has tow syllables. However, the most controversial issue relates to where the tow syllables are to be divided; the possibilities are (using the symbol. to signify a syllable boundary):

i) e.kstrə **ii)** ek.strə **iii)** eks.trə **iv)** ekst.rə **v)** ekstr.ə

How can we decide on the division? No single rule will tell us what to do without bringing up problems.

One of the most widely accepted guidelines is what is known as the **maximum onset principle.** This principle state that where two syllables are to be divided, any consonants between them should be attached to the right-hand syllable, not the left, as far as possible. If we just followed this rule, we would have to divide 'extra' as **(i)** e.kstrə, but we know that an English syllable cannot begin kstr. Our rule must therefore state that consonants are assigned to the right-hand syllable as far as possible *within the restrictions governing syllable onset and codas.* This means we that we must reject **(i)** e.kstrə because of its impossible onset, and **(**v) ekstr.ə because of its impossible coda. We then have to choose between **(ii),(iii),** and **(iv)**.The maximum onsets rule which makes us choose **(ii).** However, there are many problems still remaining. For example, in looking at isolated syllables, we never find one ending with one of the vowels **I, e, æ, ʌ, ɔ or ʊ,** so we must conclude that syllables with a short vowel and no coda do not occur in English.

One further possibility should be mentioned: when one consonant stands between vowels and it is difficult to assign the consonant to one syllable or the other – as in 'better' and ' carry' – we could say that the consonant belongs to *both* syllables. The term used by phonologists for a consonant in this situation is **ambisyllabic**. (Roach, 2002: 77)

The number of syllables in any given word would appear, at least from the data considered above, to be related to the number of vowel sounds (monophthongs and diphthongs) the word contain. If a word contains two vowel sounds, for example *exclude,* then it contains two syllables in a word. There is also a principled means by which we can identify those words which have alternative syllabifications and what those alternatives are.

Consider the word *member*, which we transcribed as /membə/. *Member* may only be syllabified as /mem.bə/, and not as either /me.mbə/ or /memb.ə/. We may arrive at an understanding of why this is so if we consider the cluster /mb/. In our discussion of the phonotactics of English, we identified the possible word-initial clusters of English. The list of possible word-initial CC clusters does not include /mb/. This is an illicit cluster, and no word or syllable may begin with this cluster. Consequently, *member* cannot be syllabified as /me.mbə/, as the second syllable would then begin with an illicit cluster. Although we did not identify or discuss the permissible word-final cluster, on English word may end with /mb/. It is both an illicit initial and an Elicit final cluster. for /mb/ the only possibility is to place the syllable boundary between the tow consonants (Kuiper, 1987: 96).

Syllabification is the term which refers to division of a word into syllables; **resyllabification** refers to a REANALYSIS which alters the location of syllable boundaries. A word containing a single syllable is called a **monosyllable**; if it

contains more than one, the term **polysyllable** is used (**or monosyllabic word** / **polysyllabic word** respectively) (Crystal, 2003: 447).

1.4.1 Phonetic Syllabification

Pronounce the following phrases.

did it	drive it	cause it
like it	catch it	close it
make it	expect it	open it

Notice how each phrase is pronounced as one unit. The final consonant of the first word tends to become the initial consonant of the second word when the second word begins with a vowel. This is called phonetic syllabification.

[dɪd ɪt] becomes [dɪ-dɪt]

[laɪk ɪt] becomes [laɪ-kɪt]

Pronounce the following phrases.

closed it	helped it	brushed it
caused it	stopped it	cashed it
changed it	kept it	watched it

Notice how each phrase is pronounced as one unit. The final consonant of the first word tends to become the initial consonant of the second word when the second word begins with a vowel. This simplifies many of the complex combinations of consonants which occur in English.

[klozd ɪt]	becomes	[kloz-dɪt]
[kɔzd ɪt]	becomes	[kɔz-dɪt]

Practice the following phrases. Pronounce each phrase as a unit, but put the final consonants of the first word of the phrase at the beginning of the next word, if that word begins with a vowel sound.

For example: [staps æt hom] becomes [stap-sæt hom]

stops at home	smiles at her	girls in here
left at home	laughs at her	students in here
helps at home	points at her	doctors in here

Pronounce the following sentences using phonetic syllabification wherever possible.

John was tried of reading they stopped at the hotel he learned all of the word (Lado and C. Frise, 1985: 143).

1.4.2 Syllabification Rule

A recursive algorithm is used to identify the set of syllables in a word. This algorithm assumes inter independence of the left most syllable to the rest syllables. The algorithm to identify the left most syllable make use of the following basic rules of the language after compressing successive vowels into one based on the above compression rule.

1- Consonant between two vowels is always an onset for the second vowel

2- Word with VC, VCC, and CVC phone sequence are monosyllable.

3- A word which consists of only CC phonemes, will insert the epenthetic vowel and form a monosyllable word CVC.

4- If the left most part of the word match the template CVCCV then CVC is taken as a left syllable.

5- If the left most part of the word satisfies the template CVCC then the left syllables may be CVC or CV depending upon the sonority of the last consonant cluster.

6- A word with CCVC sequence, where the second consonant is a liquid is monosyllable. (englishclub)**.**

2.1 Structure of the Syllable

In our discussion of the syllable, we have assumed, so far, that a syllable consists of a vowel and initial and final consonant cluster. Of these three constituents only the vowel is obligatory. All syllables must contain a vocalic nucleus. The initial and final consonant clusters are optional. This means that the simplest syllable will be a vowel, for example '*eye*' or 'a'. such syllables are represented as V. The next simplest syllable types are consonant – vowel (CV) or vowel – consonant (VC), for example *me, he, go, on, at, and an*. Many languages have only either V or CV syllables, for example Maori. We discussed the largest syllable – initial cluster in English. These clusters contain three consonants, the first of which is always /**s**/, the second a voiceless stop /p t k/, and the third is an approximant /r l j w/. The largest syllable – final cluster in English contain four consonants, for example sixths - /ksθs/, and, as with the syllable – initial cluster, the range of possible combination is severely limited.

As we discussed above, all syllables must contain a vocalic element, and this is called the nucleus. The optional initial consonant or consonants are called the onset, while the optional final consonant or consonants are called the coda. Together the nucleus and coda form the rhyme.

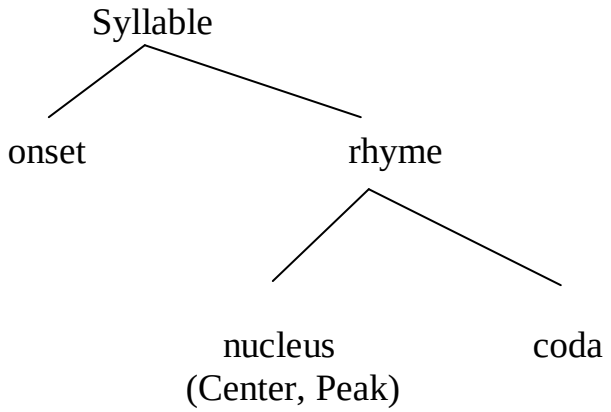

Figure 1 (Syllable Structure)

The structure of the syllable is represented above as a tree. The onset and coda constituents are self-explanatory. They represent initial and final consonants or clusters. However, the inclusion of the rhyme requires some further explanation.
The rhyme constituent consist of both the vocalic nucleus and the coda. There is a number of arguments for grouping these constituents together (Kuiper, 1987: 96).

The structure of English spoken syllables can be summarized as follows:

- Minimally, a syllable consists of a vowel, or a vowel – like sound which acts as the *nucleus*, *center*, or *peak* of the syllable: *I, or ooh*. Very rarely, a syllable can consist of a consonant: *m, shh.*
- Many syllables have one or more consonants preceding the nucleus. These make up the syllable onset: ***m****e, **s****o, play*. Traditionally, they are known as 'open syllables'.
- Many syllables have one or more consonants following the nucleus. These make up the syllable coda: ***am***, ***ants***, ***eel***. They are traditionally known as 'closed syllables'.
- Many syllables have both an onset and a coda: **cat**, **jump**.
- The combination of nucleus and coda has a special significance, making up the rhyming property of a syllable: *c**at**, s**at**; **jump**, cl**ump***.

In analyzing syllable structure in this way, it is important to look for the pronunciation behind words spelling. Although ooze ends in a written vowel, it ends in a spoken consonant, and it is structure is VC. Similarly, all is VC (not VCC), jumped is CVCCC (not CVCCVC), and fox is CVCC (not CVC).
(Crystal, 2004: 246)

Initial two-consonant cluster are of two sorts in English. One sort is composed of **s** followed by one of a small set of consonants; examples of such cluster are found in words such as 'sting' **stiŋ**, 'sway' **swe**ɪ, 'smoke' **sməʊk**. The s in these clusters is called the **pre – initial** consonant and the other consonant, (**t, w, m** in the above examples) the **initial** consonant. These clusters are shown in Table 1

Table 1 two – consonant cluster with pre – initial **s**

pre – initial	initial																	
s *plus*	**p**	**t**	**k**	**b**	**d**	**g**	**f**	**θ**	**s**	**ʃ**	**h**	**v**	**ð**	**z**	**3**	**m**	**n**	**ŋ**
	spɪn	**stɪk**	**skɪn**	-	-	-	**sfɪə**	-	-	-	-	-	-	-	-	**smel**	**snəʊ**	-

Note: tow-consonant cluster of s plus l, w, j are also possible (e.g. slɪp, swɪŋ, sjuː), and even perhaps sr in 'syringe' srɪnʤ for some speakers. These cluster can be analyzed either as pre-initial s plus initial I, w, j, r or initial s plus post-initial I, w, j, r.

The other sort begins with one of a set of about fifteen consonants, followed by one of the set **I, r, w, j** as in, for example, 'play' pleɪ, 'try' tr*a*ː, 'quick' kwɪk, 'few' fjuː. We call the first consonant of these clusters the **initial consonant** and the second the **post-initial**. There are some restrictions on which consonants can occur together. This can best be shown in table form, as shown in Table 2. when we look at three-consonant clusters we can recognize a clear relationship between them and the two sorts of two-consonant cluster described above; examples of three-consonant initial cluster ate: 'split' splɪt, 'stream' strɪːm, 'square' skwe**ə**. The **s** is

the pre –initial consonant, the **p, t**, and **k** that follow s in the three example words are the initial consonant and the **I, r** and **w** are post – initial. In fact, the number of possible initial three – consonant cluster is quite small and they can be set out in full (words given in spelling form):

		Post – initial			
		I	**r**	**w**	**j**
s plus initial	**p**	'splay'	'spray'	-	'spew'
	t	-	'string'	-	'stew'
	k	'sclerosis'	'screen'	'squeak'	'skewer'

We now have a similar task to do in studying final consonant clusters. Here we find the possibility of up to four consonants at the end of a word. If there is no final consonant we say that there is a **zero coda**. When there is one consonant only, this is called the **final** consonant. Any consonant may be a final consonant except **h, r, w, j**. there are two sorts of two – consonant final cluster, one begins with a final consonant preceded by a **pre-final** consonant and the other with a final consonant followed by a **post-final** consonant. The pre-final consonant form a small set: **m, n, ŋ, I, s**. we can see this in 'bump' bʌmp, 'bent' bent, 'bank' bæŋk, 'belt' belt, 'ask' ɑːsk. The post-final consonants also form a small set: **s, z, t, d, θ**; example words are: 'bets' bets, 'beds' bedz, 'backed' bækt, 'bagged' bægd, 'eighth eɪtθ. These post-final consonants can often be identified as separate morphemes (although not always, e.g. 'axe' æks is a single morpheme and its final s has no separate meaning). A point of pronunciation can be pointed out here: the release of the first plosive of a plosive-plus-plosive cluster such as the **g** (of **gd**) in bægd or the **k** (of **kt**) in bækt is usually without explosion and is therefore practically inaudible.

There are two types of final three-consonant cluster; the first is pre-final plus final plus post-final, as set out in the following table:

		Pre-final	final	post-final
'helped'	**he**	I	p	t
'banks'	**bæ**	ŋ	k	s
'bonds'	**bɔ**	n	d	z
'twelfth'	**twe**	I	f	θ

The second type shown that more than one post-final consonant can occur in a final cluster: final plus post-final 1 plus post-final 2.post final 2 is a gain one of s, z, t, d, θ.

		Pre-final	final	post-final 1	post-final 2
'fifth'	**fɪ**	_	f	θ	s
'next'	**ne**	_	k	s	t
'lapsed'	**læ**	_	p	s	t

Most four-consonant clusters can be analyzed as consisting of a final consonant preceded by a pre-final and followed by post-final 1 and post-final 2, as shown below:

		Pre-final	final	post-final 1	post-final 2
'twelfths'	**twe**	I	f	θ	s
'prompts'	**præ**	m	p	t	s

A small number of cases seem to require different analysis, as consisting of a final consonant with no pre-final but three post-finals:

		Pre-final	final	post-final 1	post-final 2	post-final 3
'sixths'	**sɪ**	_	k	s	θ	s
'texts'	**te**	_	k	s	t	s

To sum up, we may describe the English syllable as having the following maximum phonological structure:

Pre-Initial	post-Initial	VOWEL	pre-final	post-final 1	post-final 2	post-final 3
Onset			Coda			

It will be noticed that there must be a vowel in the center of the syllable.

Recent work in phonology makes use of a rather more refined analysis of the syllable in which the vowel and the coda (if there is one) are known as the rhyme; if you think of rhyming English verse you will see this works by matching just that part of the last syllable of a line. The rhyme is divided into the peak (normally the vowel) and the coda (but note that this is optional: the rhyme may have no coda, as in a word like 'me'). As we have seen, the syllable may also have an onset, but this is not obligatory (Roach, 2002: 71-2-3-4-5).

2.2 Simple Syllable

What we might call a **minimum syllable** would be a single vowel in isolation, e.g. the words 'are' **aː**, 'or' **ɔː**, 'eer' **ɜː**. These are preceded and followed by silence. Isolated sounds such as **m**, which we sometimes produce to indicate agreement, or **ʃ**, to ask for silence, must also be regarded as syllables. (Roach, 2002: 70).

2.3 Onset + Vowel

A term used in **PHONETICS** and **PHONOLOGY** to refer to the initial functional element in a linguistic **UNIT**. The notion has been especially used in relation to the description of **SYLLABLE STRUCTURE**, but it is also sometimes found in other contexts, such as in relation to **INTONATION** or **RHTTHM** units. A distinction is sometimes drawn between 'simple' syllabic onsets (containing only one segment) and 'complex' onsets (containing more than one segment). (Crystal, 2003: 325).

This term is used in the analysis of **syllable** structure (and occasionally in other areas); generally it refers to the first part of a syllable. In English this may be zero (when no **consonant** preceded the **vowel** in a syllable), one consonant, or two, or three. There are many restriction on what clusters of consonants may occur in onsets: for example, if an English syllable has a three-consonant onset, the first consonant must be /s/ and the last one must be one of / I r w j / (Roach, 2002: 53).

In phonetics and phonology, a **syllable onset** is the part of a syllable that precedes the syllable nucleus. In the study of Chinese languages, onsets are better known as **initials** or in Chinese, ***shengmu*** (PY: shēngmǔ, TC: 聲母, SC: 声母) (englishclub).

2.4 Vowel + Coda

A term used in **PHONETICS** and **PHONOLOGY** to refer to the **ELEMENT** of a **SYLLABLE** which may follow the syllabic **NUCLEUS**, e.g. the /p/ of /kʌp/. a distinction is sometimes drawn between 'simple' syllabic coda (containing only one segment) and 'complex' coda (containing more than one segment). Restriction on the segments or features which may occur in coda position are known as coda constraints. Derived forms include **NOCODA,** used in **OPTIMALITY THEORY** for a syllable ending in a **VOWEL** (Crystal, 2003: 78).

This term refers to the end of a syllable. The central part of a syllable is almost always a vowel, and if the syllable contains nothing after the vowel it is said to have no coda ("zero coda"). Some languages have no codas in any syllables. English allows up to four consonants to occur in the coda, so the total number of possible codas in English is very large – several hundred, in fact (Roach, 2002: 15).

In phonology, a **syllable coda** comprises the consonant sounds of a syllable that follow the nucleus, which is usually a vowel. The combination of a nucleus and a coda is called a rime. A coda is not required in syllables. Some languages' phonotactics, like that of Japanese, limit syllable codas to a small group of single consonants, whereas others can have any consonant phoneme or even clusters of consonants in syllable codas (wikipedia).

2.5 Onset + Vowel + Coda Syllable {The Nucleus}

A term used by some **INTONATION** analysts, particularly those working within the British tradition, to refer to the **SYLLABLE** in a **TONE UNIT** which carries maximal **PROMINENCE**, usually due to a major **PITCH** change. **The nuclear syllable** (sometimes represented as **N**) is also referred to as the **TONIC** syllable. (Crystal, 2003: 321)

The Nucleus used in the description of **intonation** to refer to the most prominent syllable of the **tone-unit**, but also used in phonology to denote the center or peak (i.e. **vowel**) of a **syllable**.

It is one of the central principles of the "standard British" treatment of intonation that continuous speech can be broken up into units called tone, and that each of these will have one syllable that can be identified as the most prominent. This syllable will normally be the starting point of the major **pitch** movement (nuclear tone) in the tone unit. Another name for the nucleus is the tonic syllable.

(Roach, 2002: 52)

In phonetics and phonology, the **nucleus** (sometimes called **peak**) is the central part of the syllable, most commonly a vowel. In addition to a nucleus, a syllable may begin with an onset and end with a coda, but in most languages the only part of a syllable that is mandatory is the nucleus. The nucleus and coda form the rime of the syllable (wikipedia).

2.6 Syllabic Consonant

There is one exception to the rule that a syllable must have a vowel as it is nucleus. This occurs when certain vowel like consonant - /l/, /r/, or a nasal – act as the center of the syllable, as in bottle /bɔtl/, *bottom* /bɔtm/, *button* /bʌtn/, and (in those accents which pronounce /r/, perhaps /perhaps/. In each case, the syllabic consonant is shown by a small vertical mark beneath the symbol. Ina very slow articulation of these words, the vowels would re – appear, and the consonants would revert to their normal coda value (such is /bɔtəl/; but these pronunciations are highly artificial, and would never be heard in usual conversational speech. (However, are few regional accents – in some parts of Wales, for example – where the avoidance of syllabic consonants is normal?) (Crystal, 2004: 246).

In the above sections we have looked at vowel in weak syllables. We must also consider syllables in which no vowel is found. In this case, a consonant, either l, r or a nasal, stands as the peak of the syllable instead of the vowel, and we count these as weak syllables like the vowel examples given earlier in this chapter. It is usual to indicate that a consonant is syllabic by means of a small vertical mark (◌̩) for example 'cattle' **kætl̩**

Syllabic l

Syllabic **l** is perhaps the most noticeable example of the English syllabic consonants, although it would be wrong to expect to find it in all accents. It occurs after another consonant, and the way it is produced depends to some extent on the nature of that consonant. If the preceding consonant is alveolar, as in 'bottle' **bɔtl̩**, 'muddle' **mʌdl,** 'tunnel' **tʌnl**, the articulatory movement from the preceding consonant to the syllabic **l** is quite simple. The sides of the tongue, which are raised for the preceding consonant, are lowered to allow air to escape over them. The tip and blade of the tongue do not move until the articulatory contact for the **l** is released. The l is a "dark l".

The most obvious case is where we have a word ending with one or more consonant letters followed by 'le' (or, in the case of noun plurals or third person singular verb forms, 'les') examples are:

i) with alveolar consonant preceding

'cattle' **kætl̩** 'bottle' **bɔtl** 'wrestle' **resl̩**

ii) with non-alveolar consonant preceding

'couple' **kʌpl̩** 'trouble' **trʌbl** 'struggle' **strʌgl**

Such words usually lose their final letter ‘e’ when a suffix beginning with a vowel is attached, but the l usually remains syllabic. Thus:

‘bottle’ – ‘bottling’ **bɔtl - bɔtlıŋ**

‘muddle’- ‘muddling’ **mʌdl-mʌdlıŋ**

We also find syllabic l in words spelt, at the end, with one or more consonant letters followed by ‘al’ or ‘el’, for example:

‘panel’ **pænl** ‘petal’ **petl** ‘ducal’ **dju:kl** ‘kernel’ **kɜ:nl**

In some less common or more technical words, it is not obligatory to pronounce syllabic l and the sequence əl may be used instead, although it is less likely:

‘missal’ **mısl** ‘acquittal’ **əkwıtl**

Syllabic n

Of the syllabic nasals, the most frequently found the most important is **n**. when should it be pronounced? A general rule could be made that weak syllables which are phonologically composed of a plosive or fricative consonant plus **ən** are uncommon except in initial position in the words. So we can find words like ‘tonight, ‘canary’ k**əneəri** with an **ə** before **n**, but medially and finally – as in words like ‘threaten’, ‘threatening’ – we find much more commonly a syllabic **n:**

To pronounce a vowel before the nasal consonant would sound strange. Syllabic n is most common after alveolar plosives and fricatives; in the case of **t** and **d** followed by **n** the plosive is nasally released by lowering the soft palate, so that in the word ‘eaten’ **i:tn** for example, the tongue does not move in the **tn** sequence but the soft palate is lowered at the end of **t** so that compressed air escapes through the nose. We do not find **n** after **l** or **ʧ**, **ʤ**, so that for example ‘sullen’ must be pronounced **sʌlən**, ‘Christian’ as **krıstʃən**

Syllabic **n** after non-alveolar consonants is not so widespread. In words where the syllable following a velar consonant is spelt ‘an’ or ‘on’ (for example, ‘toboggan’, ‘wagon’) it is rarely heard, the more usual pronunciation being **təbɔgən, wægən**

After bilabial consonants, in words like ‘happen’, ‘happening’, ‘ribbon’ we can consider it equally acceptable to pronounce them with syllabic **n** (**hæpn, hæpnɪŋ, rɪbn)**

As we will see, syllabic **m** is also possible in this context. In a similar way, after velar consonants in words like ‘thicken’, ‘waken’, syllabic **n** is possible but **ən** is also acceptable. Syllabic **ŋ** is also possible in this context.

After **f** or **v**, syllabic **ŋ** is more common than **ən**. thus ‘seven’, ‘heaven’, ‘often’ are more usually **sevn, hevn, ɔfn** than **sevən, hevən, ɔfən.**

Syllabic m,n

We will not spend much time on the syllabic pronunciation of these consonants. Both can occur as syllabic, but only as a result of processes such as assimilation and elision that l have not yet described. We find them sometimes in words like ‘happen’, which can be pronounced **hæpɪm**, though **hæpɪn** and **hæpən** are equally acceptable, and ‘uppermost’, which could be pronounced as **ʌpməust** though **ʌpəməust**

Would be more usual. Examples of possible syllabic velar nasals would be ‘thicken’

θɪkŋ, and ‘broken key’ **brəukŋ ki:** where the nasal consonant occurs between velar consonants (again, **n** or **ən** could be substituted for **ŋ**).

Syllabic r

In many accents of the type called "rhotic", such as most American accents, syllabic **r** is very common. The word 'particular', for example, would probably be pronounced **prtɪkəlr** in careful speech by most Americans, while BBC speakers would pronounce this word **pətɪkjələ** . Syllabic **r** is less common in BBC and in most cases where it occurs there are perfectly acceptable alternative pronunciations without the syllabic consonant.

There are a few pairs of words in which a difference in meaning appears to depend on whether a particular **r** is syllabic or not, for example: 'Hungary' **hʌŋgri**

'hungry' **hʌŋgri**

But we find no case of syllabic **r** where it would not be possible to substitute either non-syllabic **r** or **er**; in the example above, 'Hungary' could equally well be pronounced **hʌŋgəri** (Roach, 2002: 86-7-8-9).

3.1 Strong and Weak Syllable

Nearly 50 words in English can be pronounced in tow distinct ways, depending on the degree of force with which they are uttered. They are all words which perform a grammatical function – determiners, pronouns, auxiliary verbs, prepositions, conjunction, and particles. Strong (or full) forms are used when the word is said in isolation or is being emphasized. Weak forms are normal in connected speech: peripheral vowels (those which are articulated towards the edge of the vowel area in the mouth, are replaced by those of a more central quality, and some consonants may be elided. Weak forms are sometimes represented in writing, though not usually very accurately (bacon n eggs, cup o coffee). In the following examples, the strong forms are given on the left and the weak forms on the right.

and	ænd	ən,n
that	ðæt	ðət
his	hɪz	ɪz
from	frɔm	frəm
of	ɔv	əv,
to	tuː	tʊ,
some	sʌm	səm, sm
there	ðɛə	ðə
have	hæv	əv, v, ə
were	wɜː	wə
do	duː	də, dʊ
must	mʌst	məs, məst

In many cases, we need to take note of context. For example, there as an adverb of place is always strong; but at the beginning of an existential sentence it is always weak (there is no place like home). Also, different forms may appear before consonants and before vowels: compare I must go (/məs/) and I must eat (/məst/), or for tea (/fə/) and for Ann (/fər/) (Crystal, 2004: 247).

One of the most noticeable features of English is that some of its syllables are **strong** while many others are **weak**; this is also true of many other language, but it is necessary to study how these weak syllables are pronounced and where they occur in English. The distribution of strong and weak syllables is a subject that will be met in several later chapters. For example, we will look later as **stress**, which is very important in deciding whether a syllable is strong or weak. **Elision** is a closely related subject, and in considering **intonation** the difference between strong and weak syllables is also important. Finally, words with "strong" and "weak" forms are clearly a related matter. In this chapter we look at the general nature of weak syllables. What do we mean by "strong" and "weak"? To begin with, we can look at how we use these terms to refer to phonetic characteristics of syllables. When we compare weak syllables with strong syllables, we find the vowel in a weak syllable tends to be shorter, of lower intensity and different in quality. For example, in the word 'farther' **fa:ðə** the second syllable, which is weak, is shorter than the first, is

less loud and has a vowel that cannot occur in strong syllables. In a word like 'bottle' **bɔt̩l** the weak second syllable contains no vowel at all, but consists entirely of the consonant **l**. we call this a **syllabic consonant.** There are other ways of characterizing strong and weak syllables. We could describe term partly in terms of stress (by saying, for example, that strong syllables are stressed and weak syllables unstressed) but, until we describe what "stress" means, such a description would not be very useful. The most important thing to note at present is that any strong syllable will have as its peak one of the vowel phonemes (or possibly a triphthong), but not **ə**, **i** or **u**. if the vowel is short, then the strong syllable will always have a coda as will. Weak syllables, on the other hand, as they are defined here, can only have one of a very small number of possible peaks. At the end of a vowel (i.e. with no coda):

i) The vowel **ə** ("schwa");

ii) A close front unrounded vowel in the general area of **i:** and ɪ (symbolized **i**);

iii) A close back rounded vowel in the general area of **uː** and **ʊ** (symbolized **ʊ**).

Examples would be:

i) 'better' **betə** ii) 'happy' **hæpi** iii)'thank you **θæŋk ju**

We also find weak syllables in word-find position with a coda if the vowel is ə. For example: i) 'open' **əʊpən** ii) 'sharpen' **ʃɑːpən**

Inside a word, we can find the above vowels acting as peaks without codas in weak syllables; for example, look at the second syllable in each of these words:

i) 'photograph' **fəʊtəgrɑːf** ii) 'radio' **reɪdiəʊ** iii) 'influence' **ɪnfləns**

in addition, the vowel I can act as a peak without coda if the following syllable begins with a consonant: iv) 'architect' **ɑːkɪtekt** (Roach, 2002 : 81-2).

3.1 Characterization of Strong, And Weak Syllable

English has both weak and strong syllables. The most important distinction is that a strong syllable can have its peak on any English vowel phoneme except **ə**, whilst a weak syllable can only have its peak on **ə**, a close front unrounded vowel (like ɪ̞), a close back rounded vowel (like ʊ̞), or a syllabic consonant. Weak syllables also tend to be quieter and shorter than strong syllables.

1- Schwa (**ə**)

Any syllable containing schwa is a weak syllable. Schwa can take the place of many other vowels that would be present if the syllable we strong (imagine saying the following words with stress on the italicized part) (ingilish).

The most frequently occurring vowel in English is **ə**, which is always associated with weak syllable. In quality it is mid (that is, half-way between close and open) and central (that is, half way between front and back). It is generally described as lax, that is, not articulated with much energy. Of course, the quality of this vowel is not always the same, but the variation is not important.

Not all weak syllables contain **ə,** though many do. Learners of English need to learn where **ə** is appropriate and where it is not. To do this we often have to use information that traditional phonemic theory would not accept as relevant – we must consider spelling. The question to ask is: if the speaker were to pronounce a particular weak syllable as strong instead, which vowel would it be most likely to have, according to the usual rules of English spelling? Knowing this will not tell us which syllables in a word or utterance should be weak – that is something – but it will give us a rough guide to the correct pronunciation of weak syllables. Let us look at some examples:

i) Spelt with 'a'; strong pronunciation would have **æ**

'***a***ttend' **ətend** 'char***a***cter' **kærəktə**

ii) Spelt with 'ar'; strong pronunciation would have **ɑː**

'p***ar***ticular' **pətɪkjələ** 'mol***ar***' **məʊlə**

iii) Adjectival ending spelt 'ate'; strong pronunciation would have **eɪ**

'intim***ate***' **ɪntɪmət** 'accur***ate***' **ækjərət**

iv) Spelt with 'o'; strong pronunciation would have **ɔ** or **əʊ**

't***o***morrow' **təmɔrəʊ** 'p***o***tato' **pəteɪtəʊ**

v) Spelt with 'or'; strong pronunciation would have **ɔː**

'f***or***get' **fəget** 'ambassad***or***' **æmbæsədə**

vi) Spelt with 'e'; strong pronunciation would have **e**

'viol***e***t' **vaɪələt** ' postm***e***n' **pəʊstmən**

vii) Spelt with 'er'; strong pronunciation would have **ɜː**

'p***er***haps' **pəhæps** 'strong***er***' **strɔŋgə**

viii) Spelt with 'u'; strong pronunciation would have **ʌ**

'Aut***u***mn' **ɔːtəm** 's***u***pport' **səpɔːt**

ix) Spelt with 'ou'; strong pronunciation might have **aʊ**

'graci***ou***s' **greɪʃəs** 'call***ou***s' **kæləs** (Roach, 2002: 83-84).

2- Close front and close back vowels (ɪ˺ I ʊ˺ Y)

In weak syllables it is very difficult to tell whether a high front vowel should be transcribed as ɪ˺ or I (think of the vowel at the end of 'busy'). It is also difficult to tell whether a close back vowel should be ʊ˺ or Y (think of the vowel in 'to'). In

each case the sound doesn't seem to be either of the two phonemes. The solution adopted by Roach and in this course is to use the symbol for the long vowel but without the length mark e.g. [βIζι] and [τυ] (ingilish).

Two other vowels are commonly found in weak syllables, one close front (in the general region of **ɪː** and **I**) and the other close back rounded (in the general region of **uː** and **ʊ**). In strong syllables it is comparatively easy to distinguish **ɪː** from **I**, **uː** from **ʊ**, but in weak syllables the difference is not to clear. For example,

Although it is easy enough to decide which vowel one hears in 'beat' or 'bit', it is much less easy to decide which vowels one hears in the second syllable of word such as, for example, 'easy' or 'busy'. There are accents of English (for example Welsh accents) in which the second syllable sounds most like the **ɪː** in the first syllable of 'easy', and others (for example Yorkshire accent) in which it sound more like the **I** in the first syllable of 'busy'(Roach, 2002: 84).

3.2 Strong Syllable

These are strong syllables:

/iː/ 'beat' /biːt/

/ɜː/ 'bird' /bɜːd/

/ aː/ 'card' /kaːd/

/ɔː/ 'board' /bɔːd/

/ ʊː/ 'food' /fʊːd/

/e/ 'bet' /bed/

/æ/ 'bat' /bæt/

/ʌ/ 'but' /bʌt/

/ɔ/ 'pot' /pɔt/

/ɪə/ 'beard' /bɪəd/

/eə/ 'aired' /beəd/

/ʊə/ 'moored' /mʊəri ŋ/

/eɪ/ 'paid' /peɪd/

/aɪ/ 'nice' /naɪs/

/ɔɪ/ 'void' /vɔɪd/

/əʊ/ 'home' /həʊm/

/aʊ/ 'house' /haʊs/ (Roach, 2002: 15-16).

3.3 Weak Syllable

These are weak syllables, with syllabic consonsnt:

/I/ 'fish' /f ɪʃ /

/ʊ/ 'push' /PʊʃI/

/ə/ 'attend' /ətend/

Syllabic **l** as in 'bottle' **bɔtl̩**

Syllabic **n** 'canary' **kənəri** with an **ə** before **n**

Syllabic **m,n** 'happen', which can be pronounced **hæpɪm**, though **hæpɪn** and **hæpən** are equally acceptable, and 'uppermost', which could be pronounced as **ʌpməust** though **ʌpəməust**

Syllabic **r** 'Hungary' **hʌŋgri** 'hungry' **hʌŋgri**

(Roach, 2002: 15-17).

4. conclusion

The present paper tackled a topic in English phonetics and phonology , viz . the syllable . It is found that the phonetic and phonological properties of the syllable are needed in the process of the analysis of the syllable . The study has shown that a knowledge of the nature and structure of the syllable will minimize the complexity of the identification of the syllable in a language and here the English language. The presentation of permissible and impermissible sound sequences in the structure of a word has proved to be an inevitable step in the characterization and identification of the syllable boundaries

The paper has shown that syllabification makes it easy for a learner to know the stress patterns and placements in words

The inclusion of the discussion of syllabic consonants in this paper demonstrates their function as peaks or centers of syllables . It is found that the characterization of weak syllables by the learner of the language is of great help in the understanding of speech.

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المقطع اللفظي في اللغة الانكليزية

خلاصة البحث

أن هذا البحث هو عن المقطع أللفظي في اللغة الانكليزية ليستقصي طبيعته وتركيبه يتألف البحث من أربعة أقسام . يتناول القسم الأول تعريف المقطع أللفظي ويبحث في طبيعته ويعطينا فكرة عن وقت المقطع أللفظي وكيفية تجزئته . أما القسم الثاني فقد خصص لشرح تفصيلي عن بنية المقطع أللفظي وبيان تراكيبه التي تتضمن ..

١. المستهل + الصوت المعتل ٢. الصوت المعتل + التقفيلة ٣. المستهل + الصوت المعتل + التقفيلة ٤. الأصوات الساكنة التي تشكل مقاطع لفظية . يزودنا القسم الثالث من البحث بمناقشة وشرح المقاطع أللفظية القوية والضعيفة مع بيان طريقة تشخيصها وأخيراً فأن القسم الرابع من البحث يمثل خاتمة البحث ونتائجه .