

# The Glottal Stop in English: A Descriptive Study

Assist. Lec. Majda Sabri Faris  
College of Education  
University of Al-Mustansiriah

## Abstract

This study provides a descriptive account of the glottal stop in English. The glottal stop is a speech sound made by closing and opening the glottis which in English sometimes takes the place of /t/ as in *water* for example. It is said that the glottal stop is difficult in pronunciation and recognition for foreign learner of English. However, it is used to conform many functions. The present study tries to explore these functions and the contexts in which it may appear. In addition to that it investigates the actual status of this sound, i.e. whether it is considered a phoneme or not in the English language. Thus, this study tries to provide a thorough description of the glottal stop and other related phenomena in British English and American English. The results of this study can be briefly outlined in the following points:

- 1- Nearly all phoneticians, phonologists and scholars of English agree on a fact that the glottal stop is not a phoneme in English, instead, it is sometimes considered as an allophone of the voiceless plosives, especially, /t/ in some accents of English. The use of the glottal stop [ʔ] in place of /t/ and other voiceless plosives is on the increase in present-day English.
- 2- [ʔ] is found at the end of a syllable (mostly occurs in the coda position).
- 3- It is preceded by a stressed syllable.
- 4- It is preceded by a vowel or a sonorant consonant (especially, /n/ and /l/) and followed by a consonant.

## Introduction

A glottal stop is a plosive-like consonant sound whose closure is produced and released in the glottis. In English, this sound has different functions and it appears in different phonological contexts. The present study deals with all these significant issues and investigates the recent spread of this sound among speakers of English with its two related phenomena, namely, 'glottal reinforcement' and glottal 'replacement' in order to shed light on the points of difficulty during production and recognition of this sound for foreign learners of English. Accordingly, this study is organized as follows: the first section provides some background issues related to English consonants in general. Section two details the information about English plosives in particular with reference to some related concepts. Section three represents the core of this

study and gives a thorough description of the glottal stop, its definitions, functions, contexts and its history. Finally, results are given at the end of this research.

### **I. The Problem of the Study**

The problem of this study stems from the actual difficulty inherent in recognizing and producing the glottal stop sound by learners of English and lies in answering the following questions:

- 1- Identifying the status of the glottal stop in English, i.e., is it a phoneme or an allophone?
- 2- What are the functions and the phonetic contexts of the glottal stop in English (exploring the function of the glottal stop and its contexts)?

### **II. The Hypothesis of the Study**

It is hypothesized that the glottal stop is used to conform many functions and it is difficult in pronunciation and recognition for most foreign learners of English who are specialized in English. In addition to that, it occurs in different phonetic contexts.

### **III. The Aim of the Study**

The present study aims at:

- 1- Shedding a spot light on identifying the glottal stop.
- 2- Recognizing the contexts and functions of the glottal stop.

### **IV. The Limits of the Study**

This study is limited to the identification of the glottal stop sound and its functions, contexts and other related phenomena in English, specifically in British English (henceforth BrE) and American English (henceforth AmE).

### **V. The Procedures of the Study**

To conduct this study, the following steps will be followed:

1. Reviewing briefly English consonants.
2. Presenting a thorough theoretical background of the glottal stop and some related concepts.
3. Giving a thorough description of the glottal stop and other related phenomena.

### **VI. The Value of the Study**

The present study is valuable for teachers of English and educators at university level. It is also of value for researchers, foreign learners and all those who are interested specifically in English phonology. In fact it fills a gap in the literature.

## Section One

### Consonants and Some Related Phenomena

#### 1.1 Consonants

Phoneticians like O'Connor (1998:24) states that "consonants contribute more to making English understood than vowels do". They are easy to describe and understand. Furthermore, differences of accents of English all over the world are mainly the results of vowel differences used in these different accents rather than consonants, especially when one knows that the consonants are pronounced in very much the same way whenever English is spoken, i.e., if the used vowels are imperfect in one way or another, it will not prevent one from being understood, but a great risk of misunderstanding is found if the consonants are imperfect.

It would be relatively easy to view consonant if each standpoint is associated with a similar definition. The widespread belief is that "a consonant is: 1- (in phonetics), a segment whose articulation involves a significant obstruction to air flow in the vocal tract.2- (in phonology), a segment which occupies a syllabic margin." (Trask, 1996:87)

Finch (2000;43), among most, if not all, phoneticians, phonologists or scholars, adds that consonant sounds are produced by obstructing the air flow as it comes up from the lungs. This distinguishes them from vowels, where the air flow is manipulated rather than obstructed. They are conventionally described in articulatory terms in respect of three main features; voicing, place of articulation and manner of articulation.

#### 1.2 Classification of Consonants

Broadly speaking, English consonants can be classified according to three criteria:

##### 1.2.1 Voicing

It must be acknowledged that voicing, as mentioned by, for example, (Kreidler, 2003: 35-6), is one of the three major parameters used to describe a sound, along with place and manner of articulation. It is usually treated as a binary parameter with sounds being described as either voiceless (unvoiced) or voiced, although in fact there can be degree of voicing. A voiced sound is one in which the vocal cords vibrate, and a voiceless sound is one in which they do not. Furthermore, as Knutsson (2006;1-2) argues consonants may be voiced or unvoiced. However, the terms are a little misleading i.e, unvoiced consonants are nearly always unvoiced, voiced consonants are not always fully voiced-or voiced at all. Therefore, it is more appropriate to distinguish them using the terms lenis (weak) to describe the voiced sounds and fortis (strong) to describe the unvoiced sounds. It has been common to state that voicing is the difference between pairs of sounds such as /s/ and /z/.

## **1.2.2 Place of articulation**

Place of articulation is the point in the mouth where two organs of speech come together to produce a sound. Kelly (2000: 47) indicates that "Describing the consonant sounds in terms of the place of articulation gives more information about what the various articulators actually do".

Consonants are made by producing an obstruction to the flow of air at some point in the vocal tract, and when we classify consonants one of the most important things to establish is the place where this obstruction is made; this is known as the place of articulation, and in conventional phonetic classification each place of articulation has an adjective that can be applied to a consonant. To give a few examples of familiar sounds, the place of articulation for [ p ] and [ b ] are bilabial, for [ f ] and [ v ] labiodental, for [ θ ] and [ ð ] dental, for [ t ] and [ d ] alveolar , for [ ʃ ] and [ ʒ ] post-alveolar, for [ k ] and [ g ] velar, and for [ h ] glottal (Roach, 2002:60).

However, classification of consonant sounds on the basis of their places of articulation produces another sound made in the larynx. It is made by the closure or narrowing of the glottis, (the aperture between the vocal cords). The audible release of complete closure at the glottis is known as 'glottal stop' transcribed [ʔ]. It is often used in English, for example, it may be heard before forcefully articulated vowel as in '*are you*' or between adjacent vowels as in '*co-operative*'. In several accents of English, especially those influenced by Cockney, this sound has phonemic status where it is used in some positions where Received Pronunciation a voiceless plosive ([t] and [k] especially). (Crystal, 2004:187)

## **1.2.3 Manner of articulation**

One of the most important things that is needed to know about a speech sound is what sort of obstruction it makes to the flow of air: a vowel makes very little obstruction, while a plosive consonant makes a total obstruction. The type of obstruction is known as the manner of articulation. As is well known, manner of articulation categorizes consonants into: plosives, affricates, fricatives, lateral, nasals and approximants (Roach, 2002:48-49)

## **Section Two**

### **Plosive (Stop) Consonants**

#### **2.1 Plosives**

In many ways it is possible to regard plosives as the most basic type of consonant. They are produced by forming a complete obstruction to the flow of air out of the mouth and nose, and normally this results in a build-up of compressed air inside the chamber formed by the closure. When the closure is released, there is a small explosion that causes a sharp noise. The basic plosive consonant type can be exploited in many different ways: plosives may take

different places of articulation, and may be voiced or voiceless. The airflow may be from the lungs (pulmonic), from the larynx (glottalic) or generated in the mouth (velaric) (Roach, 2002:60).

As described by Wells and Colson (1981:61), plosives are:

Sounds in which the air-stream is entirely blocked for a short time: in English, p, b, t, d, k, g. We can distinguish three phases in the articulation of a plosive: the APPROACH (as the articulating organs come together), the HOLD (as they stay together, preventing the air-stream from escaping), and the RELEASE (as they separate and allow the blocked air to escape). Some people distinguish a fourth stage, the PLOSION, when the characteristic noise of the escaping air is heard.

The articulators in question may form a stricture of complete closure; this is what happens when one produces the first sound in *pit*. Here the lower and upper lips completely block the flow of air from the lungs; that closure may then be released, as it is in *pit*, and may then produce a sudden outflow of air. Sounds which are produced with complete closure are referred to as stops (or plosives). However, the first sound in *pit* may be described as a voiceless bilabial stop (transcribed as [p]) The consonant in *abbey* is also a bilabial stop, but differs from that in *pit*: it is voiced. This consonant (transcribed as [b]) is a voiced bilabial stop. The first sound in *tin* is a voiceless alveolar stop; it is transcribed as [t]. Its voiced counterpart is the consonant in *ado*. This sound, the voiced alveolar stop, is transcribed as [d]. The first sound in *cool* is a voiceless velar stop; it is transcribed as [k]. Its voiced counterpart, the voiced velar stop, is transcribed as [g]; an example is the consonant in *ago*.

There is one further stop which must be mentioned, however, as it is very common in the speech of most speakers of English. This is the glottal stop (transcribed as [ʔ]). It is made by forming a constriction of complete closure between the vocal folds. This is the sound made instead of [t] in many Scottish and Cockney pronunciations of, for example, the word *butter*. It is present in the speech of almost every speaker of English, no matter what the accent is. There is no question of describing the glottal stop as voiced or voiceless, since it is articulated in the glottis itself. (Carr,:7-8).

## **2.2 Some Related Phenomena**

Many phonetic phenomena come as a consequence of the mutual influence of the adjacent sounds such as 'aspiration', 'devoicing', 'glottalization', 'free variation', etc. In this respect, any particular phoneme comprises a group of sounds that are phonetically similar, but whose articulations vary according to their position relative to other sounds which precede or follow them. For example, voiced phonemes such as,

/ m, n, ŋ, w, j, r, l / lose some of their features under the influence of being combined with other phonemes, so that they would become devoiced, i.e., if they are preceded by one of the voiceless phonemes /p/, /t/ or /k/ the whole

cluster is usually voiceless as in *pray* and *play*, where the /r / and /l / in these phonetic environments are devoiced (Wells and Colson, 1981:43; Roach,2000:38).

The environmentally conditioned variants of any particular phoneme in complementary distributions are known as 'allophones'. According to Finch, (2000:61) allophones are "the different phonetic realizations of a phoneme, simply they do not cause any change in meaning". Examples that can best illustrate these phonetic differences are the phonemes /p, t, k/ which are aspirated if they are initials, i.e., they are released with a buff of air such as, [p<sup>h</sup>, t<sup>h</sup>, k<sup>h</sup> ] as in *pit* [p<sup>h</sup>It], *tin* [t<sup>h</sup>In], and *kiss* [k<sup>h</sup>Is], respectively. But, if the same phonemes are preceded by the phoneme /s/ they are no longer aspirated as in, *spin* /spIn/, *steam* /sti:m/and *sky* /skaɪ/ .

In this regard, sounds can be called 'allophones' of a particular phoneme if the following conditions are available:

1-They are phonetically similar, i.e., they have the same major characteristics like, voicing, place of articulation and manner of articulation, for instance, /t/ and [t<sup>h</sup>] are alveolar stop [t].

2-They do not occur in the same phonetic context ,i. e. they are in 'complementary distributions' which simply mean that these allophones are regularly found in certain environments where they do not contrast with each other, that is they occur in mutually exclusive positions without being distinctive ( Kuiper and Allan,1996:51-3) .

Another significant concept which is worth mentioning here and also comes as a result of the mutual influence of the adjacent sounds is 'free variation'. Concerning this term Crystal(2004:165) points that:

In phonology the term 'free variation' refers to the SUBSTITUTIBILITY of one sound for another in a given ENVIRONMENT with no consequence change in word's MEANING as when a speaker articulates a word like *sit* with an unreleased or released PLOSIVES, or different pronunciations are given to either (/i:ð̥ər/ v. /aɪð̥ər/). Those different 'phonetic variants' founded in cases of COMPLEMENTARY DISTRIBUTION .

## Section Three

### The Glottal Stop (Plosives)

#### 3.1 The Glottal Stop

The glottal stop is a speech sound made by closing and opening the glottis which in English sometimes takes the place of /t/ as in *butter* for example (Crystal,2004:178). In principle, during the production of a complete glottal stop, the vocal folds are held together tightly for a brief moment, preventing

simultaneous phonation. Thus, a glottal stop should be unvoiced by definition. In the acoustic waveform of a complete glottal stop, a quiet closure phase may be distinguished, and a short burst of noise may often be observed just before the following sound begins. In practice, however, it is often difficult to distinguish between a glottal stop, very low-pitch voice, and creaky voice (i.e., glottalization or laryngealization), since these are phonetically similar and may occur next to each other in speech.

Ogden (2001:98) defines the glottal stop as one or more irregular glottal periods that occur within the same syllable. Thus, a glottal stop may sometimes be represented as a very short creaky phase in speech, and a complete stop closure is not required. According to Ladefoged and Maddieson (1996:75), the complete closure will often be lacking from intervocalic glottal stops, and a complete glottal stop will consistently occur only in those languages and positions where the stop is geminated (cited in Byrd,1993:111).

A glottal stop, symbolized [ʔ], is a 'plosive' made at the glottis (made by the vocal folds). The glottal stop is a catch in the throat, a sound that you make way down at the level of your vocal cords. The technical term "glottal stop" refers to closing the "glottis" (the vocal cords ) since a glottal stop is made by temporarily closing the vocal cords. In English the glottal stop sometimes used as an allophones of /t/ and sometimes has other functions, but it is not used to distinguish one word from another. Here are some of the environments where the glottal stop is heard in English ."(Applegate,2006:10):

-□in emphatic speech, words that start with vowels may have a glottal stop even when there's another word in front of them. It's easy to hear the difference between "the apple" — pronounced with a glottal stop — and "the apple" pronounced without. It is found in "go away" and "you're out." -another place where glottal stop shows up in English is between the vowels of exclamations like "oh oh" (expressing apprehension or an error) or "uh-uh" (for "no")

-for many speakers of American English, /t/ becomes an glottal stop when it comes right before certain other sounds, especially an /n/ in words like "lightning" or "kitten" or "got none", /t/ is also a glottal stop in a casual pronunciation of "let me see" or "wait nearby (ibid.).

### 3.2 The Occurrence of Glottal Stops

A glottal stop is a speech sound articulated by a momentary, complete closing of the glottis in the back of the throat. Glottal stop occurs in many languages and usually pattern as consonants. But the question is that whether the glottal stop is considered as a phoneme or an allophone in English?

Roach (2002:75) states that:

Glottal stops are found as consonant phonemes in some languages (e.g. Arabic); ..... Glottal stops are found in many accents of English: sometimes a glottal stop is pronounced in front of a / p /, / t / or / k / if there is not a vowel immediately following (e.g. 'captive', 'catkin',

'arctic'; a similar case is that of /t/ when following a stressed vowel (or when syllable-final), as in 'butcher'. One of the functions of a closure of the vocal folds is to produce a consonant. In a true glottal stop there is complete obstruction to the passage of air, and the result is a period of silence. The phonetic symbol for a glottal stop is [ʔ]. In casual speech it often happens that a speaker aims to produce a complete glottal stop but instead makes a low-pitched creak-like sound.

In many languages such as English where the glottal stop is not phonemic, glottal stops and glottal approximants as well as their intermediate variants tend to occur at the beginning of vowel-initial words and/or at intervocalic morpheme boundaries. This phenomenon may be called final or initial doubling. When a complete glottal stop occurs at the end boundary of a word where final or initial doubling is applicable, the glottal stop may respectively be longer in duration, i.e., it may be "doubled" like any other consonant at a similar juncture (Itkonen 1975: 65).

Although it is possible to list factors that increase the probability of a glottal stop in different languages, it is difficult to predict exactly when a glottal stop will occur. Prosodically, a glottal stop or a glottal approximant may in many languages including English be used for emphasizing the next word or a prosodic boundary. Word-initial vowels are more frequently glottalized (i.e., glottal stops or approximants are produced) at major prosodic boundaries (Pierrehumbert and Talkin 1992:112). In some forms of British English, the glottal stop is used as a segmental variant of /t/, or instead of word-final or intervocalic/p/ and /k/.

### **3.3 The Functions of the Glottal Stop**

Glottalization (glottal stop) often occurs intermittently in normal speech, where it can play a communicative role, for example, in American English glottalization (glottal stop) can serve as an allophones of voiceless stops (particularly syllable final /t/) and it often occurs at the onset of vowel-initial words that begin a new intonation phrase or carry a pitch accent (a phrase-level prominence) (Pierrehumbert, J. and Talkin, D,1992:113).

In English the glottal stop is sometimes used as a kind of /t/-sound, and sometimes has other functions:-

1- In certain positions [ʔ] may be used as an allophone of the phoneme /t/, as when *pointless* /'point les/ is pronounced /'poinʔ les/. This is known as glottalling or glottal replacement of /t/.

It is condemned by some people; nevertheless, it is increasingly heard, especially in British English. Sometimes the glottal articulation accompanies a simultaneous alveolar articulation.

2- [ʔ] is found as an allophone of /t/ only

- □ at the end of a syllable, and
- □ if the preceding sound is a vowel or sonorant

Provided these conditions are satisfied, it is widely used in both BrE and AmE where the following sound is an obstruent.

- football* 'fʊt bɔ:l → 'fʊ? bɔ:l  
*outside* aʊt 'saɪd → aʊ? 'saɪd  
*that faint buzz* ðæt feɪnt "bʌz → ðæ? feɪnt "bʌz

— **or a nasal**

- atmospheric* æt məs "fer ɪk → æ? məs "fer ɪk  
*button* 'bʌt n > 'bʌ? n  
*that name* ðæt 'neɪm → ðæ? 'neɪm

— **or a semivowel or non-syllabic /l/**

- Gatwick* 'gæt wɪk → 'gæ? wɪk.  
*quite well* kwaɪt "wel → kwaɪ? "wel  
*brightly* 'braɪt li → 'braɪ? li

Some speakers of BrE also use it at the end of a word under other circumstances as well:

- not only this* nɒ? əʊn li ' ðɪs  
*but also that* bət? ɔ:l səʊ 'ðæ?.

Compare AmE na:t əʊn li 'ðɪs, bət ɔ:l səʊ 'ðæt; in this position t is also heard in casual BrE.

3- [ʔ] is also optionally used as a way of adding emphasis to a syllable that begins with a vowel sound . It can be used to separate adjacent vowel sounds in successive syllables (to avoid hiatus). In BrE this can be a way of avoiding r (r liaison), as in one pronunciation of

*underexpose* ʌnd ə ɪk 'spəʊz (-ə?ɪk-).

4- [ʔ] also forms an essential part of certain interjections, e.g.

*AmE uh uh* ?ʌ? 'ʌ?.

5- A glottal stop is sometimes used, especially in BrE, to strengthen /tʃ/ or /tr/ at the end of a syllable, and also /p, t, k/ if followed by a consonant or at the end of a word. This is known as glottal reinforcement.

- teaching* 'ti:tʃ ɪŋ → 'ti:ʔ tʃ ɪŋ  
*April* 'eɪp rəl → 'eɪʔp rəl.  
*right!* raɪt → raɪʔt

Foreign learners of English should be careful not to apply glottal reinforcement (as opposed to glottal replacement) in words such as:

*pretty* 'prɪt i,

*jumping* 'dʒʌmp ɪŋ (Ohm, 2002:1-3)

### 3.4 The Phonetic Contexts of the Glottal Stop

The glottal stop can appear word-medially or word finally but never (at least not yet) word-initially. Sullivan, in her book entitled "**Sound Change in Progress: a Study of Phonological Change and Lexical Diffusion, with Reference to Glottalization and r-Loss in the Speech of Some Exeter Schoolchildren**", published in 1992, lists the different contexts in which glottalization (pre-glottalization or glottaling) can appear. According to her the glottal stop is not a phoneme in English, but a sort of allophone of voiceless plosive, and it only appears in free variation, which means that, unlike /l/ and its dark allophone, there is no precise rule to determine and anticipate where will appear and where it will not. In this regard Crystal (2004:165) points that:

In traditional phonological studies, 'free variation' has been considered to be an area of little importance; but in recent SOCIOLINGUISTIC studies, it is suggested that 'free variants' need to be described, in terms of the frequency with which they occur, because of the choice of one variant rather than another may be made on sociological grounds, as when one 'chooses' a 'careful' rather than a 'casual' speech style.

However, only possible contexts, based on researches and recordings of native English people, can be enumerated to determine where it can appear. Glottalization can appear in the following possible contexts as mentioned by Sullivan (1992:46):-

#### **word medially**

- when precede by a stressed vowel and followed by an inflectional morpheme, e.g., ' *bak/ed*', ' *hat/s*', ' *hope/d*'.
- when preceded by a stressed vowel and followed by a consonant, e.g., ' *fiction*', ' *opera*'.
- when preceded by a stressed vowel and followed by a vowel or a syllabic, e.g., *city*, *jacket*, *bottle*, etc (glottalization in this context is not very common in RP or Estuary, but is quite frequent in Cockney).
- when preceded by a stressed vowel and followed by a syllabic nasal, e.g., *bottom*, *Britain*, etc.
- when preceded by unstressed vowel and followed unstressed or secondary stressed vowel, e.g., *visitor*, *seniority*, etc.

#### **- word final**

- when preceded by a vowel and followed by another word beginning with a consonant, e.g., *put them*, *think so or flip through*.
- when preceded by a vowel and followed by another word beginning with a vowel, e.g., *sort of*, *look into*, *or keen on*.
- when preceded by a vowel and followed by a pause or nothing, e.g., *quite—um... or what?*
- when compound words, at the end of the first morpheme, e.g., *milk/man*, *light/weight*.

(Sullivan,1992:46).

### 3.5 Glottalization

Glottalization is a general term for any articulation involving a simultaneous glottal constriction, especially glottal stop. In English glottal stops are often used in this way to reinforce a voiceless plosive at the end of a word as in *what?* {wDʔ} (Crystal, 2003:187).

This phenomenon refers to the complete or partial closure of the glottis during the articulation of another sound. There are two ways to represent glottalization in IPA: 1- the same way as ejectives with an apostrophe or 2- with the under-tiled for creaky voice. Glottalization of vowels and voice consonants is most often realized as creaky voice (partial closure). Glottalization of voiceless consonants usually involves complete closure of glottis; another way to describe this phenomenon is to say that a glottal stop is made simultaneously with another consonant. In certain cases, the glottal stop can even wholly replace the voiceless consonant (wikipedia, 2009:1). Two other important phenomena result from glottalization, namely, 'glottal replacement' and 'glottal reinforcement'.

The addition of a glottal stop is sometimes called glottalisation or glottal reinforcement. In some accents, the glottal stop actually replaces the voiceless alveolar plosive [t] as the realisation of the /t/ phoneme when it follows a stressed vowel, so that 'getting better' is pronounced this is found in many urban accents, notably London (Cockney), Leeds, Glasgow, Edinburgh and others, and is increasingly accepted among relatively highly-educated young people (Roach,2002:78).

#### 3.5.1 Glottal Replacement

When a phoneme is completely substituted by a glottal stop [ʔ], one speaks of glottaling or glottal replacement. This is, for instance, very common in Cockney and Estuary English. In these dialects, the glottal stop is an allophone of /p/, /t/, and /k/ word-finally and when precede by a stresses vowel and followed by unstressed vowel (this is also includes syllabic/l/, /m/, and /n/) e.g. 'city' [sɪʔɪ], 'bottle' [boʔtəl] 'Britain' [brɪʔ ən] , 'seniority' [si:nɪdrəʔi] (Sullivan,1992:46). In some languages glottal replacement is not purely a feature of consonants but also of vowels (Wikipedia,2009:2).

#### 3.5.2 Glottal Reinforcement

When a phoneme is accompanied (either sequentially or simultaneously) by a [ʔ], then one speaks of pre-glottalisation or glottal reinforcement. This is very common in all accents of English, including RP; /t/ is the most affected but /p/, /k/ and even occasionally /t/ are also affected (Roach, 1973:10). In English the dialects exhibiting pre-glottalisation, the consonants in question are usually glottalized in the coda position, e.g., 'what' [wDʔt], 'fiction' [fiʃɛn], 'milkman' [mɪlkmen], 'opera' [oʔpre]. To a certain extent, there is a free variation in

English between glottal replacement and glottal reinforcement (Sullivan, 1992:46).

### 3.6 The Sociolinguistic and History of Glottalization

In particular, while the glottal stop is spreading rapidly in mainstream English, glottal reinforcement (especially of /p/ and /k/ in intervocalic positions) is possibly recessive. It is characteristic not only of Tyneside male speech but also of rather conservative rural varieties, such as those of south-west Scotland and much of Northern Ireland. (Docherty et., al:306).

Docherty *et al*(1997:307) have note that several sociolinguistic accounts have shown a sharp distinction between the social trajectories for glottal replacement as opposed to glottal reinforcement, which have normally been treated by phonologists as aspects of the same thing. It may therefore not always be appropriate to treat the two phenomena as manifestations of a single process or as points on a single continuum (presumably along which speakers move through time). From the speaker's point of view (as manifested by different patterns of speaker behaviour) they appear as independent phenomena. (ibid.).

The two types of glottal variant are clearly distinct in Newcastle English, where they moreover exhibit quite different sociolinguistic patterns. The replacing glottal stop "is variably substituted for noninitial pre-vocalic /t/ (e.g. in *set off, water*) by younger speakers, especially middle-class females, and as such appears to be a non-local form entering Newcastle English", whereas the preglottalized variants by contrast, are largely the preserve of older males. (Docherty & Foulkes 1999: 54). The glottal stop or glottalization may have sociolinguistic functions. Kirk (1967) shows that in Northern Ireland, Protestants employed these sounds more frequently than Catholics.

It turns out that, "older males appear to be producing glottalised tokens with a different articulatory co-ordination than other members of the speech community: they have a greater tendency to time the oral gesture such that it lags behind the accompanying glottal articulation" (Docherty & Foulkes,1999:61). Thus, preglottalization is disappearing from the language while the replacing glottal stop is spreading in the speech of the younger generation. Kortlandt (1997:178) supports the view that the 'reinforcing' glottal closure of ['p], ['t], ['k] is ancient, in spite of the recent spread of the replacing glottal stop in mainstream English.

While the "increasing space given by phoneticians from about 1920 onwards to the treatment of the glottal stop" (Andrésen 1968: 34) can be explained by the phonemic character of the glottal replacement, the earlier preglottalization of /p/, /t/, /k/ went unnoticed because it was not distinctive. Glottalization is pervasive in pre-1930 audio recordings of people born in the second half of the 19th century, even in formal delivery (Kortlandt, 1997:179).

It follows that glottalization was well-established in upper-class English speech in the 19th century and must have been widespread in the standard language of that time. The lack of attention to this phenomenon can be explained not only by the subphonemic character of preglottalization but also by its loss in pre-pausal position. While "glottal variants are widespread in various phonological contexts in Newcastle, they are almost categorically prohibited in pre-pausal position. Tokens before a pause are instead (from an auditory perspective) clearly 'released' 'voiceless alveolars' (Docherty & Foulkes 1999: 62). It appears that either the glottalization or the buccal features could be lost in pre-pausal position. "In Derby glottal stops in pre-pausal position are far more widespread, but in the self-conscious context of word-list readings most speakers produce what sound like 'released' [t]s, just as in Newcastle". This suggests that pre-pausal [t] is due to restoration and that the spread of the replacing glottal stop in mainstream English may have started from pre-pausal positions (cited in Kortlandt,2009:5).

This brings the original distribution of the English glottalization closer to its Danish counterpart, the so-called (vestjysk stød) which is found immediately before the plosives /p, t, k/ wherever these stand in an original medial position, following a voiced sound in a stressed syllable. The preglottalization of English can not separated from the preaspirated stops in northern Scandanavian languages (ibid:6).

## Results

The results of the present study can be outlined in the following points:

- 1- Nearly all phoneticians, phonologists and scholars of English agree on a fact that the glottal stop is not a phoneme in English, instead, it is sometimes considered as an allophone of the voiceless plosives, especially, /t/ in some accents of English. The use of the glottal stop [ʔ] in place of /t/ and other voiceless plosives is on the increase in present-day English. The situation is rather complicated, but here are some points which should be noted about its occurrence:
  - [ʔ] is found at the end of a syllable (mostly occurs in the coda position).
  - It is preceded by a stressed syllable.
  - It is precede by a vowel or a sonorant consonant (especially, /n/ and /l/) and followed by a consonant.
- 2- Although the glottal stop is sometimes considered as an allophone of the voiceless plosive /t/, it does not occur in complementary distribution with the other allophones of this phoneme, but it only appears in free variation, i.e. there is no precise rule that regulates its occurrence.
- 3- It seems that there is also a free variation in using glottal replacement or glottal reinforcement in English, furthermore, glottal reinforcement is ancient in spite of the recent spread of the glottal replacement in mainstream English, especially in accents like Cockney and the accents of the London area (the Thames Estuary).

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