The phonological structures of open and close junctures in utterances for English Teachers

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Abstract

Junctures are specific phonemes in English language and work like what the traffic lights do in the structures of phrases at the beginning, in the middle, and at the end of the words, phrases, clauses, and sentences. They indicate both the pauses and continuation in the flow of speech in between or among the utterances some of which can be the cause of misperceptions and misunderstandings. At the word and phrase level, open and close junctures come to the stage to give hard times to the non-native speakers in perception of speech and production of speech. By nature, sounds signal pauses, segmentation, and which the listeners need them to perceive the spoken utterances. Close junctures take place in compound words while the open or plus junctures are situated in or among the phrases. They both change the meanings of utterances; therefore, they are accepted as phonemes in English. If they are not perceived by the listeners, they change the meanings of utterances and thus the listeners are misled and soon find themselves in communication breakdown.

1. Introduction

The aim of the present work is to discuss the concept of juncture phonemes in relation to open and close internal juncture phonemes in English Suprasegmental phonemes have not been adequately emphasized in ESL/EFL pedagogy since the advent of communicative language teaching, and in addition their importance in foreign language teacher education has always been neglected. In many phonetics and phonology books today, the study and analysis of junctures do not take place. An explanation for this missing case is given by Pei (1966:132), since no fusion takes place across the boundaries of these patterns, juncture belongs to rather to the level of phonology, for the prosodic

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features of stress, pitch, and duration automatically take care of it. The term juncture as a suprasegmental feature indicates the borders of most words and groups of words in spoken and written English. Junctures, otherwise called "pauses," signal beginning, middle, and ending points in phrases or in sentences, can affect the listener's ability to identify a suitable place to interrupt a conversation. There are two internal juncture phonemes that are open juncture phoneme and internal close juncture phonemes, and four terminal juncture phoneme, which are respectively called falling terminal juncture phoneme, rising terminal juncture phoneme, sustained terminal juncture phoneme, falling-rising juncture phoneme, and rising-falling juncture phoneme.

In this paper the phonemic status of two internal juncture phonemes, open juncture phoneme (plus juncture) and internal close juncture phonemes will be explored. Since they are able the change the meaning of utterances, they are accepted as two different suprasegmental phonemes in the phonological structure of English. The aim of this study, therefore, is to explore how open and close junctures affect the phonology, morphology, and the semantics of words and sentences in English.

2. Theoretical background

The term juncture as a phoneme is another measuring unit of intonation. As a suprasegmental phoneme, it characterizes the words from one sound to the next sound in the stream of speech. By nature, it interposes a temporary stoppage of the flow of speech by requiring the need of pausing to bring in clarity in thought groups in the stream of speech. Therefore, it happens to be a suprasegmental phonemic cue that makes the listeners to perceive between two otherwise identical sequences of utterances that have different meanings, a lot and allot, a political and apolitical.

Juncture is a sound quality signaling pause or pauses. Bloch and Trager (1942) first introduced the plus juncture, an open internal juncture to indicate a word boundary, and that later Trager and Smith (1951) added three varieties of juncture to describe pauses in speech accompanied with particular pitch changes. Both of them implied the fact that junctures are phonemic structures. It has phonemic status specified by phonemic analysis (Trager, 1962: 11-22; Trager and Smith, 1951), Harris (1951); Demirezen, 1986: 113-116; Kreider (2001). Juncture is "the relationship between one sound and the sounds that immediately precede and follow it (Roach, 1988:110).

Junctures are used to demarcate words or other grammatical units. Juncture phonemes, one of the elements of intonation along with primary stress and pitch phonemes, are "the phonetic boundary features which may demarcate grammatical units such as morpheme, word or clause" (Crystal, 2008). Thus, the term juncture distinguishes word boundaries and is represented by the /+/ symbol, and three types of pauses in connected speech. The latter ones are all phonemic and indicate different amounts of juncture. The precise length of pause will vary depending on the speech of

utterance; in slow, clear speech all the pauses will be longer than in faster speech. There are meaningful differences in the following words:

makeup /ˈmeɪkʌp/(n) (colored substances on face to change one's appearance **make up** /ˈmeɪk + ʌp/(v) (to invent a story, explanation, etc. in order to deceive someone)

The word "**makeup**" is a noun which houses a close juncture while the word "**make up**" represents a phrase which is created by a plus juncture.

maybe /ˈmeɪbi/ (perhaps; something may be true or may happen)(adverb) **may be** /ˈmeɪ + bi/ (model verb' may + auxiliary 'be)

Similarly, while the word "**maybe**" happens to be an adverb due to its close juncture, the phrase "**may be**" carries a verbal phrase created by the plus juncture phoneme /+/.

arrest /əˈɹɛst/ (verb)
a rest /ə+ˈɹɛst/ (a phrase)

Then, the existence of close juncture and open plus juncture in word structures became the cause of both meaning change and grammatical category change. That's why the term juncture signals the existence of the phonemes. Close juncture and open plus juncture are phonemic because they change the meaning of utterances, and since they are said to be superposed on the segmental phonemes they are called suprasegmental phonemes.

2.1. Further elaboration on the phonemic structure of open and close junctures

Juncture is another type of suprasegmental phoneme and signifies transition between the segmental phones of words, phrases and clauses. That is why it is a common belief in prosodic analysis that junctures as phonemes are arrived a strictly on the basis of pronunciation, not on the basis of writing. There are two kinds of ways in getting from one speech sound to another. In other words, there are two types of transitions between speech sounds: internal close juncture phoneme and internal open juncture phoneme.

2.2. The close juncture phoneme

Juncture is the label given to a number of features which may occur at the boundary between two words in connected speech such that, even though the two words may be fully linked together, the boundary between them is nevertheless unambiguous and clear (Underhill, 2005:68). Close juncture phoneme is called "close transition" or "normal transition" (Skandera & Burleigh 2011: 62) wherein there is a smooth or unbroken transition in the flow of the segmental phonemes as seen in the word "nitrate" as opposed

to "night rate." There is no sign used for close juncture phoneme in phonetic transcription.

2.3. External open juncture phoneme

The word boundary that is preceded or followed by a pause may require an open juncture. This type of word boundary typically exhibits a break in form of a pause between words, as seen in the word "**night rate**," but not in "**nitrate**." If there is no pause between a word boundary preceded that is or followed by a pause, so that words on either side of the juncture are run together, the boundary is called an internal open juncture. The distinction between open and close juncture is the difference between "**night rate**" /naɪt+ɹeɪt/ with the open juncture between /t/ and /ɹ/, and "nitrate", /naɪtɹeɪt/ with close juncture between /t/ and /ɹ/ (Skandera & Burleigh, 2011: 62). The latter is called the "plus juncture" or "open juncture" and is symbolized by /+/, but the former hasn't got a sign since it is not demonstrated in the word. Here are some examples for open and close junctures. We should remember that a syllable border is also a potential place for an open juncture (Demirezen, 1986).

The absence of a juncture creates a change in the meaning of the words as heard in the examples in forms of minimal pairs, which typify the existence of **close juncture phoneme** and **open juncture phoneme** as two different suprasegmental phonemes in English phonology. In phonetic transcription, open juncture is transcribed as /+/, hence the name plus juncture (Skandera & Burleigh, 2011: 62). Close juncture is the movement from sound to sound which has no intervening pauses or delay; this is a normal transition from one phoneme to the next within an utterance, whereas there is a slight stoppage of the sounds till they blend with the next, called as plus juncture, which keeps meaning apart. In open juncture the manner of transition is from one phoneme to the other in two utterances. In phonetic transcription open juncture is transcribed /+/, hence the name plus juncture (Skandera & Burleigh 2011: 62). The following examples are special because they create ambiguity in connected speech. "We believe that when spoken normally as part of an utterance such phrases are virtually impossible to distinguish consistently even for the English speakers, who use context or their knowledge of the world to help them segment and to choose from competing options" (Celce-Murcia, et al: 241). In the following expressions, some bonds between morphemes are tighter than others, producing different effects:

<u>**External Open Juncture**</u> versus	<u>**Internal Close Juncture**</u>
a light house **/ə + ˈlaɪt+haʊs/**	a lighthouse **/ə + ˈlaɪthaʊs/**
(a house which is light)	(a tower with a bright light for ships near the shore)
a green house **/ˈgɹiːn + haʊs/**	a greenhouse **/ˈgɹiːnhaʊs/**
(a house which is green)	(a glass building in which you grow plants)

a black bird **/ə + blæk + bɜːɹd/**   a blackbird **/ə + blækbɜːɹd/**
(a special species of a bird)   (Any bird which is black)

wet nurse **/wɛt + nɜːɹs /**   wetnurse /ˈwɛtnɜːɹs /
(a nurse who is wet)   (to take care of people who are sick, old or injured)

   There are many minimal pair examples, testifying the existence of internal close juncture phoneme and External open juncture phoneme as two different juncture phonemes in English. In English, a pause at the plus juncture sometimes distinguishes otherwise homophonic phrases:

a bout **/ə +'baʊt/**   about **/əˈbaʊt/**
sin tax **/'sɪn+tæks/**   syntax **/'sɪntæks/**
mid wife /ˈ**mɪd + waɪf**/   midwife/ˈ**mɪdwaɪf/**
wet nurse **/wɛt + nɜːɹs /**   wetnurse /ˈ**wɛtnɜːɹs/**
sweet heart /ˈ**swiːt + hɑɹt/**   sweetheart /ˈ**swiːthɑɹt/**
a name **/ə + n**ˈ**eɪm/**   an aim **/ən+**ˈ**eɪm/**
under a rest /ˈ**ʌndəɹ + ə +ɹɛst/**   under arrest /ˈ**ʌndəɹ +əɹɛst/**
real eyes /ˈ**ɹiəl +** ˌ**aɪz/**   realize /ˈ**ɹiə** ˌ**laɪz/**
short train **/'ʃɔɹt + tɹeĭn/**   short rain **/'ʃɔɹt + ɹeɪn/**

Underhill (2005, 68) provides the following examples:

grey tapes /ˈ**gɹeɪ + teɪps/**   great apes /ˈ**gɹeɪt + eɪps/**
ice train /ˈ**aɪs + tɹeɪn**/   I strain /ˈ**aɪ + stɹeɪn/**
grade 'A' /ˈ**gɹeɪd + eɪ/**   grey day /ˈ**gɹeɪ + deɪ/**
send the maid /ˈ**sɛnd+ðə+meɪd/**   send them aid /ˈ**sɛnd+ðəm+eɪd/**
Further examples:

<u>Adverb</u>   <u>Phrase</u>
already /ɔlˈɹɛdi/   all ready /ˈɔl + ɹɛdi/
altogether /ˌɔltəˈgɛðəɹ**/**   all together /ˌɔl + təˈgɛðəɹ**/**
always /ˈɔlweɪz/   all ways /ˈɔl + weɪz/

The absence of a juncture in above examples will obviously create a change in the meaning of word, and therefore junctures are accepted as suprasegmental phonemes in English. As it is seen in the aforementioned examples, the open juncture, indicated by a phonemic sign /+/, denotes grammatical boundaries within an utterance, and does not involve a change in the pitch of an utterance, as also seen in: **"a name /ə+'neɪm/"** vs. **"an aim /ən+'eɪm/"** and **"short train"** /'ʃɔɹt + tɹeĭn/ vs. **"short rain"** /'ʃɔɹt + ɹeɪn/. The sounds which occur before **/+/** are said to be in prejunctional position and are realized in various allophonic occurrences. In post-junctional positions, all segmental phonemes also exhibit special allophones. For instance, in prejunctional position stops are "unreleased" (Demirezen, 1986), and "vowels – glides - continuants" are prolonged. It must also be

borne in mind that **/+/** is a feature of pronunciation and always occurs between the secondary and primary stresses.

For British English, Roach (1988:110) gives the example **"my turn"** /ˈmaɪ tɜːn/. The relationship between /m/ phoneme and /aɪ/ diphthong, between /t/ and /ɜ:/ and between /ɜ:/ and /n/ is said to be of close juncture. The /m/ phoneme is preceded by silence and /n/ phoneme is followed by silence, and so /m/ and /n/ are said to be in a position of external open juncture. The problem lies in deciding what the relationship is between /aɪ/ and /t/, since we do not usually pause between words there is no silence (or external open juncture) to indicate word division and to justify the space left in the transcription. But if English speakers hear /maɪtɜ:n / they can usually recognize this as **'my turn**' and not **'might earn.**' This is where the problem of internal open juncture becomes apparent. /t/ is aspirated at the beginning of the word **'turn'**, and /aɪ/ is shorter in the word **'might'** (Roach, 1988:110). So, juncture phonemes are employed to distinguish between several vowels and consonants (Brown, 2014).

 Similarly, the position of a word boundary has some effect on the realization of the /t/ phoneme. In /pi:stɔ:ks /, if the sound [s] is assigned to the following phoneme /t/ we shall have an open juncture in **pea stalks** /pi: **+** stɔ:ks /, but if the sound [s] is related to the preceding /i:/, there is a close juncture **peace talks** /pi:s tɔ:ks / in which there is no further possible cut. Roach (1988) gives the following examples to show the significance of juncture:

a. might rain /maɪt + ɹein/ ("r" is voiced when initial in 'rain', /aɪ/ is short)

b. my train /maɪ + tɹein /(r voiceless following /t/ in 'train'

a. He lies /hi:+ laɪz (clear /l/ initial in the word **lies**)

b. heal eyes /hi:l + aɪz/(dark /l/ final in in the word **heal**)

a. keep sticking /ki:p + stɪkɪŋ /((/t/ is unaspirated after /s/, /i:/ is short (Roach,1988:110; Ibrahim, 2008: 359).

The following examples from Gimson (1978:300) illustrate various ways in which phonetic cues may mark word boundaries. In the phrase **a name** /ə+'neɪm / there is relatively a long /n/), and in **an aim** /ən + 'eɪm/ relatively a short /n/ is heard. /ðætstʌf/ can be said in two different ways to give two different meanings according to the place of juncture. In / ðæt + stʌf / "that 'stuff", there is an unaspirated /t/, and a strong /s/ comes in whereas in / ðats + tʌf / "that's 'tough" there is an aspirated /t/, but the /s/ is weaker. So such cases naturally produce allophones.

Additionally, Gimson (1978:300) also gives the following examples, which can be demonstrated in North American English (NAE): The utterance /ðəweitkʌtɪt / can be understood either as "**the waiter cut it**" /ðə + weɪtəɹ + kʌt+it/, or "**the way to cut it**" /ðə+weɪ+tə+kʌt+it/. Similarly, the utterance /haustɹeind/ "how strained" /hau + streind/ goes into "house trained" /haus+ treɪnd/; /waɪt + ʃu:z/ "white shoes" versus /waɪ + tʃu:z/ "why choose"; /naɪt +ɹeit/ "night rate" goes into /naɪtɹeit/ (Gimson, 1978:301; Ibrahim, 2008:359)

Like, the sentence "I scream" **/aɪ +skɹiːm/** with a long diphthong **/aɪ/**, strong /s/ related to /k/ and unaspirated /k/ after /s/, or the phrase "Ice cream" /aɪs kɹiːm / with no further possible meaningful cut, and /s/ is related to **/aɪ/** in which **/aɪ/** is weaker and /k/ is aspirated. Such phonetic differentiation depends on to which level the speaker perceives the words in these streams of words as independent entities.

Stagaberg (1971:69) says that by the impressions of internal open juncture speakers are able to make distinctions between pairs like:

its praise versus **it sprays**	**a nice** versus **an ice**
grade A versus **gray day**	**it's wing** versus **its wing**
see mabel versus **seem able**	**why choose** versus **white shoes**
keep sticking versus **keeps ticking**	**its lid** versus **it slid**

But although most native speakers have little difficulty in perceiving internal juncture they have trouble in explaining just what gives them a sense of break or separation at the junctural point. It is only through the combined efforts of sharp-eared linguists and spectrographic analysis that we have been able to learn the conditions under which internal juncture occurs. In general, it is the nature of the sounds surrounding the juncture that serves to locate it. Stagaberg gives the example " /ɪtswɪngz/ which can be understood as /ɪt + swɪngz / or /ɪts + wɪngz/. The initial /s/ of "swings" is longer than the final /s/ of "**its"**. In "**wings"** the /w / is voiced, but in **swings** the /w/ is wholly or partially devoiced because of the preceding voiceless /s/ (Stagaberg,1971:70; Ibrahim, 2008:359)

2.4. Junctures and non-native English Teachers

While speaking and also breathing at the same time, making pauses is a physical need for human beings. In addition, segmentation of utterances into syllables, words, phrases, and sentences during the streams of speech is a major decoding problem to preserve the meanings intended by the speakers. The language itself had made these kinds of segmentations. For example, "the history of English language tells us that phrases such as *an apron* and *an adder* were once *a napron* and *a nadder*, indicating that **segmentation**, or dividing up of utterances into individual words and syllables, has long been a real problem for native as well as nonnative listeners" (Celce-Murcia et al, 1996: 240). The correct segmentation is a must because a wrong segmentation can yield terrible results. For example, if the word *therapist* is erroneously segmented during an utterance, the result is *the rapist*. A detailed analysis of the types of junctures can be seen in Demirezen (1986; 2009).

Junctures by nature are phonemes that signal the existence of grammatical boundaries between or among words, phrases, clauses and sentences. However, if we think of the IC-approach as the fundamental operation, it is soon seen that " the

recognition of junctures occupies an entirely logical place" (Kreider, 2001:162). To support the phonemic and logical status of the existence of junctures by the citation of the IC-approach is also supported by Crystal (1987:164). Also, Celce-Murcia et al (1996: 241) accept the existence of junctures through segmentation of utterances and detection of meaning. They accept the fact that "the pedagogical challenge is to contextualize these contrasts at the utterance level so that learners can practice listening discrimination in a reasonably natural way" (Celce-Murcia et al. (1996: 241). Then, teaching of juncture is necessary and nonnative speakers who must be trained through some well-designed and pedagogically oriented exercises.

The location of pauses carries crucial function in intonation (Pickering, 2002). The failure nonnative speakers of a foreign language failure to segment their speech into word groups results not only in problems with nuclear placement, but also in a lack of pause which, for the listener, creates a false sense of speed (Nash, 1969; Van Els and de Bot 1987). A false sense of speed, in turn, damages the tempo, rhythm, and melody.

In the connected speech, there are some conventional pauses that correspond to punctuation marks, which make them obligatory to be mastered by the non-native teachers of English. The following marks represent some examples from Demirezen (1986:116):

Juncture		**Punctuation Mark**
/↓/, falling	corresponds to	(.)
/↑/, rising	corresponds to	(?)
/→/, sustained	corresponds to	(, ;, :, ….)

The correspondence between junctures and punctuation marks does not one hundred percent take place because their use is at the convenience of the speakers, and therefore they may not obey the correspondences.

The examples given below are gathered from (Crystal, 1987, 2008; Demirezen, 1986; Celce-Murcia, et al: 1996, 2010; Lehmann, 1976; Pei, 1966; Bloomfield, 1933; Bowen, 1975; Roach, 2009):

1		2
at all	versus	a tall
a tease		at ease
aloud		allowed
apart		a part
an ode		a node
an aim		a name
see mill		seem ill
nitrate		night rate
my turn		might earn
why try		white rye

a nice man	an ice man
much steam	much esteem
pea stalks	peace talks
cart rack	car track
that's cool	that school
why choose	white shoes
keeps ticking	keep sticking
a good-bye	a good buy
Tom's happy	Tom's sappy
that stuff	that's tough.
The dean's busy	The bean is dizzy
Is Ann around?	Is Ann round?
key punching	keep punching
a tax on city buses	attacks on city buses
Paula praised	Paul appraised
To the state	to the estate

The above-given examples may also signify that non-native teachers can have problems in dividing the stream of speech into word groups or word units. Failure to divide the speech stream into these units can result in grammatical ambiguity or misinterpretation (Jenkins, 2005:45).

Teaching juncture phonemes to teacher candidates and is of great importance in terms of intonation development, professional competence, development, fluency, accuracy, and intelligibility. As Paterno (2003), Ventakagiri and Levis (2007) indicate, the relationship between the correct use of juncture and intelligibility is strong. Habitual L1 tunes must be replaced by L2 to achieve, but the opposition in the prosodic typology of English and Turkish causes the Turkish English teachers and students to have difficulty in acquiring the accurate juncture phonemes and intonation patterns since Turkish is a syllable-timed language while English is a stress-timed language. In a study conducted by Demirezen (2013), it was found that without the proper instruction of all types of junctures, no near native-like intonation skill is achievable without a systematic teaching of all types of junctures, as juncture they are potential determinants of building non-native accents.

3. Conclusions

English open and internal close junctures create a multitude of problems for the non-native English language teachers. Even though they carry phonemic values in conversational functions, their importance goes mostly unheeded in spoken language. Junctures allow listeners/speakers of a given language to hear and produce differences between words and phrases. In English, there are a number of differences in the way words are pronounced in isolation and in the stream of speech in connected discourse.

People speak in short phrases and stop by making pauses in between the phrases in sentences. If the speaker is too fast, there is no need to make these necessary pauses, so people will have difficulties in understanding the speaker, they even get the speaker wrong. Therefore, it is always better too pause more often, because, firstly it gives you more time what to say next, and secondly the listeners will take the same tempo and rhythm to understand what you say, making the listening process easier. In connected speech, then, slow or rapid speech can also determine the use of juncture which marks the break between sounds and the phonological boundary of words, clauses or sentences. Making unnatural pauses will make a non-native speaker sound unnatural. Absence of word grouping is likely to result in non-fluent speech, with pauses occurring in unnatural places to facilitate the solving of linguistic problems rather than to serve the purpose of signaling information structure (Jenkins, 2005:45).

Needless to say, juncture phonemes refer to breaks or pauses in speech grammatical units. Non-native teachers of English do not have to an insight into the differences created by internal close juncture and external plus juncture because as Underhill (2005:173) states "just like assimilation, elision, linking and vowel reduction, they effect rhythm, fluency, and comprehensibility." In addition, slow or rapid speech can also determine the use of juncture which marks the break between sounds and the phonological boundary of words, clauses or sentences. Stress placement on certain words also affects the use of juncture and leads to a change in meaning. If the non-native teachers pay close attention to juncture, there is ambiguity of meaning resulting from the placement of juncture, which can be solved by the context.

Acknowledgements

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