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Phonetic realization of coda /t/ in current Southern British

English pronunciation

Fonetická realizace kodového /t/ v současné jihoanglické výslovnosti

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Prohlášení

Prohlašuji, že jsem bakalářskou práci vypracovala samostatně, že jsem řádně citovala všechny použité prameny a literaturu a že práce nebyla využita v rámci jiného vysokoškolského studia či k získání jiného nebo stejného titulu.

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Declaration of Authorship

I declare that the following BA thesis is my own work for which I used only the sources and literature mentioned, and that this thesis has not been used in the course of other university studies or in order to acquire the same or another type of diploma.

Prague, 11 May 2022

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Abstrakt

Foném /t/ je známý tím, že se v rámci anglicky mluvícího světa v řeči vyskytuje v široké škále realizací. Jeho realizace je podmíněna jak lingvistickými faktory, jako je fonetický kontext nebo přízvuk, tak faktory sociálními, jako je geografická oblast, pohlaví či socioekonomické pozadí. Cílem této bakalářské práce je prozkoumat a analyzovat realizaci kodového /t/ v současné jihoanglické výslovnosti. Teoretická část práce obsahuje obecný popis exploziv ve světových jazycích, přehled různých realizací /t/ ve variantách angličtiny a také popisuje současný vývoj výslovnosti ve standardní britské angličtině. V rámci empirické části byly pořízeny a zpracovány nahrávky 16 mluvčích jihoanglické výslovnosti z politických rozhlasových debat. Dále byla provedena poslechová analýza fonetické realizace cílových souhlásek a následně byl vyhodnocen výskyt jednotlivých variant z hlediska segmentálního, prozodického i sémantického kontextu. Výsledky potvrzují, že na realizaci /t/ v řeči má vliv jak slovní přízvuk, pozice slova ve větě, jeho segmentální prostředí a sémantický status, tak pohlaví mluvčího. Dále práce dokumentuje současný vývoj sociolingvistického statusu glotalizace, jež se zároveň prokázala jako nejčastější realizace /t/ v rámci tohoto výzkumu.

Klíčová slova: foném /t/, britská angličtina, alofon, kodové /t/, jihoanglická výslovnost, glotalizace, alveolární švih

Abstract

The phoneme /t/ is known for featuring a wide variety of realizations in speech throughout the English-speaking world. Its realization is conditioned both by linguistic factors, such as phonetic environment or stress, and by social factors, such as region, sex, or socioeconomic background. The present bachelor thesis aims to explore and analyse the manifestations of coda /t/ in current Southern British English pronunciation. The theoretical section includes a general description of stops in world languages and an overview of various realizations of /t/ in varieties of English and recent pronunciation developments in standard British English. In the empirical part, recordings of 16 speakers of Southern British English from political radio debates were collected and processed. An auditory analysis of the phonetic realization of the target consonants was conducted and subsequently, the occurrence of individual variants was evaluated in terms of segmental, prosodic as well as semantic context. The results confirm that stress, the word's position within a phrase, its segmental environment and semantic status, and the speaker's sex all have an influence on the realization of /t/ in speech. Furthermore, the thesis documents the recent development of the sociolinguistic status of glottalling, which has also proven to be the most frequent realization of /t/ in terms of this research.

Key words: phoneme /t/, British English, allophone, coda /t/, Southern British English pronunciation, glottalling, alveolar flap

List of Abbreviations

SSB(E) – Standard Southern British (English)

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1 Introduction

The English alveolar plosive /t/ is characterized by its extensive variability in speech throughout the English-speaking countries. The actual realizations of the phoneme may differ in a variety of aspects, namely the place of articulation, airstream mechanism, laryngeal setting, or other properties. There are several factors which may determine the type of sound produced – these may be internal, which include, for example, the consonant's phonetic environment, its position within a word or stress, and external, which refers to features such as dialect, the style of communication or the speaker's sex. This thesis, therefore, aims to explore the realization of /t/ in a particular variety of English, that is to say Standard Southern British English.

The theoretical part of the work deals with stops in general and the different manifestations of /t/ in speech. The opening chapter focuses on a general description of stops and their production in world languages, placing emphasis on those aspects, which may serve to describe and compare different types of stops, namely the place of articulation, the airstream mechanism, or the laryngeal setting – particularly different types of phonation. The following chapter is concerned with particular realizations of /t/ in varieties of English and the processes which affect the sound, for instance, aspiration, glottalling, or flapping. Special attention is paid to recent developments in the pronunciation of SSBE, whose history is also explored to some extent.

In the empirical part, an auditory analysis of recordings of 16 speakers – 8 female and 8 male – of Southern British English pronunciation from political radio debates is carried out, focusing on the phonetic realization of the target consonant, that is, /t/ in the syllabic coda (as in *better*). The coda position was selected since it is conducive to many processes affecting /t/, and thus the realizations of /t/ in this position can be expected to vary to a great extent. For the purpose of the analysis, seven types of realization are recognized, namely 'normal', glottalized, flapped, unreleased, elided, slit and ejective. The particular instances are evaluated with respect to the segmental, prosodic as well as semantic context. Individual as well as general conclusions are drawn, and compared with the general tendencies stated in the existing research and literature on the subject.

2 Stops

Before we focus on the particular plosive /t/ and its various realizations in the English language, the following chapter will be devoted to a more general introduction of stops which occur in the world's languages.

2.1 Definition

First, it might be useful to make some clarifications in terms of terminology in order to avoid any further confusion. The first point to be made concerns the way in which the terms *stop*, and *plosive* will be used throughout this paper. Even though the aforementioned terms tend to be used interchangeably, they are not to be considered absolute synonyms. The distinction primarily lies in different perspectives, that is to say different motives for the description of sounds. The term *stop* consonant has relevance to the articulatory point of view, referring to the manner of articulation which involves the blockage of the airflow in the oral cavity during the production of the sound, hence the label *stop*. The term *plosive*, on the other hand, directs attention to the acoustic or perceptual perspective – in other words, it alludes to the release burst, or plosion, which occurs at the release phase during the production of these consonants.

As a further matter, the term *plosive* refers only to a particular type of stops – the most frequently found type of stops, according to Maddieson (1984) – which are made with an egressive pulmonic airstream; however, in certain languages there are also stops made with different airstream mechanisms, which will be briefly mentioned later in the chapter. Therefore, the terms will be used in accordance with this distinction, which corresponds to the usage practices in the relevant literature (e.g., Ladefoged & Maddieson, 1996; Henton, Ladefoged, & Maddieson, 1992). Secondly, another matter that demands clarification is related to the fact that the term *stop* is at times also used as an umbrella term for both oral and nasal stops on the grounds that both involve a complete closure of the articulators in the oral cavity. However, in the case of a nasal stop, as opposed to an oral stop, the airstream is not completely obstructed, as the velum is not raised, and is allowed to escape through the nasal tract. Nevertheless, Ladefoged and Johnson (2011, p. 14) claim that even though both the sounds – oral and nasal – fall under the classification of stops, the term is rarely used by phoneticians to indicate a nasal stop and generally tends to be used in the context of oral stops.

Having established the distinction between the terms, we will now proceed to define stops in general, that is, how and where these consonants are produced as well as in what ways they can be classified and distinguished one from another. As Ladefoged and Maddieson (1996, p. 47) have stated, “stops are the only kind of consonants that occur in all languages.” These consonants, as has already been remarked, are produced by means of a complete closure between the two articulatory organs, which allows for no air to get through. There is a great variety of stops to be found in the languages of the world and they can be distinguished from each other in several different ways. Stops can be described not only in terms of the manner of articulation but also in terms of the place of articulation. Moreover, there are several other aspects on the basis of which stops may be compared, namely, the airstream mechanism, the variations in the glottal state (phonation types) and the variable articulatory activity that occurs during two of the stages in the production of a stop, namely onset and offset (Henton et al. 1992). Furthermore, Ladefoged and Maddieson (1996) list two other potentially distinctive qualities, that is length and strength. All these contrastive aspects will now be separately examined in the following section, although it is important to note that to summarize all of them is a rather complex task since, according to Ladefoged and Maddieson (1996), the boundaries between the particular categories are by no means neat, and in many cases overlap. They are principally better to be regarded as points within a continuum. Even though the following subchapters will describe the various distinguishing aspects regarding stops, we will not list the individual possibilities of all the sounds and their IPA symbols, except for those in English, since this thesis is primarily concerned with English stops.

2.2 The Formation of a Stop

As has already been pointed out, stops are formed by a complete closure of airflow in the vocal tract. During the production of an (oral) stop, the soft palate, also known as the velum, is raised in order to prevent any air from escaping through the nasal cavity (as opposed to nasals). The closure is then carried out in the oral cavity by particular parts of the vocal tract which are called the *articulators*. The types of these articulators, their locations and their movement will be discussed in the following subchapter which deals with places of articulation. We will now move back to the formation of a stop, which can be divided into three phases. The first phase, which is usually referred to as the *onset* of a closure or the closing phase, is characterised by the articulators moving towards each other. The second phase, also called the *closure* or the compression phase, occurs when the articulators are held together and thus the

compressed air is blocked from escaping from behind the stricture. Afterwards, the articulators reopen and move apart in order to let the compressed air escape, which marks the third phase – the *offset* of the closure, or also the release phase (Henton et al. 1992).

With regard to the acoustic point of view, it is appropriate to include a fourth phase in the description. This stage, however, relates only to plosives – stops made with an egressive pulmonic airstream. So even though plosives are the type of stops that this thesis is primarily concerned with, it might be worth repeating that despite the fact that plosives are the most prevalent type of stops, there is a small number of stops made with different airstream mechanisms. The production of these stops will not involve the phase in question which is called the post-release phase. It represents the stage immediately after the release during which a noise called aspiration may (but does not necessarily have to) be produced. The noise is caused by the air being under pressure during the time that the articulators move apart. Now that we have described how the articulators move in order to form a sound, we will proceed to the description of where these movements take place.

2.3 Place of Articulation

Owing to the fact that the articulatory process represents one of the key components of the speech production mechanism, Ladefoged and Maddieson (1996, p. 9) argue that “[t]he place of an articulation is one necessary parameter in describing the pattern of controlled movements required to generate a sound.” In other words, the place of articulation is regarded as one of the primary ways to describe the production of consonants and this process involves the movement of particular parts in the vocal tract. This movement can occur at a variety of different locations within the oral cavity, that is, at different places of articulation. The particular parts of the vocal apparatus which are used in order to form sounds are known as articulators. As has been illustrated in the previous subchapter, with regard to stops, the movement involves the parts – articulators – coming so close to each other as to create a complete closure between each other, leaving no space for air to get through. However, not all parts of the vocal tract possess the ability to move. It is principally those articulators that are to be found on the lower surface of the vocal tract that carry out the movement as they are highly mobile. These articulators “make gestures required for speech by moving toward the articulators that form the upper surface” (Ladefoged & Johnson, 2011, p. 8). Therefore, the task to list all the possible places of articulation is not very straightforward, since, as stated by

Ladefoged and Maddieson (1996, p. 9), “[w]e must say what moves, in which direction it moves, and how fast it is moving”. Before moving to the description of the particular articulators, it is important to note that the classes that will be introduced certainly do not have rigid boundaries and they are rather “simply labels for commonly found articulatory possibilities within a continuum” (Ladefoged & Maddieson, 1996, p. 43).

In order to illustrate all the possibilities of articulation of stops, it is necessary to address both the active articulators and the target articulatory places as well as their interaction between each other. So as to present those articulators that are responsible for the movement within the oral cavity, we will now introduce five major areas of the vocal tract where the principal moving articulators are located (Figure 1). The lips represent the labial area, the tip and blade of the tongue represent the coronal area, the body of the tongue indicates the dorsal area, the root (and epiglottis) mark the radical area, and glottis stands for glottal articulations. Furthermore, we will present all the possible target regions – that is, the passive articulators – within each of these areas (Figure 2). These articulators are located on the upper or back surface of the vocal tract. Ladefoged and Maddieson (1996, p. 13) register nine target articulatory places used in consonant gestures, namely labial, dental, alveolar, post-alveolar, palatal, velar, uvular, pharyngeal and epiglottal. In addition, the list includes glottal gestures which are “produced by the vocal folds acting as articulators” (Ladefoged & Maddieson, 1996, p. 13). With reference to stops in particular, all of these gestures are relevant with the exception of the pharyngeal target region which is the only one not used for stop consonants.

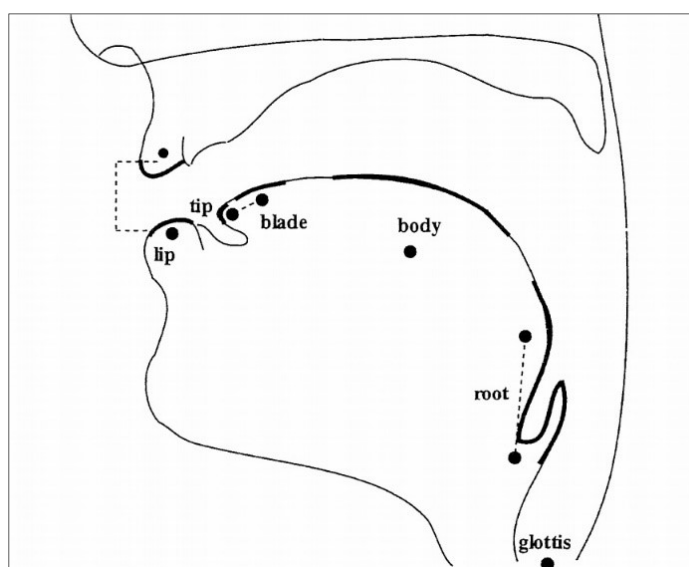


Figure 1 The five major active parts of the vocal tract (Ladefoged & Maddieson, 1996: 12).

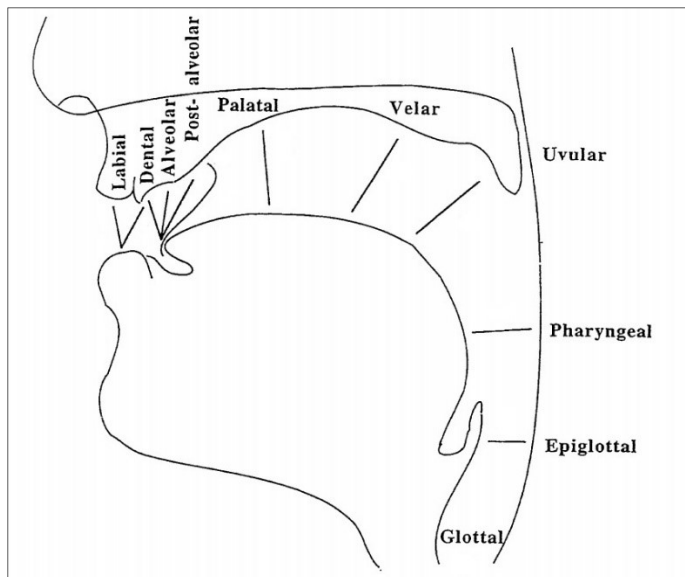


Figure 2 The nine target regions for the active articulators (Ladefoged & Maddieson, 1996: 13).

2.3.1 Labial

Even though it has been stated above that the moving articulators are predominantly to be found on the lower surface of the vocal tract, the first set of articulators includes both the lower and the upper lip. However, Ladefoged and Maddieson (1996, p. 10) reveal that despite the fact that “movements of the upper lip play a prominent role in some articulatory gestures,” the larger movements still tend to be performed by the lower lip. The gestures which are carried out through the involvement of either upper or lower lip are called *labials*. There are two possible target places for the lower lip as an active articulator, that is, the upper lip or the upper teeth. The stops which consist in the lower lip articulating with the upper lip are labelled as *bilabials*. As noted earlier, bilabial stops, unlike the majority of stops, are produced by the movement of an articulator not only on the lower surface of the vocal tract but also on the upper surface. In other words, both articulators – the active as well as the target one – are in motion. It has been stated that the other target articulator for the lower lip is the upper teeth, forming the *labiodental* place of articulation. Ladefoged and Maddieson (1996, p. 17) confirm that “they [labiodental stops] have been reported among languages of Southern Africa”; they may also be found in children’s speech as “children often produce bilabials as labiodentals” (R. Skarnitzl, personal communication, November 28, 2021). There is one more articulatory gesture which can be associated with the labial region – *linguo-labial* – as it involves contact with the upper lip. The movement, however, is performed by the tongue, thus it is commonly placed within the *coronal* region where the second set of active articulators is located.

2.3.2 *Coronal*

Coronal gestures are those formed with the tongue – specifically with the tip or the blade of the tongue. This possibility creates subsequent dividing categories. Those sounds produced with the tip of the tongue are labelled as *apical*. Those articulations using the blade of the tongue are to be found under the term *laminal*. Lastly, some articulations employ the underside of the tip of the tongue and those are called *sub-apical*. What is typical for the sub-apical contact is the retroflex position of the tongue, that is to say a position when the tip of the tongue is curled backwards to some degree (Ladefoged & Maddieson, 1996). This is why this type of articulation can often be found under the term sub-apical retroflex. Coronal articulations involve the majority of articulations produced in the dental, alveolar and post-alveolar regions – these being the target locations for the active articulators. With regards to all three regions, both laminal and apical gestures can be found, thus forming a wide range of possibilities comprising of *laminal dental*, *laminal alveolar*, *laminal post-alveolar*, *apical dental*, *apical alveolar* and *apical post-alveolar*. However, according to Ladefoged and Maddieson (1996), dental stops tend to be laminal while the alveolar stops are usually apical. In addition to the aforementioned articulations, it is also possible for the tip of the tongue to protrude between the teeth causing the blade to touch the underside of the upper teeth: this type of articulation is known under the term *interdental* (Ladefoged & Maddieson, 1996). The classification of coronal articulations is no straightforward matter since “there are two interacting continua” with a rather wide array of options for both the active articulator – the particular part of the tongue involved varies – and the target location – “the terms interdental, dental, alveolar, post-alveolar all refer to points within a continuum rather than discrete locations” as there is no clear dividing line between the dental and alveolar region, and owing to their curvature, the front teeth merge into the alveolar surface (Ladefoged & Maddieson, 1996, p. 44).

2.3.3 *Dorsal*

For the third set of articulations, it is once again the tongue playing the part of a moveable articulator. However, *dorsal* articulations, in contrast to coronal, are made with the body of the tongue, the mass of the tongue located further back right behind the blade. As for the target regions, these gestures are linked to the *palatal*, *velar*, and *uvular* areas. The most prominent of these within the group are velars as nearly all languages feature velar stops. The name already suggests that the formation of a velar articulation involves the body of the tongue making contact with the velum, also known as the soft palate. Ladefoged and Maddieson (1996)

point out that, again, the velar region offers a continuum rather than a single location, so it is possible to recognize front, central and back velar gestures. Their research also shows that languages do not tend to exhibit palatal, velar, and uvular articulation at the same time.

2.3.4 *Radical, Epiglottal and Laryngeal*

The next active part of the vocal tract, which involves pharyngeal and epiglottal sounds, is located in the *radical* region. However, we do not need to pay any attention to the pharyngeal sounds as there is no language which features pharyngeal stops on a regular basis. Epiglottal gestures are naturally formed by the epiglottis, or also by the root of the tongue. Their relationship, as Ladefoged and Maddieson (1996, p. 11) claim, “is similar to that between the tip and blade of the tongue” as “[t]hey can be moved separately...but only one or the other can be the principal articulator in any given sounds.” Finally, the last recognized place of articulation for stops is the *laryngeal* area where the glottis operates as the articulator.

2.4 Airstream Mechanism

Even though plosives remain the most prominent type of stops, there is a number of stops made with different types of airstream mechanisms, namely *glottalic* and *velaric*. Nevertheless, Ladefoged and Maddieson (1996, p. 78) emphasize the fact that “the presence or absence of a glottalic mechanism is often a matter of degree” rather than a clear-cut label, as some stops might at times display some ejective tendencies – for example the English plosive /t/ when accompanied by a glottal stop, which is a common feature in some varieties of English, exhibits a slight movement of the larynx; this movement signals the glottalic airstream. The labels will, nevertheless, serve our purpose to introduce the different ways of movement of air in the vocal tract.

2.4.1 *Plosives*

It has been mentioned earlier that nearly all stops are made with the pulmonic airstream mechanism. Actually, it does not only concern stops, since the majority of sounds produced in all languages in the world are made with the *pulmonic* airstream mechanism, a mechanism which consists in the air being pushed from the lungs and through the vocal tract, and the stops that use this egressive, that is to say outward-flowing, airstream are called plosives.

2.4.2 *Ejectives*

We will now focus on stops made with an egressive *glottalic* airstream which are known under the term *ejectives*. These stops actually occur in about 18 percent of the languages of the world, which means they are not quite so rare (Maddieson, 1984). The formation of ejectives lies in the movement of the closed glottis which takes place during closure in the oral cavity. Ladefoged and Maddieson (1996, p. 78) explain that “[t]he larynx is raised rapidly upwards, so that air in the vocal tract above the glottal closure is compressed,” during which “the pressure behind the closure in the oral cavity is often increased to about double the normal pulmonic pressure.” Once the closure in the oral cavity gets released, it produces much “greater amplitude in the stop burst” (Ladefoged & Maddieson, 1996, p. 78). With regard to the favoured places of articulation, studies confirm that ejective stops are most likely to occur at the velar region (Javkin 1977, Maddieson 1984). While uvular ejectives also occur quite frequently, palatal ejectives tend to be fairly rare and the bilabial area really is rather disfavoured (Ladefoged & Maddieson, 1996, p. 79).

2.4.3 *Implosives*

We will move onto another type of stops made with a glottalic airstream mechanism – this time, it is an ingressive one – which are called *implosives*. The formation of the stop involves the larynx moving downwards, which draws the air inwards. The laryngeal setting can, however, differ – either the glottis is open to some extent with the air from the lungs being released, partly flowing through the glottis and in between the vocal folds, which maintains their movement, causing the stop to be voiced, thus producing a voiced implosive (Ladefoged & Johnson, 2011); the second option are implosives produced with a full glottal closure. According to Ladefoged and Johnson (2011), implosives contrast with plosives in many languages, although in some, they function merely as allophones of voiced plosives.

2.4.4 *Clicks*

Finally, those stops which use the ingressive velaric airstream mechanism are labelled as *clicks*. During the production of these stops, there occurs a “rarefaction of air enclosed between two articulatory closures formed in the oral cavity,” after which “the more forward closure is released,” producing a click sound (Ladefoged & Maddieson, 1996, p. 246). While implosives and ejective stops are distinguished from plosives only in minor aspects and small

steps, clicks differ to a great extent from other types of stops (Ladefoged & Maddieson, 1996). Therefore, no more space within this work will be devoted to them as a subject matter.

2.5 Laryngeal Setting

We have established that apart from differences in the place of articulation and airstream mechanisms, stops may be contrasted on the basis of different laryngeal setting. The laryngeal setting can vary either in terms of “the mode of action of the larynx, or in the timing of laryngeal activity in relation to the oral articulation” (Ladefoged & Maddieson, 1996, p. 47). During speech, air usually moves through the glottis, past the vocal folds, making them vibrate. In order to produce particular sounds, speakers are able to regulate the activity of the glottis either through closing or opening of the vocal folds. In their study, Gordon and Ladefoged (2001, p. 383) confirm that people can initiate not only “regular voicing vibrations at a range of different pitches, but also harsh, soft, creaky, breathy and a variety of other phonation types.” The aforementioned study also argues that “differences in phonation type signal important linguistic information in many languages, including contrasts between otherwise identical lexical items and boundaries of prosodic constituents” (Gordon & Ladefoged, 2001, p. 383). In other words, in some languages, phonation can serve as a means to alter the meaning of a lexical item, that is to say carry a different meaning. Yet, in another language the same type of phonation might be perceived as a defective attribute. As Ladefoged (1983, p. 351) formulated informally “one person’s voice disorder might be another person’s phoneme.” In this subchapter, we will, therefore, aim to present a selection of the possible activities and modes of the glottis.

2.5.1 Onset Activities

According to Henton et al. (1992, p. 66), even though glottal activity may occur in the course of each of the three phases in the production of a stop, “the number of discrete activities associated with the onset of a stop are far more restricted than those which adhere to the closure or offset portions.” Thus, first of all, we will shortly address the activities which can be found during the onset stage, and then glottal variations linked to the closure and offset phase will be introduced. As the onsets of stops do not tend to exhibit contrasts among stops in many languages, it can be said that there is a general tendency for onsets to be voiced if occurring in a vowel – consonant – vowel sequence, and voiceless if positioned in voiceless clusters while representing the second part of it (Henton et al., 1992). Nevertheless, there are other activities which can possibly occur, namely prelaryngealization, also sometimes called preglottalization,

and preaspiration, Prelaryngealization can be described as “some laryngeal constriction prior to complete closure for a stop”; the other option mentioned – preaspiration – is manifested in “stops with a period of voicelessness at the end of a preceding segment, usually a vowel, and during the onset of the stop closure,” being found only in intervocalic or final stops (Henton et al., 1992, p. 68). Preaspirated stops may be observed in a number of different languages, for example in Icelandic or Scottish and Irish Gaelic, where they appear in contrast with voiceless unaspirated stops and as Henton et al. (1992) claims, the preaspirated stops in these languages are geminate stops, that is to say long consonants.

2.5.2 Phonation Types

As has been stated before, most contrastive modifications do not occur during the onset phase of a stop but rather during the following two phases, that is, closure and offset. Therefore, attention will now be given particularly to the variety of phonation types that may be produced during the production of a stop. As argued by Henton et al. (1992), since plosives do not employ the glottis within the process of airstream production, they could be expected to manifest the greatest array of glottal variations. However, as it was with several other aspects of stops, the states of the glottis cannot be separated by clear-cut boundaries; accordingly, these modes should rather be regarded as points within a continuum. The spectrum that will be introduced is in conformity with the terminology that Ladefoged (1971) has proposed in his overview of the glottis states (Figure 3); nevertheless, it is important to note that the terminology concerning phonation types is extremely varied, with more types of phonation recognized and other labels used by some authors.

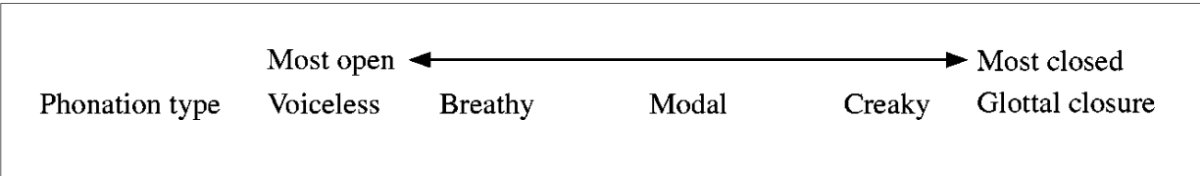


Figure 3 Continuum of phonation types (Ladefoged, 1971; in Gordon and Ladefoged 2001).

The overview is determined by the distance of the vocal folds from each other, that is to say how tightly the vocal folds are held together. It stretches from the most open state of the glottis, during which the opening is so wide as to create a *voiceless state*, to an adjustment where the vocal folds are pressed so tightly together as to create a *glottal closure* (glottal stop). However, there is still one setting that exceeds voiceless (unaspirated) phonation in degrees of

glottal opening – *voiceless aspirated*. These stops feature a much larger opening of the vocal folds than unaspirated stops and the larger the opening is, the longer the aspiration will take. Ladefoged and Ferrari Disner (2012, p. 139) define aspiration as “a small delay before the following vowel in which the air rushes out” (referring to the longer VOT in aspirated stops). During the production of both aspirated and unaspirated stops, once the oral closure is made, the glottal opening gesture begins; the difference, however, lies in the moment when the maximum of the opening is reached – for aspirated stops, it is at the release of the oral closure, while for unaspirated ones, it occurs in the middle of the oral closure so that at release the vocal folds are back to a voicing position (Ladefoged & Maddieson, 1996).

Let us move to the most constricted adjustment of the glottis – the glottal closure, when the folds are pressed together so tightly as to allow for no airflow. Glottal closure can either accompany an oral closure or it can occur on its own, as in glottal stops (Ladefoged & Maddieson, 1996). We will shortly touch upon oral stops with accompanying glottal closure, which can either occur simultaneously or successively. As a familiar example of simultaneous glottal closure, Ladefoged and Maddieson (1996, p. 73) mention the “syllable-final variants of phonologically voiceless stops in various, mostly British, dialects of English,” where a glottal stop overlaps the oral closure, thus suppressing bursts, or frication during release. As has been stated, glottal closures can also occur on their own, without accompanying oral closure. There is a variety of glottal stops in world languages, many of them including glottal stops in their stop series, as in Hawaiian; in other languages, these stops can also delineate phrase or prosodic boundaries, as in German; otherwise, glottal stops merely “function [...] as a variation in phonation type” (Ladefoged & Maddieson, 1996, p. 74). However, in most of these languages the glottal stops tend not to reach a full closure; instead, “a very compressed form of creaky voice or some less extreme form of stiff phonation may be superimposed on the vocalic stream” (Ladefoged & Maddieson, 1996, p. 75).

The setting of both the extremes on the continuum prevents the vocal folds from vibrating. As we move away from the extreme states on the continuum, vibration starts to occur. As long as the mode produces vibration of any extent, it can be considered a type of voicing. The most open state of the glottis during which vibration occurs is called *breathy voice*, whose auditory impression Catford (1977, p. 99) describes as “voice mixed with breath.” Breathy voice is, according to Henton et al. (1992), characterized by the vocal folds being rather further apart (in comparison with modal or slack voice), vibrating without any significant contact. It’s

important to mention that breathy voice is a feature audible only during the release of the stop closure and is most likely to occur with voiced stops (Ladefoged & Maddieson, 1996, p. 57). As we move along the glottal aperture continuum, the next point that is recognized by some phoneticians (Henton et al., 1992), is *slack voice*, which is characterized by a slightly narrower space between the arytenoid cartilages than in breathy voice, resulting in a decreased rate of airflow as well as tenser vibration of the vocal cords. The central point of the continuum – essentially the neutral mode – is called the *modal voice*. The production of modal voice involves the arytenoid cartilages held in a neutral position, meaning they are neither coming together, nor moving apart (Stevens, 1988). Voicing is initiated by vocal fold vibration, which is conditioned by the vocal folds being kept only slightly apart and tense enough to produce regular vibrations.

We will now proceed to the other half of the continuum, which moves from modal voice towards a more constricted glottal setting, namely *stiff voice*. However, Henton et al. (1992, p. 75) state that the task to differentiate between stiff and modal voice is a rather difficult one, as it lies in determining “when the degree of muscular activity is sufficiently great for a sound to have stiff voice as opposed to modal voice”. Also, stiff voice is indicative of a slight degree of laryngealization, which leads to another distinguishing task – between stiff and creaky voice, since both are characterized by a glottal constriction of a greater degree (Ladefoged & Maddieson, 1996). Moreover, Henton et al. (1992, p. 75) point out that it is sometimes impossible “to make absolute distinction between types of laryngealization, creaky and stiff voice, and glottal closure” as they once again create a continuum. RP English is given as an example since laryngealized voicing or creaky voice sometimes appears at final junctures (Henton & Bladon, 1988); there, “movements of the vocal cords become slower and slower so that the last one, in which the vocal cords are held together for an appreciable length of time, might well be called a glottal stop” (Henton et al., 1992, p. 76). Furthermore, although this realization does not form phonological contrasts, the English variety spoken in London often features a glottal closure at the closure phase of a plosive (Henton et al., 1992). Concluding with the most constricted setting producing vibration, which is known under the label *creaky voice* and describe it as a state of the glottis where the arytenoid cartilages are held together more tightly than in modal voice, the muscle tension being so great as to prevent the cords from vibrating as a whole (Ladefoged & Maddieson, 1996). Since we are talking about a continuum, there are, naturally, occasions where it is difficult to determine whether we are dealing with creaky voice stop or a stop accompanied by glottal closure; moreover, lowering of the larynx is

possible with these stops, “which may be sufficient in some cases to justify their being implosives” (Henton et al., 1992, p. 74).

Even though all phonation types are possible, some are more likely to be produced than others. Voiceless states are confirmed to be used during closure of the production of some sounds in all languages; moreover, most languages tend to produce stops with voiced closures (Henton et al., 1992). It is only natural that “the majority of languages employ two points along the phonation continuum in making contrasts: voiced and voiceless sounds” (Gordon & Ladefoged, 2001, p. 384), although there is a wide range of combinations which also involve the remaining states of the glottis. The contrast may be found in many of the most widespread languages, for instance, in English – this contrast might be demonstrated, for example, on the pair of words *pig* – *pick*, where voicing, or the lack of it, creates a phonemic contrast, that is, yields two different meanings. The duration of the closure can be considered one of the prominent parameters which indicate the occurrence or, on the other hand, lack of voicing – the closure of initial voiceless stops being significantly shorter than that of initial voiced ones (Henton et al., 1992).

2.5.3 *VOT*

It is not only the closure duration that plays an important role in differentiating between voiced and voiceless stops (also between aspirated and unaspirated) – the period between the release of a stop and the onset of a following vowel, called voice onset time, can determine the existence or lack of voicing as well as aspiration. Ladefoged and Disner (2012) demonstrate on the pair of bilabial plosives: continuous voicing throughout the articulation – coming of the lips together – produces the voiced stop [b]; if vocal folds stay separated during closure and start vibrating with closure release, the voiceless stop [p] is produced; and if the vibration only begins 40 or more milliseconds after the release, a voiceless aspirated stop [p^h] is made. According to Ladefoged and Johnson (2011, p. 151), “there is a continuum of possible voice onset times” and languages use different degrees to form contrasts between the stops. The most aspirated stops would have the largest positive VOT, while the most voiced the largest negative one. From the findings of Ladefoged and Johnson (2011), we learn that a common VOT value of English stressed initial /p/ is around 50 to 60 ms, while the English initial /b/ would have only around 10 ms or less, which applies for /p/ after initial /s/ as well. As for the occurrence frequency of the different types, the most common ones are voiceless unaspirated stops; after

those come the voiced ones and the least frequent are voiceless aspirated stops (Henton et al., 1992). VOT can be influenced by several different factors, that is, stress, place of articulation and word position; for example, “voicing is most ‘compatible’ with bilabials” (Henton et al., 1992, p. 79) and there appears to be “tendency for initial stops and those preceding stressed vowels to retain aspiration” whereas “medial stops [tend to] become voiced to varying degrees” (Henton et al., 1992, p. 80).

2.6 English Stops

We have now described the various ways to distinguish stop sounds found in the world’s languages, namely place of articulation, airstream mechanism and laryngeal setting, and this chapter will be concluded with a short summary of stop consonants within the English language – English being the language of focus in the practical part of this thesis. As for the place of articulation, they occupy all the main active regions of the vocal track except for the radical one. It contains the minimal pair of bilabial stops [p, b], alveolar stops [t, d] as well as velar stops [k, g]. (However, it is also possible to hear the dental stops [t̪, d̪] among English speakers, as allophonic variants before /θ, ð/; moreover, retroflex stops [ɻ, ɻ̌] may only be found in the English spoken in India [Ladefoged & Johnson, 2011, p. 165].) Finally, the glottal stop [ʔ] also occurs in English, where it functions as an allophonic version of the phonemes /p, t, k/ or it can also be used to separate words in the absence of linking. All English stops are typically plosives since they are produced with the pulmonic airstream mechanism, although ejective stops [pʰ, tʰ, kʰ], which are produced with an glottalic airstream, do occur allophonically in English. On the subject of voicing, English feature a voiceless series of stops /p, t, k/, as well as a voiced one /b, d, g/. In addition, the stops in the voiceless series generally acquire aspiration – [pʰ, tʰ, kʰ] – when occurring initially in accented syllables; the difference, however, is not contrastive, that is to say voiceless aspirated stops are allophones occurring usually occurring in complimentary distribution. In general terms, there is a great degree of phonetic variation in spoken English, either depending on the particular phonetic context, which is called *complementary distribution*, or depending on the speaker’s preferences or habits, known under the term *free variation* (Cruttenden, 2014, p. 46). In the following chapter, this variation will be discussed with respect to a particular phoneme, namely /t/.

3 Realization of /t/ in Varieties of English

As Cruttenden (2014, p. 308) argues, phonemes, that is phonological units of speech, merely “represent abstractions from actual phonetic reality.” The actual phonetic realizations of a phoneme will never be entirely identical and may be influenced by a number of factors, internal or external, but primarily “depend on the nature of the context” (Cruttenden, 2014, p. 308). In other words, internal linguistic constraints, particularly the phoneme’s phonetic environment and its position within a word, play a key role in terms of phonetic variability in speech. Several studies which focus on particular realizations of /t/ (e.g., Bjelaković, 2018; Fabricius, 2002; Gavaldà, 2016) confirm the significance of the segmental context in terms of variability. Moreover, other aspects relating to prosodic and semantic context, such as word stress, word frequency or the semantic nature of a word, also tend to be considered when studying phonetic variability (Gavaldà, 2016; Schlee, 2013). However, even though internal factors play a crucial role in phonetic variation, there are several external factors which may condition the actual realization of phonemes as well. These external constraints include style, that is, whether we are dealing with formal or informal communication or whether we are studying read speech, interview speech or casual conversation (noted by Fabricius [2002] or Warner & Tucker [2011]); the speaker’s age [e.g. Holmes-Elliott, 2021]; the sex of the speaker [e.g. Fabricius, 2002; Gavaldà, 2016]; the speaker’s socioeconomic background [e.g. Fabricius, 2002]; or the speaker’s geographical origin [e.g. Bjelaković, 2018; Fabricius, 2002; Schlee, 2013]).

As Skarnitzl and Rálišová (2022, p. 2) state, “[t]he voiceless plosive /t/ may well be a consonant whose manifestations in speech vary the most throughout the English-speaking world.” These manifestations can vary in various aspects, including the place of articulation, airstream mechanism, laryngeal setting, or there may be other changes. Seeing that “the actual realization of any phoneme is at least slightly different in every context” (Cruttenden (2014, p. 308), it is impossible to list all the possibilities. Therefore, in this chapter, we will only mention all the commonly recognized features in terms of the customary usage of /t/ in *Standard Southern British* pronunciation (SSB), that is to say variants, which characterize the native-like standard; particular attention, however, will be paid to the modern developments in SSBE and /t/ in other varieties of English.

3.1 Standard Southern British English

Before proceeding to the description of the various alternative realizations of the voiceless plosive /t/, we will address the background of what Lindsey (2019) labels as the *Standard Southern British* pronunciation. In order to trace the origin of the idea of a standard pronunciation, we might have to go as far as the 16th century, where “the courtly speech has to some extent spread as a national standard” (Cruttenden, 2014, p. 74), marking the distinction between the speech of the upper and lower classes. The 17th and 18th centuries still saw “the speech of London and its court [...] held up as the acme of pronunciation” (Cruttenden, 2014, p. 74); however, as soon as the standardization process was set in motion in the 18th century, it produced a model of ‘correct pronunciation’ through prescriptive grammars, which was then available to anyone “attempting to climb the social ladder and reach the desired status of the upper classes and the learned” (O. Tichý, personal communication, February 22, 2021). Moreover, the 19th century brought yet another development in terms of the way people all over the country – particularly those at the top of society – spoke: “they began to adopt the speech patterns of the upper classes in the London area.” (Lindsey, 2019, p. 1) This newly emerged respectable standard was later established under the term *Received Pronunciation* (RP) by Daniel Jones (1909). RP was first maintained in the upper circles and through elite independent education (called ‘public’ education in Britain) and is seen to have promoted the idea of a direct link between propriety in speech and moral standards (Trench, 1851). However, the medium which was chiefly responsible for the spread of RP in 20th century was the radio, or rather the BBC broadcasting, which adopted this prestigious pronunciation (Cruttenden, 2014, p. 77).

Nevertheless, the second half of the 20th century brought great social changes, which were naturally reflected in people’s speech patterns. Lindsey (2019, p. 3) writes that “the social foundations on which RP stood collapsed” as the “Victorian notions of social hierarchy faded” with the progress of the new century. Just as social privilege started losing its prestige with the 60s’ attention to the long-overlooked – the lower and working classes, women, colonial peoples – so did “the speech patterns of those at the top began to be perceived negatively” (Lindsey, 2019 p. 3). Furthermore, the expansion of both secondary and higher education not only meant that the line between pronunciation habits of independent and state schools began to fade away (Cruttenden, 2014, p. 78); but it also resulted in people from lower classes being able “to reach higher levels of attainment and success” as well as feeling “less pressure than before to modify their speech, including those in broadcasting” (Lindsey, 2019, p. 3). In other words, RP, the

once-prestigious speech pattern of the upper classes, began to be stigmatized as an old-fashioned and elitist type of pronunciation.

Yet, while contemporary Britain is very diverse in terms of speech patterns as “prominent figures in business, politics, academia and the media exhibit a range of accents,” the accents of the South, middle and upper middle class in particular, maintain its dominance since they prevail in public sphere as well as TV programmes and films; moreover, this southern type of pronunciation is the “teaching standard for ‘British English’ today” (Lindsey, 2019, p. 4). However, there seems to be a certain discrepancy among different authors with respect to the label of this type of pronunciation. There have been attempts to preserve the original name, RP, since the modern standard corresponds to RP to a large extent: for example, Cruttenden (2014, pp. 79–80) argues that the new standard should be regarded as an evolved modern version of RP, yet he acknowledges the negative connotations the term is associated with in the minds of many people. Cruttenden (2014) thus suggest the term *General British*, which, according to Oxford Advanced Learner’s Dictionary, “includes RP (Received Pronunciation) and a range of similar accents which are not strongly regional” (2011, as cited in Cruttenden, 2014). Nevertheless, Lindsey (2019) offers yet another label, that is *Standard Southern British* (SSB), which we decided to use for the purpose of this work due to its clear reference to the particular area which the speakers who were used for our analysis come from. According to Lindsey (2019, p. 4), “[i]t’s an accent of England, and certainly not representative of Scotland, Ireland, or the former British colonies, where pronunciation is substantially different.”

3.2 Aspiration

Having established the history and terminology of standard British pronunciation, we can finally move onto the realization of the voiceless plosive /t/ itself. Firstly, we will mention one of the most prominent features accompanying the voiceless alveolar plosive, that is to say aspiration. As aspiration has already been discussed in the previous chapter (Section 2.5), we will only repeat that Cruttenden (2014, p. 164) refers to it as the “voiceless interval consisting of strongly expelled breath between the release of the plosive and the onset of a following vowel”. Aspiration generally takes place when /t/ occurs initially in a syllable (e.g., *take* [t^heɪk]); however, it is not found in a context where /t/ follows /s/ within the same syllable, as in *steak* [steɪk] – the difference between /t/ and /d/ is then neutralized. As stated by Cruttenden (2014, p. 178), “[t]he amount of aspiration associated with /t/ varies considerably across

dialects”. While the voiceless plosive /t/ is characterized by strong aspiration in dialects such as Irish English (Cruttenden, 2014, p. 178) or Welsh English (Wells, 1982b, p. 388), most speakers of Scottish English (with the exception of the Western Highlands), South African English, as well as some northern accents tend to feature only little or even no aspiration with initial /t/ (Wells, 1982b, pp. 409, 370; Cruttenden, 2014, p. 178). As for SSB pronunciation, Lindsey (2019, p. 55) argues that while aspiration of /t/ “was said to be restricted to stressed syllables in RP, [i]t’s now general, except after fricatives, especially /s/.” In other words, in terms of SSB, aspiration is now to be found in both stressed and unstressed syllables, although there might be a difference of degree. However, to be precise, rather than being aspirated, the alveolar plosive tends to be “released into a period of /s/-like friction” called *affrication* (Lindsey, 2019, p. 56).

3.2.1 *Affrication*

Provided that the release of a plosive, namely the voiceless alveolar /t/, is produced in a slow way, it will be followed by a brief fricative sound, originating in the same place of articulation as the particular plosive, that is /s/ – such plosive with a fricative release is referred to as *affricated*, being transcribed as [t^s] (Cruttenden (2014, p. 172). The affricated /t/ was, according to Lindsey (2019, p. 56), “less noticeable in RP, but in contemporary speech it’s common in both stressed and unstressed syllables” – thus, it may appear in initial position, as in *tea* [t^s i:] for example; in medial position, as in *city* [ˈsɪt^sɪ], for example; as well as in final position, as in *hat* [hæt^s]. To make the difference between aspiration and affrication clear, it is necessary to realize where the sound following /t/ is created: while aspiration involves a glottal [h] sound, affrication is produced with an alveolar [s] sound. Cruttenden (2014, p. 172) also points to the fact that in SSB English in weakly accented intervocalic positions, it is common for the closure of the plosive to be so weak as to only produce the fricative sound, thus creating a sound more similar to the fricative /s/, rather than an affricated plosive /t/ – a phenomenon known under the term *frication*.

3.3 **Frication (or Slit-T)**

According to Gavaldà (2013, p. 163), frication of plosives is “a process of lenition by which a plosive loses its complete obstruction in the oral tract, and as a consequence, a homorganic fricative is produced;” this process, which affects the syllable-final /t/ is relatively

rarely associated with SSB English, being generally linked to and well-attested in different accents of English, namely Irish English (Hickey, 1984; Jones & Llamas, 2008; Skarnitzl & Rálišová, 2022), Australian English (Jones & McDougall, 2009) or Liverpool English (Honeybone, 2001; Watson, 2007). Even though frication of plosives, particularly the voiceless alveolar one, has been reported in SSB English as well (Buizza & Plug, 2012; Gavaldà, 2016), the phenomenon in SSB English tends to be ascribed to rapid or casual speech, representing a feature operating without the awareness of speakers and listeners, rather than a “rule-governed phenomenon” independent of style restrictions as it is said to be in Irish English (Jones & Llamas, 2008, p. 435). Moreover, Gavaldà, (2016) demonstrates that frication of /t/ is a very idiosyncratic process, which is, nevertheless, apparently favoured by female speakers. In the context of Irish English, the fricative realization of /t/ is generally known under the term *slit-T*, transcribed as [t̪]. Furthermore, based on their study on phonetic variation of Irish English /t/ (2022), Skarnitzl and Rálišová recognize more variants of slit-T; apart from the traditional slit-T, defined as a voiceless apico-alveolar fricative, there also seems to occur a voiced variant, that is, a voiced apico-alveolar fricative [t̪̥]; in addition to the apico-alveolar variants, a voiceless lamino-alveolar fricative [t̪̥] has been recorded, whose sound “is perceptually very similar to the lamino-alveolar fricative [s]” (Skarnitzl & Rálišová, 2022, p. 12).

3.4 Flapping (or Tapping)

Moving to another prominent process that /t/ may undergo in syllable-final prevocalic position in some varieties of English, we will now introduce *flapping* (or *tapping*; also *t-voicing*). From a lay perspective, this phenomenon causes /t/ “to be realized as what sounds like a very fast [d], a ‘voiced t’” (Hannisdal, 2006, p. 112); the difference lies in the fact that the articulation of [d] involves a much longer alveolar contact than the articulation of an *alveolar flap* (or *tap*) (Cruttenden, 2014). There has been a strong inconsistency among scholars as to the appropriate term (as well as transcription) for this phenomenon – while some tend to use the terms *flap* and *tap* interchangeably (see Picard, 1997, p. 3), others, propose to distinguish between the two terms (e.g., Wells, 1982a; Ladefoged & Maddieson, 1996; Trask, 1996). Ladefoged and Maddieson (1996, p. 231), for instance, argue that a tap consists in a brief contact resulting from a direct movement of the active articulator towards the palate, whereas a flap is produced by the active articulator moving tangentially toward the roof of the mouth, briefly striking it. However, even criteria for distinguishing between taps and flaps differ among scholars (e.g., Abercrombie, 1967; Rogers, 1991; see Picard, 1997, pp. 3–4), thus the

disagreement remains as to which of these articulations performs as the allophonic variant of /t/ in some varieties of English. Therefore, for the purpose of clarity, we have resolved to use what “seems to be the more widely recognized appellation” (Picard, 1997, p. 4) throughout this work – that is, the term *alveolar flap*, transcribed [ɾ], when referring to this common allophone of the voiceless alveolar plosive /t/ in English.

As has been already mentioned, the alveolar flaps tend to occur in coda (syllable-final) prevocalic environments, either word-finally, e.g., in *getting* ['gɛrɪŋ], or across word boundaries, e.g., in *get it* ['gɛr ɪt]. This allophonic variant of /t/ is a characteristic feature of North American English, which involves both American and Canadian English, generally seen as the standard realization of intervocalic /t/ (Hannisdal, 2006); although it can also appear between a vowel and a syllabic lateral, as in *battle* ['bæɾɫ], resulting in a laterally released flap (Wells, 1982a). Moreover, it is also attested in Australian and New Zealand English (Holmes, 1994). Even though not typically associated with British English, it is said to occur regularly in certain varieties, namely in Leicester, Hull, Liverpool, Lancashire, as well as being common in younger RP speakers (Trudgill & Hannah, 2013; Bjelaković, 2018), and is reported in Irish English, too (Skarnitzl & Rálišová, 2022). Yet, most importantly for the purpose of this work, flapping has been also observed in SSB English, apparently preferred by male speakers (see Gavaldà, 2016); and particularly found in short (and also grammatical and unstressed) words, such as *but*, *it*, *what*, followed by a vowel (Lindsey, 2019, p. 69).

3.5 Glottalling

We will now proceed to a phenomenon, which has been “extensively discussed and investigated” (Hannisdal, 2006, p. 113), that is to say, the usage of a *glottal stop* as an allophonic variant of /t/. Before describing the phenomenon further, it might be convenient to make some clarifications in terms of terminology with regards to the usage of the glottal stop – the phenomenon we are concerned with is called *glottalling*, or *glottal replacement*, that is, a situation when /t/ is completely replaced by a glottal stop [ʔ]; therefore, we will not discuss other cases of usage, namely (*pre*)*glottalization* (also *glottal reinforcement*) – either using [ʔ] “as a syllable boundary marker,” before both syllable or word-initial vowels, or reinforcing the voiceless stops /p, t, k/ and affricate /tʃ/ by a preceding glottal closure in syllable final position (Cruttenden, 2014, p. 184).

The production of glottal stops has already been discussed in the previous chapter; thus, we will only repeat that during the articulation of a glottal sound “the vocal cords are held together, cutting off the airstream from the lungs” (Lindsey, 2019, p. 67). According to Trudgill (1999, p. 136), “the glottaling of intervocalic and word-final /t/ is one of the most dramatic, widespread and rapid changes to have occurred in British English in recent times.” The fact is that the dissemination of glottalling and its accession into ‘standard’ speech is a relatively recent phenomenon, coming to public notice only in the course of the previous century (Wells, 1982a, p. 261). The glottal stop was during the RP era considered “characteristic of working-class London speech, or ‘Cockney’ and not typical of RP speakers, by whom it was “stigmatized to varying degrees, and ... generally avoided;” it is today an entirely standard feature in certain phonetic environments and can regularly be heard from speakers of SSB English (Lindsey, 2019, p. 67).

T-glottalling is a process which may affect /t/ in coda (syllable-final) position, both word-internally and word-finally; however, Gavaldà (2013, p. 150) notes that its employment depends “mainly on educational level, speech style and, also, phonetic context.” Based on this, the author suggests that its spread and acceptance within SSB English consists of three stages: the first stage (also noted by Wells [1997]) is linked to preconsonantal glottalling both word internally and across word boundaries (e.g. in *Scotland* [ˈskɒt̚lənd], *a lot more* [ə ˈlɒt̚ mɔː]), which is completely established “showing a near-categorical behaviour” (Gavaldà 2013, p. 152; see e.g. Fabricius, 2002; Bjelaković, 2018); the second stage includes word-final prevocalic and prepausal position as well as glottalling before a syllabic [ŋ] (i.e. *a lot of* [ə ˈlɒt̚ əv], *about* [əˈbaʊt̚] followed by a pause, *button* [ˈbʌt̚ŋ]), which “has to some extent lost its stigma, but not yet acquired prestige” (Fabricius 2000, p. 145) and which exhibits generational and speech style variation (see Fabricius, 2002, cf. Bjelaković, 2018); finally, the last stage is associated with word-internal prevocalic position and glottalling before a syllabic [l] (i.e. in *water* [ˈwɔːt̚ə], *bottle* [ˈbɒt̚l]), which was “sharply stigmatized” (Wells, 1982a, p. 261) in the past and regarded as a regional or working-class feature (Gavaldà, 2013). With respect to the last stage, Gavaldà (2013) believes that t-glottalling in this environment is still considered a regional feature and is thus not yet established in SSBE. While the suggested difference in the development of t-glottalling before syllabic [ŋ] and [l] might raise questions, prelateral glottalling, for some reason, was said to carry greater stigma according to several other authors (Cruttenden, 2014; Altendorf, 1999).

Apart from becoming a standard feature in SSB English in most environments, the glottal stop is a regular realization of /t/ in Scotland (Trudgill & Hannah, 2013; Schlee, 2013), as well as being attested in most British regional accents (see Hughes, 2013).

3.6 Ejective

We will now introduce a rather minor variant of /t/, which is also related to glottal closure, that is the *ejective stop* [t̟] – an articulation using an egressive glottalic airstream mechanism, which has already been described in the first chapter (in essence, a glottal closure is made during an oral closure, the larynx is then raised and the compressed air produces a “very sharp sound,” once the oral closure is released [Lindsey, 2019, p. 57]). The ejective stop [t̟] was not a feature of RP but it can now occasionally occur word-finally in SSB English (see Fabricius, 2000). However, the ejective release is more common in certain British dialects, namely south-east Lancashire (Cruttenden, 2014, p. 92).

3.7 Approximant

Now, another occasional variant will be mentioned – one that consists in /t/ being realized as the *alveolar approximant* [ɹ]. Cruttenden (2014, p. 178) notes that this phenomenon only occurs “in the unaccented intervocalic position following a short vowel and across a word boundary” and may be found in urban dialects from, for example, south Lancashire or west Yorkshire. Moreover, according to Skarnitzl and Rálišová (2022, p. 3), it is “limited to specific lexical items,” e.g., *get off* [geˈɹɒf] or *matter* [ˈmæɹə].

3.8 Pre-aspiration

The last rather rare variant to be mentioned is a pre-aspirated /t/, transcribed [ʰt] (in e.g., *putting* [pʰʊʰtɪŋ]). Having already explained this phenomenon in the first chapter on stops, we will proceed directly to its occurrence – syllable-final pre-aspirated /t/ is said to be present in several accents of eastern England, namely Hull, Tyneside, Middlesbrough, as well as being common in the Scottish Central Belt (i.e. an area containing most of Scotland’s population, which includes, for example, Glasgow and Edinburgh) and the areas in north-western Scotland, where Gaelic is spoken (Hughes et al., 2013, pp. 109, 120).

3.9 Other Ways of Releasing

We will now briefly discuss a rather standard realization of /t/ in syllable-final positions, which is the unreleased /t/. Cruttenden (2014, p. 169) states that this process lies in the closure stage of a plosive being maintained, causing the air compression to weaken, resulting in an inaudible release of the oral closure, thus losing “the release noise burst as a cue to the identification of the plosive.” Even though “the non-release of final plosives is a feature of GB [SSB],” in careful speech, the plosives are likely to be released audibly (Cruttenden, 2014, p. 170). Moreover, it is also typical of the first plosive in a cluster with a plosive or an affricate (e.g. /t+/p/ in *white post* [waɪtˈpəʊst]) to have a non-audible release, as the release of the first stop is overtaken by the closure of the second stop; this also applies to sequences of identical or homorganic stops (e.g. /t+/t/ in *white top* [waɪtˈtɒp] or /t+/d/ *white dog* [waɪtˈdɒg]), where only one closure and one release occur along with a longer compression stage; finally, in sequences of three plosives (e.g. /k+/t+/d/ in *locked door* [lɒktˈdɔː]), the middle plosive “has no audible first or third stage” (Cruttenden, 2014, p. 170).

Furthermore, there are two other kinds of release affecting /t/ – first one being *nasal release*, that is, when /t/ is followed by /n/ (e.g. in *cotton* [ˈkɒtn]), the oral closure is maintained and the compressed air escapes through the nasal cavity, (however, this does not occur when /t/ is followed by another a heterorganic nasal, namely /m/ - then, the plosion will likely be inaudible); the second kind of release is *lateral*, which occurs when /t/ is followed by a /l/, either syllabic (e.g. in *bottle* [ˈbɒtl]) or initial in the next syllable or word (e.g. in *atlas* or *at last*), resulting in “one or both sides of the tongue [being] lowered to allow the air to escape, the tongue tip contact remaining” (Cruttenden, 2014, p. 171).

3.10 Assimilation

Proceeding to another process affecting /t/, we will now present the process of *assimilation*, which involves a change of place of articulation. According to Cruttenden (2014, p. 177), the English voiceless “alveolar stop contact is particularly sensitive to the influence of the place of articulation of a following consonant”. Thus, when /t/ is followed by /θ, ð/, the generally alveolar plosive will change into a voiceless dental plosive [t̪]. Similarly, if followed by /r/, it may change into a voiceless postalveolar plosive [t̪] (well-attested, for example, in southern Irish accents [Wells, 1982]). However, Lindsey (2019, pp. 61–62) draws attention to

a new trend among both British and American speakers, which consists in replacing the alveolar-postalveolar cluster /tr/ with a purely postalveolar cluster /ʈr/ in words such as *trip* or *train*; despite being quite similar, [tr] “typically ha[s] a more ‘apical’ articulation with the tongue tip curled up,” while [ʈr] “typically ha[s] a more ‘laminal’ articulation with a more convex tongue shape.” Furthermore, word-final /t/ is also liable to assimilate to the place of articulation of the following sound when preceding a bilabial or velar consonant, although it maintains the original voicing: /t/ is replaced by /p/ before /p, b, m/ in, for example, *that boy*; /t/ is replaced by /k/ before /k, g/ in, for example, *that girl* (Cruttenden, 2014).

3.11 Coalescence

Another process worth mentioning is coalescence, particularly *yod coalescence*, which lies in the RP’s consonant cluster /tj/ being replaced by the single affricate consonant /tʃ/, and which has become increasingly widespread (Lindsey, 2019). Although it is most common in weak syllables, as in *situation* [ˌsɪtʃʊˈeɪʃən], or at word boundaries, as in *what you* or *didn’t you*, Lindsey (2019, p. 59) claims that /tʃ/ is gradually beginning to be heard in stressed syllables as well, for instance in *Tuesday* [ˈtʃuːzdeɪ]. The uncoalesced forms continue to be used to some extent, especially in careful speech and among older speakers (Cruttenden, 2014, p. 313). Moreover, coalescence is not restricted only to the cluster /tj/ but the process also affects the cluster /dj/ in the same way, replacing it by /dʒ/ (e.g. *during* [ˈdʒʊərɪŋ]). Also, the clusters /sj/ and /zj/ may be coalesced into /ʃ/ and /ʒ/ in some dialects but speakers of SSB are more likely to retain the original cluster (Lindsey, 2019, p. 60).

3.12 Elision

What remains to be discussed is a process of reduction that frequently affects the voiceless plosive /t/ called elision, which resides in the omission of a sound. Cruttenden (2014, p. 256) argues that it is a feature “typical of rapid and casual speech.” There is a tendency for a voiceless alveolar plosive to be elided when occurring in a medial position in a cluster of three consonants, both word-internally, for example in *exactly* [ɪɡˈzækli] or *Westminster* [ˈwɛsˌmɪnstə], or at word boundaries – there, it is most commonly found in word-final clusters of a voiceless continuant + /t/, that is /st, ft, ʃt, nt, lt/, when followed by a word-initial consonant, for example in *next day* or *last chance*; or in word-final sequences of a voiceless plosive or affricate + /t/, that is /pt, kt, tʃt/, also followed by a word-initial consonant, as in *kept*

quiet or *thanked me* (Cruttenden, 2014, p. 314). Moreover, the final /t/ in the negative /nt/ is prone to elision before both consonants and vowels. Yet, in rapid speech, elision of /t/ can take place in two consonant clusters as well, often eliminating the word boundary, as in *let me* [lemi]; also in sequences of word-final and word-initial /t/, as in *got to* [gɒtə] (Cruttenden, 2014, p. 315).

4 Method

4.1 Research Questions

Since the object of this work was not to prove any specific hypothesis but rather to merely analyse the realization of coda /t/ in Southern British English, only several research questions will be put forth instead of proposing any anticipated outcomes in terms of the present research. These questions will be answered throughout the next section, alongside the presentation of the results.

We have looked at the occurrence of particular variants of /t/ in relation to several variables and therefore, we are interested in whether these variables seem to condition the realization of /t/ and the occurrence of individual variants, and if so, how:

- Does the semantic status of a word containing coda /t/ affect the realization of /t/ in the given word?
- Does stress placement affect the realization of /t/ in the given word?
- Does the final position of the word within a phrase affect the realization of /t/ in the given word?
- Does the segmental environment of coda /t/ influence its realization?
- Does the sex of the speaker affect the realization of coda /t/?

Furthermore, because t-glottalling, and the developments in its usage, is by all means one of the most remarkable phenomena occurring in SSB in terms of the /t/ sound, some attention will be paid particularly to the occurrence of glottalling. We are interested in this particularly with respect to the nature of the analyzed speakers – they are a rather homogeneous group, since they share a (upper)middle-class background, are well educated, and are engaged in a specific profession.

- Do the results of the present study reflect the recent developments in the usage of t-glottalling?

Finally, the results will hopefully be able to provide an insight into the usage in SSB of some of the remaining variants:

- How regularly does flapping feature in the speech of SSB speakers?
- How regularly does fricated /t/ feature in the speech of SSB speakers?
- How regularly does ejective /t/ feature in the speech of SSB speakers?

4.2 Material

For the analysis, several recordings of a political discussion programme called *The Westminster Hour* (Quinn, 2020–2021), which is broadcast on BBC Radio 4, were obtained from the programme’s online archive using the computer application Stream What You Hear (Warin, 2020) and saved in the WAW audio file format. The speakers who appear on this programme generally include politicians, journalists, or academics, therefore a higher level of education is expected. These speakers appeared to be suitable candidates for a research on SSBE, as most of them would have been educated at the most prestigious universities in the UK and the usage of a standard is connected to a certain education level. The presenter typically hosts three to four guests and despite being a rather formal specialist programme, the format of a debate makes for a lively and spontaneous communication between the guests.

For the purpose of our study, we selected 16 native speakers of British English – 8 female and 8 male (mean age 51 years). Furthermore, the objective was to employ only those speakers, who originally came from Southeast England and the Home Counties, thus presumably classified as speakers of the Standard Southern British pronunciation. Therefore, an online research was done to ensure the speakers’ origin or domicile suited the purposes of the study. Moreover, we examined the recordings of those speakers whose origin seemed ambiguous, listening for specific features of different regional accents – if these were detected, the candidate was eliminated.

4.3 Data Preparation and Processing

Selected recordings were automatically transcribed via Beey (Newton Technologies, 2021), a tool for automatic speech recognition. Using Praat (Boersma & Weenink, 2015), TextGrids for the recordings were created, where the orthographic transcription of the recordings was inserted and manually corrected through careful listening. Excerpts of speech of chosen speakers were then marked and extracted, and by means of the P2FA forced aligner (Yuan & Liberman 2008) they were automatically segmented at phone level. We decided not to take into account the realizations of /t/ preceded by an obstruent, which blocks the use of

several variants (see Skarnitzl and Rálišová, 2022). 55 instances of the target consonant, that is /t/ in syllable-final position (in other words, coda /t/), for each speaker were located and analysed. To clarify, coda consonants were identified according to syllabification principles given by Wells (1990, pp. 76–86), whose main argument is that an intervocalic consonant sound belongs to the more strongly stressed of the surrounding syllables.

For each speaker, 55 realizations of coda /t/ (the total of 880 items) were then analysed through careful auditory analysis and manually coded in point tier in Praat TextGrids, recognizing seven major variants, namely ‘normal’ (i.e., voiceless alveolar plosive), glottalized, flapped, unreleased, elided, slit and ejective, using the labels *norm*, *glot*, *flap*, *unrel*, *eli*, *slit* and *ejec*, respectively. Also, it was recorded whether the /t/ occurred in a stressed (labelled *s*; e.g., in *percent*) or unstressed syllable (*u*; e.g., in *government*). In addition, each item was complemented with details with respect to its position within a phrase, that is, whether it was final (*f*) or non-final (*n*). Therefore, an evaluated sound in a point tier might, for instance, be coded as *s-n-glot* (stressed; non-final; glottalized). Note that we did not distinguish between standard /t/ and its aspirated (or affricated) variant, assigning them collectively to the category of ‘normal’. Also, it might be important to state that the category of unreleased /t/’s also included nasally and laterally released stops.

Even though the analysis was primarily auditory, in those cases where it was difficult to distinguish between the variants, the spectrograms and waveforms were consulted. Figures 4–10 are provided to illustrate how the coding process was carried out and how the acoustic illustrations were used to complement the auditory analysis. While Figure 4 shows a traditional released /t/ with a clear closure and release burst, Figure 5 demonstrates an affricated or aspirated /t/, which differs from the aforementioned one by a greater fricative burst. However, the sounds in both Figures 4 and 5 were labelled as ‘normal’ since this distinction was not of interest in terms of this analysis. Figure 6 displays irregular pulses, which are characteristic of glottalling while in Figure 7, there is no release burst, which is how the flapped /t/ is distinguished from a traditional released /t/. In Figure 8, there is no closure phase visible, and a fricative noise is produced instead of a plosive burst, indicating a slit-T. The absent release of an unreleased /t/ can be seen in Figure 9 – occasionally, some partial glottal activity was observed to accompany unreleased stops. Finally, when looking at Figure 10, there are no signs of a /t/ sound – an indication of an elided /t/.

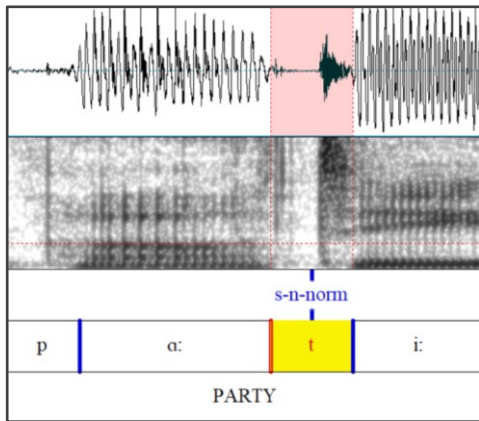


Figure 4 Acoustic illustration of a traditional released voiceless alveolar in the word *party* with a clear closure and release burst.

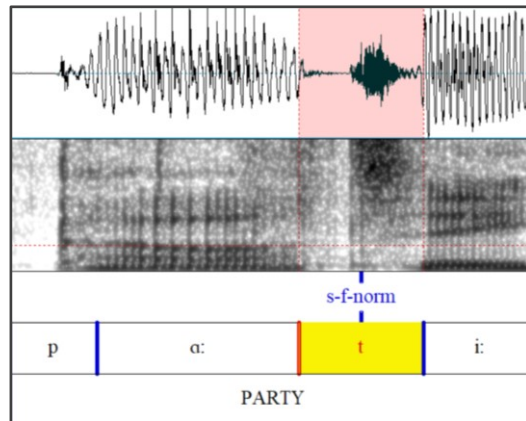


Figure 5 Acoustic illustration of an aspirated or affricated /t/ in the word *party* with a clear closure and a fricative burst.

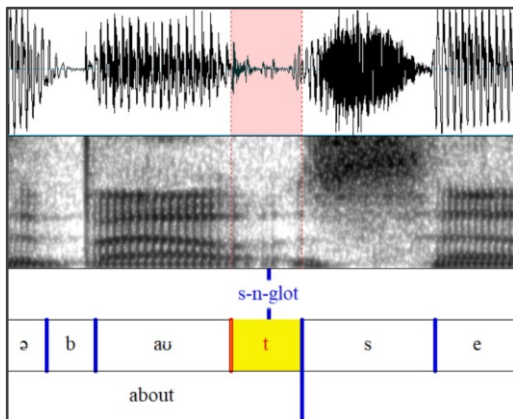


Figure 6 Acoustic illustration of a glottalling in the phrase *about selling* with irregular pulses.

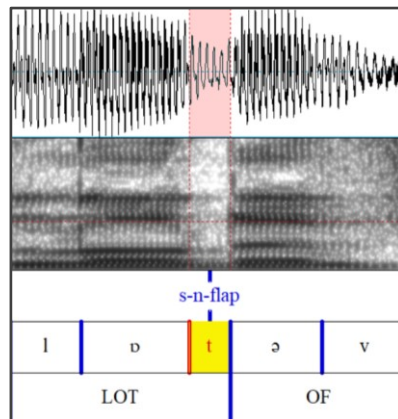


Figure 7 Acoustic illustration of a flapped /t/ in the phrase *lot of* without a release burst.

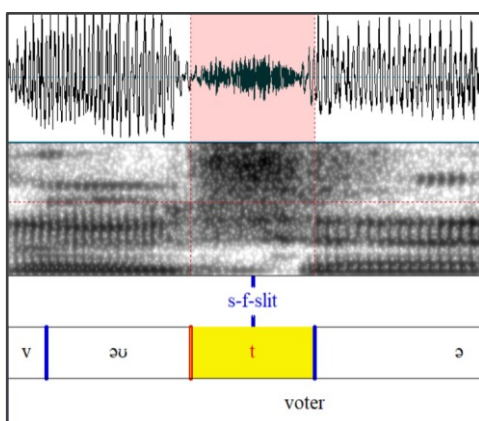


Figure 8 Acoustic illustration of a slit-T in the word *voter* without a closure phase and with a clear fricative noise.

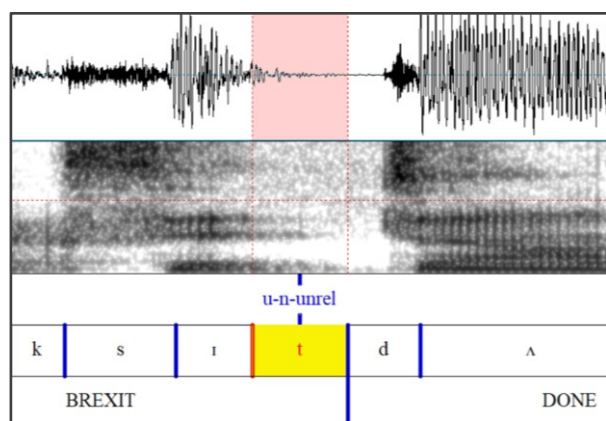


Figure 9 Acoustic illustration of an unreleased /t/ in the phrase *Brexit done* with no plosive release.

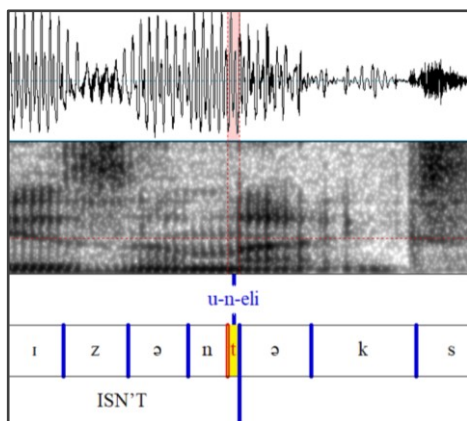


Figure 10 Acoustic illustration of an elided /t/ in the word *isn't* with no signs of a /t/ sound.

After the items were labelled, the information about each item coded in Praat TextGrids, along with details about the preceding and following sound as well as the preceding and following word, was extracted by means of a *Praat* script. The entries were then particularized in Microsoft Excel – the speaker’s sex was included (labelled *F* or *M*) and the word type was specified, that is, it was determined whether the word falls into the lexical or grammatical category (Table 1). The data were subsequently processed with the use of the R software (R Core Team, 2017) and the figures depicting the frequency of occurrence of particular variant of /t/ discussed in the following section were created using the *ggplot2* package (Wickham, 2009).

| speaker | prev-word | targ-word | next-word | wordtype | prev-sound | targ-sound | next-sound | prevcat | nextcat | label | stress | phrase | variant |
|---------|-----------|------------|-----------|-------------|------------|------------|------------|----------|-----------|-----------|------------|----------|---------|
| F3 | old | voter | quite | lexical | \sw\hs | t | \sw | vowel | vowel | s-f-slit | stressed | final | slit |
| F3 | voter | quite | frankly | lexical | a\ic | t | f | vowel | obstruent | s-n-glot | stressed | nonfinal | glot |
| F3 | sp | quite | confused | lexical | a\ic | t | k | vowel | obstruent | s-n-ejec | stressed | nonfinal | ejec |
| F3 | confused | at | what | grammatical | \sw | t | w | vowel | sonorant | u-n-glot | unstressed | nonfinal | glot |
| F3 | at | what | they're | grammatical | \vt | t | \dh | vowel | obstruent | s-n-glot | stressed | nonfinal | glot |
| F3 | poll | that | was | grammatical | \sw | t | w | vowel | sonorant | u-n-glot | unstressed | nonfinal | glot |
| F3 | exactly | that | sp | grammatical | \ae | t | sp | vowel | pause | s-f-norm | stressed | final | norm |
| F3 | the | government | plan | lexical | n | t | p | sonorant | obstruent | u-n-eli | unstressed | nonfinal | eli |
| F3 | the | Brexit | deal | lexical | \ic | t | d | vowel | obstruent | u-n-unrel | unstressed | nonfinal | unrel |

Table 1 A sample of the Microsoft Excel table illustrating all the data used for further analysis.

5 Results and Discussion

In the following sections we will present the resulting data from our research and comment upon them, comparing them to previous research conducted on the topic. The occurrence of particular realizations of /t/ will be first shown through synoptic results, which will reveal the overall usage of the individual variants. Afterward, we will pay attention to the realization of /t/ in relation to specific variables, which may provide a more detailed perspective and show individual variation – namely word type (whether it concerns a lexical or grammatical word), stress (whether the sound occurs in a stressed or unstressed syllable), the word’s position within a phrase (phrase final or non-final), the segmental context of the sound (what the preceding and following sound is) and the speaker’s sex (female or male). Finally, the resulting data of individual speakers will be examined, and the most salient findings will be discussed. Note that we will often include data visualizations of both absolute and relative values since each of them offers a different perspective on particular data – while absolute visualizations present the proportions of the total, the relative data visualization provides an easier visual juxtaposition of the proportions and their accurate quantity.

5.1 General Results

Figure 11 illustrates the overall distribution of individual variants of /t/ in our dataset (i.e., all 880 analysed items by the 16 speakers). The stacked bar on the left displays the frequency of occurrence in absolute values, that is, the individual bars show the percentage of each phonetic realization whereas the side-by-side figure on the right provides more accurate record on the actual number of occurrences. The figures show that more than a half of the total items was realized by two major variants – normal /t/ or glottalized /t/. It is obvious from the figures that a glottalized realization of /t/, that is, replacing /t/ with a glottal stop [ʔ], was the most frequent realization of coda /t/ produced by the speakers within our research, amounting to approximately a third of the total, which is represented by over 300 actual glottalized items. This confirms Lindsey’s (2019) claim that the glottal replacement of coda /t/ has become a standard feature of SSB, thus no longer being identified merely as a trademark of Cockney working class speech. Nevertheless, it is expected that the frequency of usage will differ with respect to particular phonetic environments. That t-glottalling is an established feature can be supported by the fact that the speakers in the present study are not likely to use non-standard

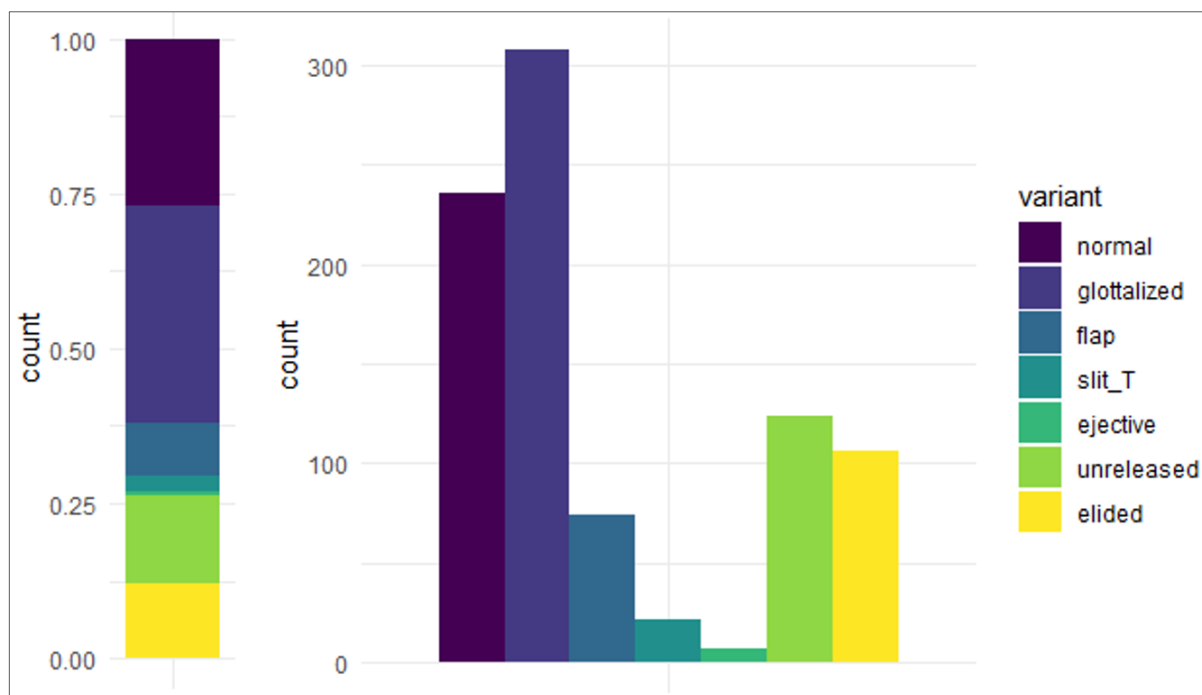


Figure 11 The total occurrence of individual phonetic realizations of coda /t/ in our research in both absolute values (diagram on the left) and relative values (diagram on the right). 7 variants were recognized in terms of this research as illustrated in the legend.

language, let alone lead a language change for several reasons – first, their professions would involve education at prestigious universities, which tend to promote a standard accent; second, the awareness of being on the air would have made the speakers very conscious of the way they speak and present themselves; third, since the mean age of the speakers was 51, they are not very likely to fall into the category of language change initiators.

The next most frequent variant was the ‘normal’ voiceless alveolar plosive, which is possibly caused by the fact that the category also includes its aspirated (or affricated) realizations. Unsurprisingly, the standard English unreleased variant was the third most frequent realization, albeit much less frequent than the prevailing two, probably mostly accounting for instances of final /t/, particularly when followed by a pause or a plosive/affricate. Moreover, elided realizations were also found quite frequently, which can be ascribed to spontaneous and sometimes rather rapid speech of the speakers, and particularly to the final /t/’s in contracted negatives (e.g., *don’t*, *isn’t*). Despite not having always been considered a feature of British English, the traditionally American flapped [ɾ] also occurs in our sample, albeit much less than glottalling. There are two remaining variants, which had a substantially lower representation in our sample. The first one is slit-T, a variant rather associated with Irish English, of which we found 20 instances (mostly appearing as a one-off realization in a speaker,

with only one speaker featuring so much as 6 such items). The ejective realization is even rarer in our dataset, being produced only by three speakers, thus not really supporting Lindsey’s (2019) statement that ejectives have become quite common in SSBE.

5.2 Word Type

We will now move to examining the realization of /t/ in relation to the type of the word containing the sound. In other words, we will focus on the distribution of particular variants in lexical words and grammatical words, and attempt to detect any notable patterns. In Figure 12, we provide visualizations of both absolute and relative values, again. Before looking into the figures, it might be important to mention that the total of grammatical words ($n = 462$) in our analysis was slightly higher than the total of lexical words ($n = 418$). The values in Figure 12 confirm that the distribution of variants of /t/ is affected by word type, or rather the semantic status of the word, to a great extent. There seem to be significant differences between the use in grammatical and lexical words in terms of the plain (and aspirated), glottalized, unreleased and elided variant.

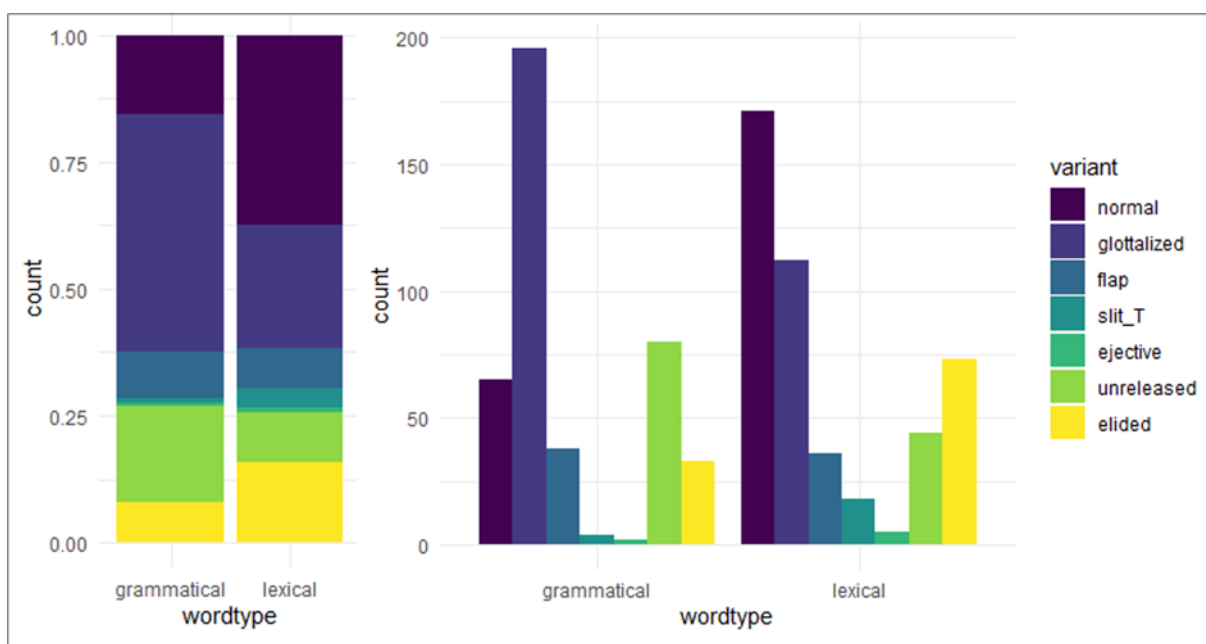


Figure 12 The occurrence of individual phonetic realizations of coda /t/ according to the semantic status of the word. The diagram on the left displays absolute values while the one on the right shows relative values.

In terms of grammatical words, the most frequent realization by far is glottalling. This almost exclusively involved final /t/’s in short words such as *that*, *what*, *it*. The data confirms that preconsonantal glottalling in grammatical words is firmly established in Standard Southern

British English, being thus featured in spontaneous yet formal educated speech. The situation is rather different with regard to lexical words where, despite being the second most frequent variant, the ratio of glottalized realizations is reduced by about half. These are most frequently found in lexical words such as *get*, *put* or *bit*. This disproportion between grammatical and lexical words corresponds to the results of Schleeff's (2013) study, which analyses adolescent speech in London and Edinburgh, confirming that function words (that is, grammatical words) favour glottal replacement whereas content words (that is, lexical words) tend to disfavour it. This can possibly be attributed to the fact that grammatical words are more prone to be affected by reductive processes (Phillips, 1983). However, Phillips (2006, as cited in Schleeff, 2013) also notes that there is a link between word class and word frequency, and grammatical words tend to be of higher frequency than lexical ones; therefore, it is possible that it is the semantic status combined with word frequency, which creates this uneven distribution.

'Normal' /t/, that is plain [t] together with aspirated [t^h], on the other hand, seem to be favoured by lexical words much strongly than by grammatical words, amounting to over a third of the total of lexical words in our dataset. From looking at the individual item, there seems to be a tendency for the 'normal' /t/ to occur in lexical words of two or more syllables rather than in short one-syllable words.

Moving onto other variants of /t/, we discovered that there seems to be no significant difference in the production of the alveolar flap with regard to the semantic status of the word as it is nearly equally represented in grammatical as well as lexical words. However, flapped /t/ nearly categorically appears at word boundaries in monosyllabic words in both categories – within grammatical words, flapping was most often found in phrases such as *but it* or *that I*; in terms of lexical words, in frequent phrases such as *sort of* or *get it*, with the exception a few polysyllabic words, such as *getting* or *putting*. Hannisdal (2006, p. 192) confirms and explains the preference for monosyllabic items: “since these words are short and frequent, they are usually unstressed and quickly articulated, and are thus more prone to undergo phonetic reduction in running speech.”

Even though slit-T does not figure prominently in the overall distribution, the variant does show a strong preference for lexical words since over 80% of the total of slit-T realizations is found in lexical words. This observation corresponds to the results of the study on coda /t/ in Irish English presented by Skarnitzl and Rálišová (2022), who noted that the fricative variant

was more frequently found in lexical words. The distribution of the ejective realization will not be considered since it was represented by such a small number of items in our data ($n = 7$), which was deemed an insufficient sample.

Looking at the graphs in Figure 12, it appears that the distribution of unreleased /t/ is very much determined by the word's semantic status. The unreleased /t/ was the second most frequent realization in grammatical words, albeit produced significantly less than glottalling, whereas in terms of lexical words it ranks third with roughly half the number of occurrences in comparison to grammatical words. Yet, this disparity might have more to do with word frequency than with the semantic status of the word because the majority of unreleased realizations within grammatical words consists of some of the most frequent words, namely *that*, *at*, *but*, *about*. Therefore, the differing distribution is also probably caused by the fact that the aforementioned grammatical words appear in our recordings considerably often.

The last variant we will examine is when /t/ is completely elided, which appears to occur in lexical words significantly more than in grammatical ones. With respect to grammatical words, elision seems to be mainly restricted to negatives, such as *don't*, *doesn't*, *can't*. Concerning lexical words, there is a wider range of words; the majority, however, involves multisyllabic words ending in *-nt* (i.e., *government*, *different*, *important*).

5.3 Stress

In this section, the distribution of variants of the target consonant will be inspected with respect to stress, that is, according to whether the syllable containing the sound is stressed or unstressed. The results presented in Figure 13 confirm that the position of stress does have a certain impact on the realization of coda /t/. However, it proved more informative to consider the occurrence of individual variants in stressed and unstressed syllables in relation to the semantic status of the word as well. It is important to note that the data deal with actually realized stresses produced in the speakers' connected speech.

We will begin by looking at glottalling and the distribution of the glottalized variant in stressed and unstressed syllables. Even though glottalling was generally very high in stressed syllables within both grammatical and lexical words, the most glottalized items were actually found in unstressed grammatical words ($n = 123$). Taking into account the "acceptability" test by Fabricius (2002), which revealed that t-glottalling in unaccented (unstressed) syllables was

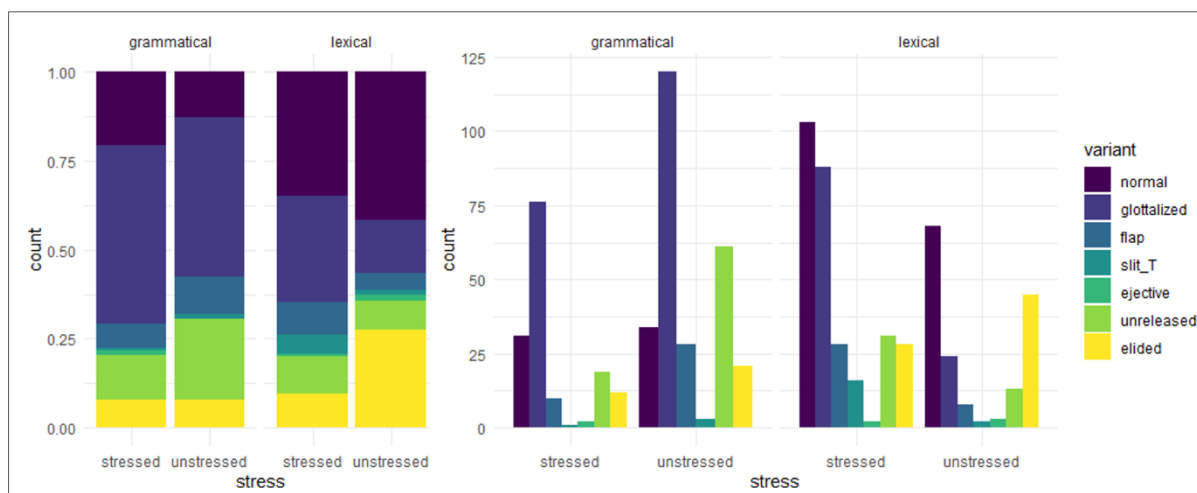


Figure 13 The occurrence of individual phonetic realizations of coda /t/ in stressed and unstressed syllables, separately for grammatical and lexical words. The diagram on the left displays absolute values while the one on the right shows relative values.

more acceptable than in accented (stressed) ones, it seems that 20 years later, t-glottalling occurs, and therefore is probably accepted, widely in both stressed and unstressed syllables. Yet, our results show that glottalling in unstressed syllables is restricted mainly to grammatical words while unstressed syllables in lexical words tend to foster plain or elided /t/. Similarly, normal (plain or aspirated) /t/ does not exhibit any straightforward preference for either stressed or unstressed syllables (its preference for grammatical words, on the other hand, is obvious). There is, however, a natural pattern for normal /t/, to appear frequently where glottalling does not and vice versa; thus, it was most common in unstressed syllables of lexical words while the least frequent in unstressed syllables of grammatical words.

Let us move onto the less frequent realizations, where the effect of the semantic status of the word proved to be crucial in order to uncover some tendencies in distribution of variants of /t/. The flapped realization, for instance, does not demonstrate an evident preference for stressed or unstressed syllables but appears to favour unstressed syllables in grammatical words and stressed syllables in lexical words. This finding correlates with the findings of Hannisdal (2006), who confirms that neither the weight of the first nor the weight of the second vowel has a significant effect on the presence or absence of word-final t-voicing. The situation, however, changes when it comes to word-medial /t/, where the post-accentual position is preferred according to several studies (see Hannisdal 2006) – this is in line with the result of the present study, where flapping word-medially in an unstressed syllable only occurred once in the word *hospital*, while being quite common in stressed syllables, in words such as *political* or *getting*.

Except for a few one-off realizations, the vast majority of fricated realizations (slit-T) was produced in stressed syllables of lexical words, which is in conformity with the findings of Skarnitzl & Rálišová (2022), showing the fricated variant's preference for stressed syllables. While unreleased /t/ occurs in all aforementioned contexts, it was most prominent in unstressed syllables in grammatical words, being the second most frequent realization within that context. Similarly, elided /t/ was present in all contexts on a small scale but prevailed in unstressed syllables of lexical words.

5.4 Final Position Within a Phrase

While the position within a word is a topic largely discussed with respect to /t/ and its various realizations, we will look into whether and how the word's position within a phrase, that is to say whether it appeared at the end of the phrase (phrase-final) or anywhere else within the phrase (non-final), may influence the realization of the target consonant. Note that the 'phrase-final' label was used for words at the end of an utterance followed by a pause as well as words at the end of intonational phrases. It turned out that it was not quite possible to draw many clear-cut conclusions in terms of the variants' preferences for a certain position within a phrase. Therefore, the effect of the semantic status of the word was often taken into account when the results seemed ambiguous.

In general, the phrase-final contexts were dominated by the 'normal' /t/, followed by the glottalized and elided realizations (albeit in smaller numbers), whereas the non-final target consonants were predominantly glottalized, with the 'normal' and the unreleased realizations appearing to a lesser extent. In order to elaborate on these rough results, attention will be paid to individual variants and their patterns, shown in Figure 14. What is clear from Figure 14 is that the flapped realization avoids phrase-final contexts and is restricted to other positions within the phrase. Plain or aspirated /t/ seems to dominate the phrase-final positions, possibly owing to the slowing of tempo at the end of an intonational phrase, which allows more emphasis on the syllable; however, when the semantic status of the word was taken into consideration, most items of this variant were actually found within the non-final context in lexical words ($n = 151$).

Although glottalling was present in all contexts, it was most prominent in non-final positions of a phrase, particularly in grammatical words. Similarly, slit-T is found in both final

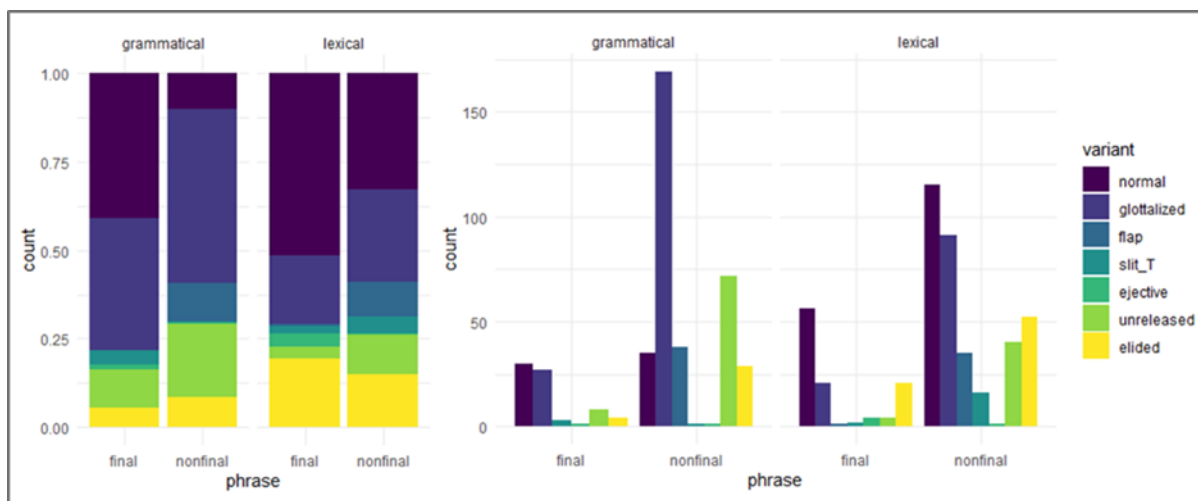


Figure 14 The occurrence of individual phonetic realizations of coda /t/ according to whether its position within a phrase is final or not, separately for grammatical and lexical words. The diagram on the left displays absolute values while the one on the right shows relative values.

and non-final context and no distinct tendencies are revealed until the effect of the semantic status of the word is added; then, it becomes more apparent that slit-T favours grammatical words at the phrase-final position but lexical words in non-final positions. Even though ejective /t/ did demonstrate a preference for phrase-final contexts (consistent with the finding of Skarnitzl & Rálišová [2022]), the number of items in this study is not sufficient enough to produce any conclusive statements. As for the unreleased variant, it predominantly occurred in non-final contexts; yet, it also seems to play quite an important role in phrase-final grammatical words. Lastly, despite being one of the three most frequent processes affecting the realization of /t/ in phrase-final lexical words, elision also often took place in non-final lexical words – this fact might signify that it is the semantic status of the word rather than its position within a phrase that determines the occurrence of this variant.

5.5 Segmental Environment

The segmental context of a consonant is said to have a key role in determining how the consonant is going to be realized, that is, what sound is going to be produced. The realization of /t/ in the sample of this research will be explored with regard to both the preceding and following segmental environment of the consonant; moreover, particular attention will be devoted to the occurrence of the target consonant in the intervocalic environment.

5.5.1 *Preceding Segmental Environment*

Before looking at the figures, it should be repeated that the realizations of /t/ preceded by an obstruent were not taken into account in terms of this research; therefore, what is meant by /t/ in post-consonantal environment in this section is technically only /t/ following a sonorant sound. Figure 15 illustrates that the preceding sound has a crucial impact on the realization of /t/. With the exception of plain [t], all variants demonstrate a clear preference in terms of a particular preceding context; plain [t] appears to be unaffected by the preceding sound, thus the figure only reveals its preference for lexical words, which has already been discussed. In contrast, the glottal replacement typically tends to occur after a vowel with only a few exceptions, which involve some one-off realizations of /t/ preceded by /l/ or /n/ – the majority of these words was grammatical, including words such as *don't* or *won't*. This fact is not unexpected and can be supported by the results of Schlee (2013), who states that “preceding nasals and liquids tend to disfavour glottal replacement, whereas vowels favor it” (p. 210). In addition, when the effect of the semantic status of the word is added, it is obvious that /t/ preceded by a vowel in grammatical words was predominantly realized as a glottal stop, while in lexical words, the post-vocalic /t/ was produced as a glottal stop just as likely as a plain [t].

Since the alveolar flap is known to occur exclusively in intervocalic environment, it comes as no surprise that flapping only took place when the target consonant was preceded by a vowel. Similarly, slit-T does not appear in the post-vocalic context at all; these findings correspond with the results of Skarnitzl & Rálišová (2022), as slit-T in their study also occurred only post-vocalically, with the exception of a few instances of slit-T produced after [ɹ] – this phenomenon, however, is not very relevant to our research as it is not likely to be produced by speakers of a non-rhotic variety of English, such as SSBE (as opposed to a rhotic one, such as Irish English, which is the focus of the aforementioned study). Furthermore, the seeming preference for post-vocalic context in lexical words is caused only by the general prevalence of slit-T in lexical words.

We will move to another variant, which appears to show a clear preference for the post-vocalic context – the unreleased /t/. In other words, the values in Figure 8 demonstrate that /t/ is most likely to be unreleased when following a vowel; in our results, unreleased post-consonantal (post-sonorant) /t/ only occurred in such cases, when it was followed by /n/ or /l/, and thus nasally or laterally released (e.g., in *currently*). Lastly, elided /t/ dominates the post-

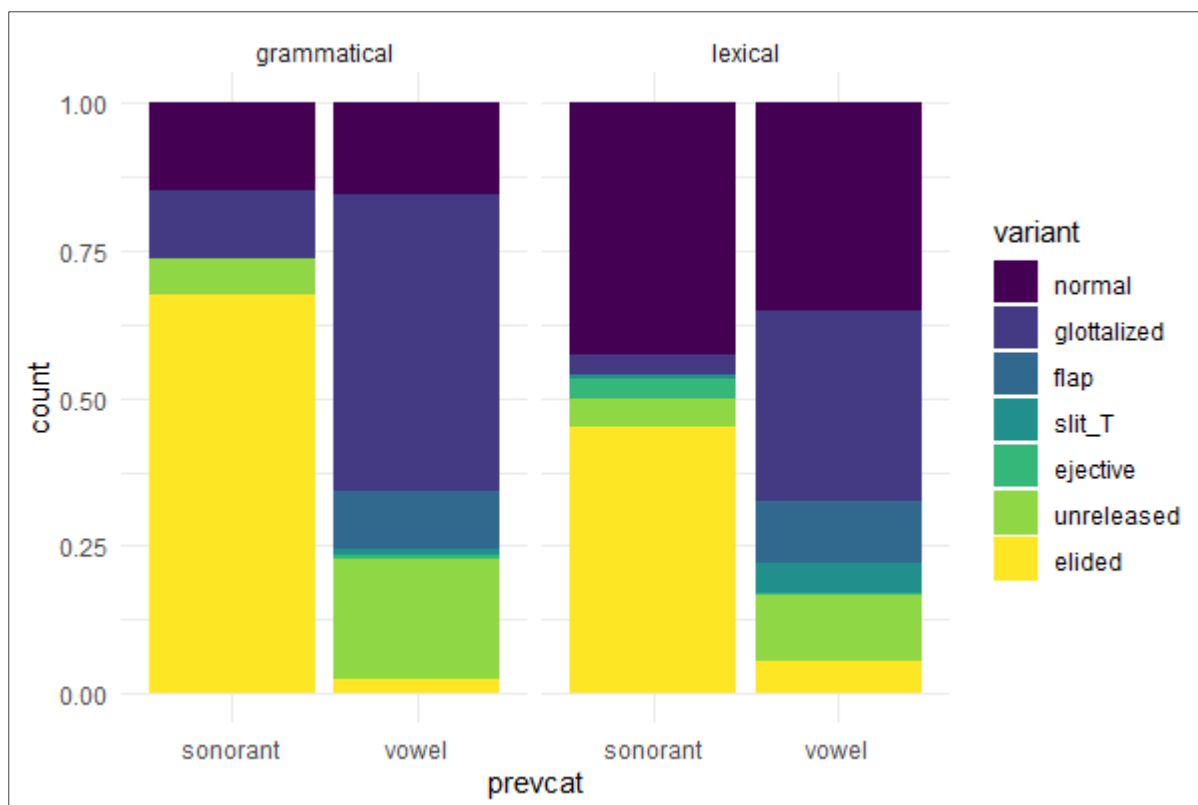


Figure 15 The occurrence of individual phonetic realizations of coda /t/ according to the preceding segmental environment, separately for grammatical and lexical words.

consonantal context, which comes as no surprise since elision typically takes place within consonant clusters. With respect to grammatical words, about two thirds of post-consonantal /t/'s were elided; these predominantly included negatives, such as *can't*, *don't* or *doesn't*. Yet, there was also a great number of elided post-consonantal /t/'s within lexical words ($n = 59$), which typically involved the final cluster *-nt* (e.g., in *different*, *government*, *front*), often followed by an initial /t/, as in *want to*. There were also a few instances of elided post-vocalic /t/, mostly including a sequence of word-final and word-initial /t/, as in *about to*. These cases could possibly be attributed to rapid speech, which most speakers were prone to.

5.5.2 Following Segmental Environment

We have now confirmed that the preceding segmental context is a crucial parameter which the actual realization of a consonant depends on; so is the following context. The following context is known to constrain the variability of /t/ to a large extent, and even often tends to receive more attention than the preceding context, especially with respect to certain variants, such as glottalling – the constraints in this case are not so much of phonotactic nature

as of social nature. Figure 16 provides a detailed overview of the environment particular variants preferred in our sample, including the pre-vocalic, pre-pausal as well pre-consonantal context, which is furthermore divided into two categories of consonants, namely obstruents and sonorants. It is clear from the figure that the following context significantly affects the realization of coda /t/; in addition, particular differences surfaced when the effect of the semantic status of the word is taken into account.

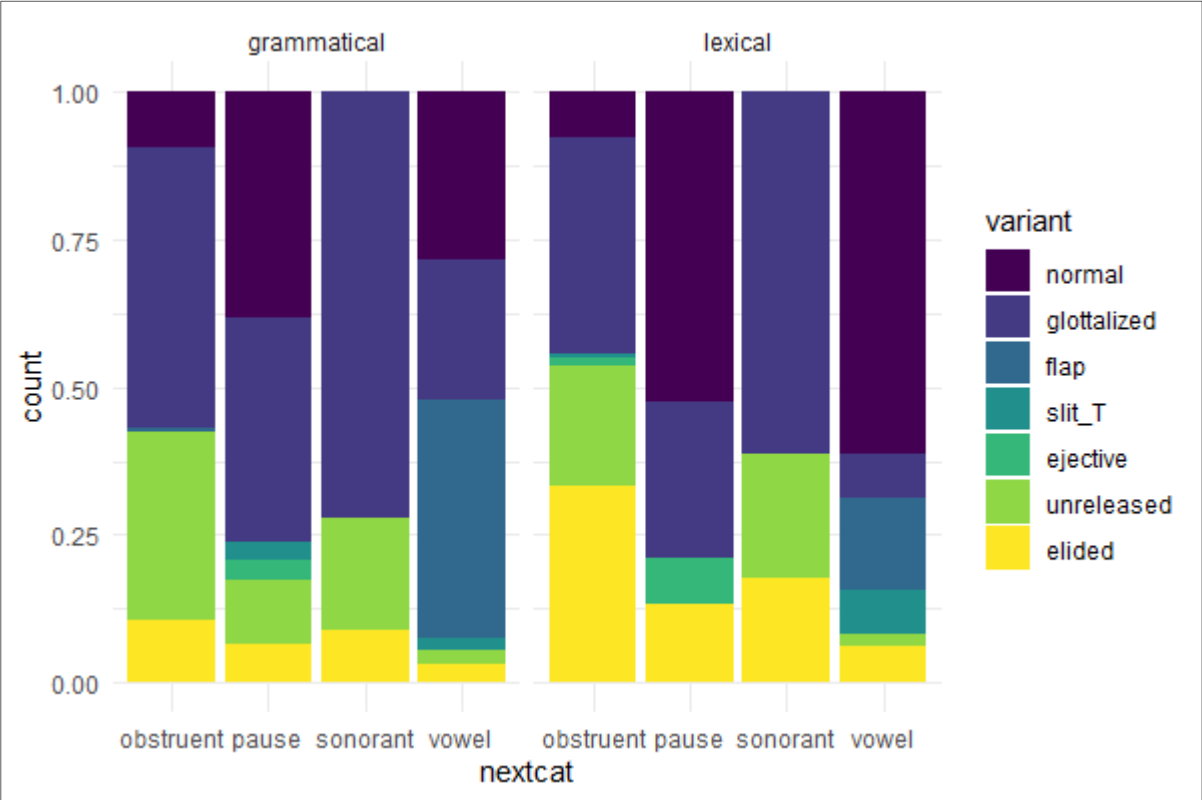


Figure 16 The occurrence of individual phonetic realizations of coda /t/ according to the following segmental environment, separately for grammatical and lexical words.

Now, it has been mentioned that the effect of the following environment particularly in connection with glottalling tends to be of interest to scholars. This is due to the gradual development of the phenomenon of glottalling, which has already been discussed earlier in this work (see Section 3.5). As the present study aims to inspect the realization of coda /t/ in current Southern British English, we were interested in whether the occurrence of glottalling in our sample would parallel the stages of t-glottalling mentioned in Section 3.5; moreover, we were curious whether there would be any notable difference in comparison to similarly focused studies carried out throughout the past two decades, particularly those which would indicate some progress in terms of t-glottalling in the previously stigmatized environment (i.e. pre-

pausal and prevocalic). The results demonstrated in Figure 16 unquestionably reflect the sequential evolution of t-glottalling, being very frequent before consonants, less common in pre-pausal environment and even more infrequent in pre-vocalic environment.

Yet, when the results are compared with several previous studies centred on the topic of glottalling (Fabricius 2000; Schleeff 2013; Bjelaković 2018), it seems that the overall numbers of t-glottalling in our study are lower in most environments. However, since “t-glottalling seems to be a form which is led by young people in general, originating in London” (Fabricius 2000, p. 143), it is relevant to note that all the aforementioned studies were concerned with younger speakers (Schleeff focused on adolescents between 12 and 18 years; the remaining two involved young people, ranging from 18 to 30 years) and both Schleeff and Bjelaković worked with speakers from London (although with different socioeconomic status). Therefore, it comes as no surprise that the scores presented by both studies for pre-consonantal (except for /t/ followed by a nasal or liquid, which is less frequent) and pre-pausal glottalling do not go below 80%, with the exception of the pre-vocalic environment – Bjelaković records only 27% for pre-vocalic glottalling, all of which are word-final instances, in interview style; Schleeff records 68.6% for pre-vocalic word-final environment but only 15% for word-medial /t/ (for conversation and reading style combined).

Let us focus on Fabricius (2000), a research comparable to the present one in many aspects, although it only examines word-final environment: firstly, the author works with speakers from the Southeast region; secondly, the group involved ex-independent-school students at Cambridge, thus the educational background of the speakers in both studies is likely to be similar; moreover, since the study was carried out between 1997 and 1998 with most of the participants being in their early twenties, which roughly corresponds to the age of our speakers at that time, we might be able to observe a lifespan change of a sort when comparing these two similar groups of speakers. Looking at the results in Figure 16, the overall percentage for obstruents in general (approx. 44%) was significantly lower than Fabricius’s 72% for stops and 70% for fricatives; the values for sonorants, on the other hand, is much closer to those of Fabricius (83% compared to our 70%); similarly, pre-pausal glottalling is comparable, albeit still somewhat lower (42% versus our 34%); finally, the difference between pre-vocalic glottalling is quite substantial (44% compared to our 13%). While a general tendency for lower values for glottalling in the present study is evident, each environment will now be considered

separately and the effect of the semantic status of the word will be taken into account in particular cases.

The most notable difference is found in the pre-obstruent environment, where t-glottalling was nearly categorical in the aforementioned studies but much less common in the results of the present study, where it was often replaced by the unreleased or even elided variant. One way to explain this is that spontaneous speech tends to be subject to economy of effort, and the glottalling, despite being considered a product of careless speech, actually does “require more effort in order to [be] produce[d]” than most alternatives available (Taylor-Ramsey, 2010, p. 64); therefore, it seems natural that only a closure without release is produced or even that the /t/ is dropped completely in fast and less careful speech. Furthermore, setting glottalling aside, when the semantic status of the word is taken into consideration, pre-obstruent /t/’s in grammatical words were more likely to be unreleased, while in grammatical words the elided version prevails. Only rarely did the speakers use the released plain [t] in this environment.

Even though pre-pausal glottalling in the present study was nowhere near as high as in the more recent studies centred on young people, the results were relatively comparable to those of Fabricius (2000), although a slight decrease is noticeable – this realization might be supported by Gavaldà’s (2016, p. 52) finding that “the production of t-glottalling in this context [pre-pausal] tends to stay stable 80% of the time over the speakers’ lifespans.” While in terms of grammatical words, t-glottalling was just as frequent as the traditional alveolar plosive, it is clear that the pre-pausal context in lexical words is favoured by the alveolar plosive. Finally, although it does not represent any major portion, it is interesting to note the ejective /t/ shows a pronounced preference for the pre-pausal environment, where it occurs practically invariably; this reinforced pronunciation “requires more effort than the standard RP pronunciation” (Taylor-Ramsey, 2010, p. 64), therefore it seems natural that it would occur before a pause, which is often used for emphasis. In the present study, however, the pre-pausal emphasis is more often achieved through the traditional plosive variant.

While the results for the pre-obstruent context did not entirely testify to pre-consonantal glottalling being categorical in SSBE, the pre-sonorant shows high rates for glottalling consistently (the highest rates for t-glottalling in terms of our study), only occasionally being replaced by the unreleased /t/ or the elided variant. In terms of grammatical words, glottalling mostly occurred in short words, such as *that*, *but*, *what*, followed by /w/; within lexical words,

it often affected a word-medial /t/ followed by /l/, as in *absolutely, slightly, completely*. Considering the whole pre-consonantal category, that is to say both pre-obstruent and pre-sonorant environment, when the effect of the semantic status of the word is added, it seems that grammatical words favour pre-consonantal glottalling slightly more than lexical words. We find these results standing in opposition to the results of Fabricius (2000), according to which pre-consonantal T-glottalling in lexical words is considerably more accepted than pre-consonantal T-glottalling in grammatical words.

Finally, the pre-vocalic context results did not reveal any progress in terms of pre-vocalic glottalling; on the contrary, the data showed that glottalling seldom occurs before a vowel, being especially rare in lexical words. Instead, certain rarer variants, which did not occur in other environments, seem to thrive in the pre-vocalic environment, particularly the flapped realization. This fact is in line with the findings of Bjelaković (2018), who recorded the score of 36.5% for flapped realization and only 27% for glottalized realization of prevocalic /t/ in young RP speakers, although the overall numbers in the present study were moderately lower (27% and 13% respectively); the lower scores for these two ‘less prestigious’ variants could be attributed to the formality of the environment in which the political debates take place. Owing to the lower numbers of these variants, pre-vocalic production of the traditional voiceless plosive (and its aspirated or affricated versions) in the present study was more frequent than in the aforementioned study (52% vs. Bjelaković’s 36.5%). Moreover, the semantic status of the word seems to have a considerable effect on the distribution of particular variants. While in terms of grammatical words, the major variant was the flapped /t/, lexical words were dominated by the traditional plain /t/. Even though it was not very commonly found in the speakers of the present study, slit-T is another variant which showed an obvious preference for the pre-vocalic environment to the rest of segmental contexts.

5.5.3 Intervocalic Environment

Having already discussed both post-vocalic and pre-vocalic environment at some length, the intervocalic environment will be shortly addressed separately. It is immediately evident from Figure 17 that the semantic status of the word affects the distribution of variants to a large extent. Nearly half of realizations of coda /t/ in grammatical words is flapped, around a quarter is realized as a glottal stop and another quarter is produced as the traditional voiceless alveolar plosive; whereas within lexical words, the traditional variant constitutes more than a half of

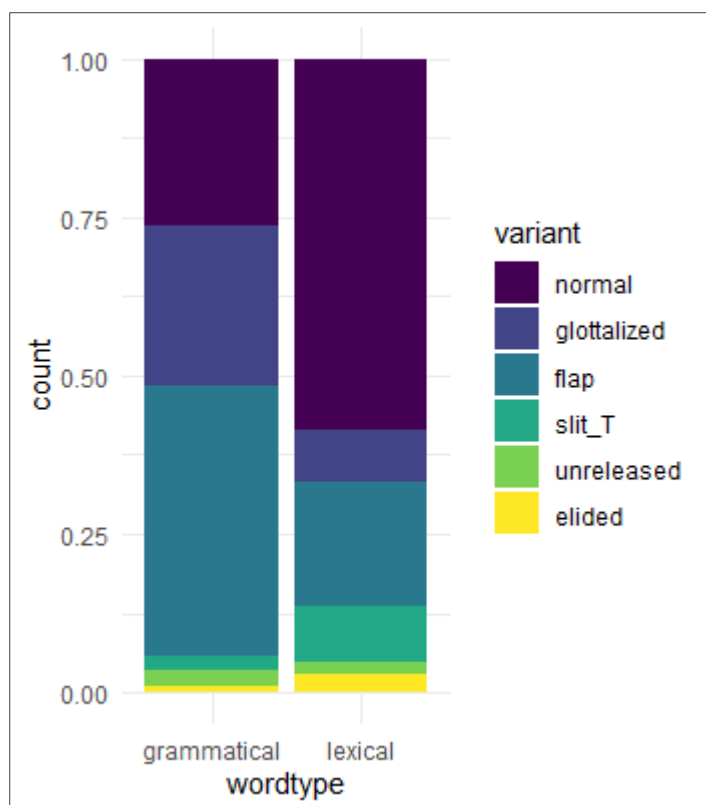


Figure 17 The occurrence of individual phonetic realizations of coda /t/ in intervocalic environment, separately for grammatical and lexical words.

intervocalic /t/'s, flapping occurs in little less than 20% of the lexical items, the fricated variant comprises around 10% and glottalling even little less than that. For a variant, which is traditionally not included as a feature of the RP accent, flapped /t/ seems to play a crucial part in the intervocalic environment in terms of the present study. In fact, Hannisdal (2006) explains that although flapping was thought to be restricted to informal casual speech, it appears to have undergone a change and is becoming increasingly common in more formal environments as well; the author illustrates this phenomenon with the score of 51.1% for intervocalic flapping in interview style, versus 48.9% for the voiceless alveolar plosive. Even though the number for intervocalic flapping is considerably lower in the present study, the importance of the flapped variant in terms of intervocalic context is obvious.

Moreover, according to Hannisdal (2006, p. 198), this ongoing change affecting the usage of flapping is well demonstrated by the particular lexical distribution, which “shows signs of lexical diffusion” since it primarily affects highly frequent words. This is completely in accordance with the results of the present study, as flapped /t/ either occurred in grammatical

words, mostly comprising some of the most frequent words, such as *that*, *but* or *it*; or in lexical words, such as *get* or *bit*. Similarly, Gavaldà (2016, p. 63), based on her results, states:

[A] context that considers allophonic processes of /t/ intervocalically in grammatical and highly frequent words seems to trigger less prestigious variants, such as [ʔ] or [r], whereas a context dealing with lexical and less frequent words both word-internally and across word boundaries seems to foster more prestigious variants such as [t̚].

This statement appears to be entirely in conformity with the results for intervocalic environment in the present study, where the two aforementioned ‘less prestigious’ variants show a clear preference for grammatical words; whereas slit-T is considerably more represented within lexical words.

5.6 Sex

Before looking into how the speakers’ sex influences the realization of coda /t/ and the distribution of particular variants, a further clarification should be made with respect to the terminology used. By intent, the term *sex* is used when we refer to the division of speakers into the *female* and *male* group, instead of using the word *gender*. Despite the two terms being often used interchangeably, Oxford English Dictionary notes that “the word *sex* tends now to refer to biological differences,” whereas “*gender* often refers to cultural or social ones [differences]”, often being associated with negative connotations (e.g., gender stereotyping, gender stratification). Moreover, taking into account gender identity and expression, it is by no means a straightforward clear-cut concept. Therefore, the word *sex* will continue to be used throughout this work as this part of analysis focuses merely on the realization of /t/ according to biologically defined grouping of people, that is, *sex*, since we had no way of examining their gendered identities.

Now, the interconnection between variation in speech patterns and the speaker’s sex has been the subject of many sociolinguistic studies. Therefore, we were particularly interested to see how the sex of the speaker affect the realization of coda /t/. We will now focus on Figure 18, which shows the distribution of each variant of /t/ according to the speaker’s sex. Although the differences between the two sexes are not exceedingly large, there are some notable patterns, which are worth pointing out. Probably the most interesting finding is that t-glottalling is produced more by women than men. At this point, it might be useful to introduce a particular

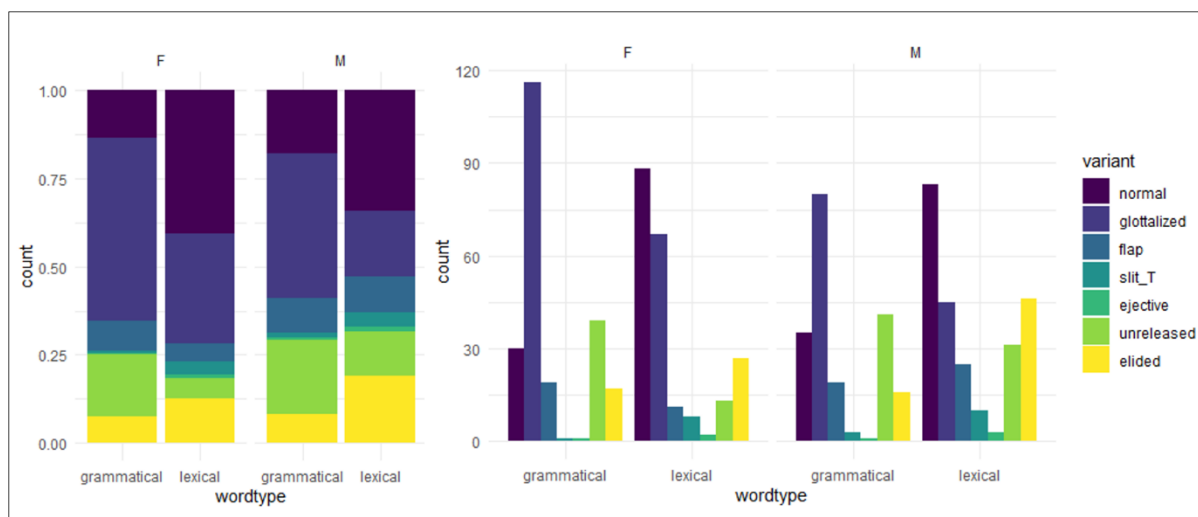


Figure 18 The occurrence of individual phonetic realizations of coda /t/ according to the speaker’s sex, separately for grammatical and lexical words. The diagram on the left displays absolute values while the one on the right shows relative values.

pattern that Hudson (1996, p. 193) refers to as the *Sex/Prestige Pattern*, according to which “females (of every age) use high-prestige standard variants more often than males do.” Taking into account the Sex/Prestige Pattern along with the changing status of the glottal stop, the values from Figure 18 appear to provide a testimony to the ascent of t-glottalling into standard, or even prestigious, speech. Hannisdal (2006, p. 58) gives an apt interpretation of this phenomenon:

Women are [...] on the one hand more conservative than men, as they use more standard forms, but on the other hand more progressive, as they adopt new innovative forms more quickly. The overall pattern is nevertheless that women are in the forefront of sound changes that are not stigmatised.

The fact that t-glottalling is more frequent in women speakers corroborates with the statement that “t-glottalling has lost much of its social stigma and is developing as a new prestige norm, as its status has changed from a local vernacular variant to a generalised non-regional variant” (Hannisdal, 2006, p. 58). Such development may also be supported by the results of Gavaldà (2016), who not only attested that t-glottalling is preferred by female speakers but also found that most of them demonstrated a notable increase in t-glottalling over a long-time span. The author, however, proposes another reason for the differing rates in the production of t-glottalling – male speakers produce this variant less because they tend to prefer yet another variant, that is flapped /t/ (Gavaldà, 2016, p. 62).

Looking at the results of the present study, the male preference for flapping is discernible even though the difference between the sexes is not a dramatic one. Nevertheless, there are several other studies confirming this tendency, for instance, Hannisdal (2006). This is also perhaps because flapping is not considered a prestigious form, formerly seen by sociolinguists as the middle ground between the upper-class alveolar plosive [t] and the lower-class glottal stop [ʔ] (see Trudgill, 1986, p. 20). However, owing to the recent developments in the status of the glottal stop, the alveolar flap might have become the less preferred and prestigious variant for female speakers. While the results for t-glottalling and flapping demonstrate a certain correlation with speaker's sex, frication seems to be used similarly by both female and male speakers, which diverges from the claim of several previous studies that frication is preferred by female speakers (see Gavaldà, 2016; Jones & McDougall, 2006). This may be due to the fact that the female speakers in our study seem to give preference to t-glottalling; however, it might only indicate the insufficiency of the sample of slit-T realizations in the present study.

With respect to the remaining variants, both unreleased and elided /t/'s tend to be produced more by male speakers, particularly in the case of lexical words. This disparity could, perhaps, be traced back to the *Sex/Prestige Pattern*, since female speakers seem to be likely to use more prestigious and effort-demanding variants, such as the plosive alveolar or glottalling, while male speakers quite often appear to be guided by the economy of effort, using the more effortless variants, such as the unreleased or elided /t/. It seems natural that this phenomenon should be observed in lexical words rather than grammatical ones, as lexical words are usually the ones carrying more weight, thus drawing more attention. Although it is not simple to determine the cause for this phenomenon, Trudgill (1972, pp. 182–183) offers two possible factors: the first is that since the position of women within society is considered rather insecure, they tend to be “more status-conscious than men [...] and are therefore more aware of the social significance of linguistic variables”; the second factor lies in the fact that working class speech is usually associated with masculinity and its presumed “roughness and toughness” – these, however, are not considered the “desirable feminine characteristics” unlike “refinement and sophistication.”

5.7 Individual Speakers

Finally, Figure 19 reveals the realization of /t/ in particular speakers. Although there is quite a high degree of interspeaker variation, we will only point out the most striking results which stand out among the rest. While in terms of grammatical words, the production of the traditional alveolar plosive /t/ never comes near 50%, there are a few speakers who produced approximately a half of their lexical words with the alveolar plosive, namely speakers F4, F6, F8 and M4. However, there is only one speaker whose production of the traditional plosive went over 50%, that is speaker F5. Such high rates were, on the other hand, not unusual in glottalling, particularly within grammatical words in female speakers (speakers labelled with *F*), but there is one speaker who used glottalling in more than three quarters of cases – speaker F7. Nearly all her grammatical words were, therefore, glottalized, and none are unreleased as it is usual in the rest of the speakers. As a matter of fact, speaker F7 is the only one who did not produce any unreleased /t/'s whatsoever. On the other hand, those speakers who produced unreleased /t/ most frequently, M6 and M8, employed glottalling in a rather sporadic way in comparison to the rest of the speakers. Also elided /t/'s were regular in nearly all speakers, albeit in smaller numbers; but, having said that, speaker M3 elided /t/ excessively, that is, in more than a half of lexical words (/t/ was elided in phrases such as *want to* or *might change*). Moreover, the contrast between the use of variants in grammatical and lexical word is noticeable in all speakers – yet, a single speaker, M7, demonstrates almost identical results for both categories. Finally, attention should be drawn to speaker M1 because of the diversity of his production of /t/, since he managed to produce all the possible variants in terms of both grammatical and lexical words.

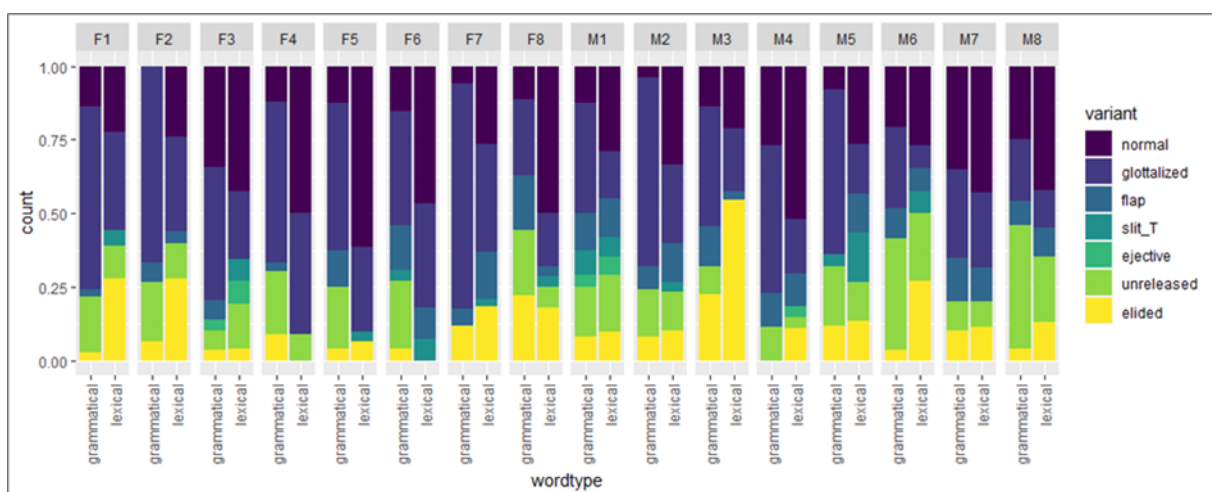


Figure 19 The occurrence of individual phonetic realizations of coda /t/ in particular speakers, separately for grammatical and lexical words.

6 Summary and Conclusion

In this last section, we will recapitulate the present work and summarize the findings from Section 5 including the answers to our research questions.

This BA thesis was focused on the realization of coda /t/ in current Southern British English. The phoneme was selected because of its extreme variability in speech but also because of how its pronunciation patterns seem to be changing over time. Moreover, the studied sample size was narrowed down to the consonant in final position within a syllable, that is, coda /t/, since it is in this position that the realization of /t/ is most likely to vary. The present analysis aimed to examine the way speakers of Southern British English – which is often considered the ‘standard’ dialect of British English – produce /t/, and to inspect whether any changes in the established usage patterns could be detected and confirmed.

The object of the theoretical part of the work was to introduce the studied sound itself – in other words, to explain what kind of sound /t/ is, how and where it is produced, and what are its various realizations. The initial chapter, *Stops*, was concerned with the general description of the sound in question, while the second chapter, *Realization of /t/ in Varieties of English*, focused on the description of its particular realizations. First, the overarching category of stop sounds with its principal characteristics was presented, followed by a detailed account of several aspects according to which stops can be subdivided into particular types. Next, specific realizations of /t/ were listed, and their usage was discussed.

The analytical part of the work was based on an auditory analysis of 16 speakers of SSB, whose speech was recorded from a BBC political discussion programme, which hosts politicians, journalists, and academics. There were 55 items analyzed for each speaker; in each item, the variant of /t/ was identified and details about its segmental, prosodic, and semantic context were noted, as described in *Method*. Once the material was processed, the results were presented through data visualizations and thoroughly discussed in *Results and Discussion*. Apart from revealing the overall usage of particular variants, the occurrence of individual realizations was shown in relation to several aspects, including the semantic status of the word, position of stress, the word’s position within a phrase, the segmental context of the sound and the speakers’ sex.

The synoptic results revealed a fact that reflects the transformation in the general attitude to the glottal stop, which is that glottalling was the most used variant throughout the entire study sample, leaving the traditional voiceless alveolar plosive behind. Not only does this confirm that it has unquestionably become a standard feature of Standard Southern British English, but it also suggests that glottalling might have become the commonest realization of coda /t/ in SSBE. Slit-T and ejective /t/, on the other hand, appear to be very rare in our sample of SSBE.

The semantic status of the studied word proved to have a significant impact on the distribution of some variants, namely glottalling, the alveolar plosive, the unreleased /t/ and the elided /t/. Speakers preferred to use the glottalized and unreleased variant in grammatical words, whereas in lexical words they tended to use the alveolar plosive or the elided variant. Since the word type was deemed to be quite informative, figures in the present study often featured separate visualizations for lexical and grammatical words in order to reveal more accurate tendencies.

The factor of the placement of stress in combination with word type proved informative in terms of the distribution of glottalling, unreleased /t/ and elided /t/. Glottalling seems to be accepted in both stressed and unstressed syllables; yet, the speakers were likely to avoid glottalling in stressed syllables in lexical words, where they seemed to prefer the voiceless alveolar plosive. Although both the unreleased /t/ and elided /t/ appeared in both stressed and unstressed syllables to some extent, the unreleased variant showed a clear preference for unstressed syllables in grammatical words while the elided one for unstressed syllables in lexical words.

It was not possible to draw any straightforward conclusions in terms of the effect of the position within a phrase, except in the case of the flapped variant, which naturally only occurred in non-final positions within a phrase.

The effect of the preceding segmental environment, on the other hand, proved crucial to the distribution of particular variants. Post-sonorant /t/'s were widely elided, although in terms of lexical words the number was slightly lower, as there were also a lot of regular voiceless alveolar realizations. The post-vocalic position, then, was mainly dominated by glottalling, although in terms of lexical words the voiceless alveolar plosive was used quite frequently again.

The following segmental environment, unsurprisingly, turned out to affect the distribution of the variants. Reflecting the recent development in the usage of glottalling, the results for glottalling show that pre-consonantly, it is a well-established consistent variant. Yet, the rates for the variant in the pre-obstruent position were somewhat lower compared to other similar studies, since the speakers of the present study also tended to use the unreleased and elided quite frequently. The occurrence in the pre-pausal context appeared to be dependent on the word type; thus, in grammatical words, glottalling did create a majority while in lexical words, the alveolar plosive was more frequent. T-glottalling in pre-vocalic position, however, still seems to carry a certain stigma, and the position was dominated by the flapped /t/ in grammatical words and by the alveolar plosive in lexical words. The high rates for flapping in prevocalic and intervocalic positions revealed that this formally non-British English feature has found its way into SSB.

Finally, the effect of the speakers' sex uncovered some notable patterns. Most interestingly, glottalling was found to be more used by female speakers – possibly signaling that t-glottalling is becoming the accepted standard, since women are said to use more prestigious language variants. However, it is important to take into account the ongoing development of glottalling from the previous paragraph, and stress that this language change is still in process, even though it has progressed massively. To sum up, according to the present results, it appears that t-glottalling has largely progressed into SSBE, becoming an accepted (or even prestigious) variant in most environments; yet, as has been noted above, the pre-vocalic glottalling still seems to be avoided in SSBE. Let us now move back to the remaining results: the flapped, unreleased as well as elided /t/, on the other hand, seemed to be preferred by male speakers – possibly signaling their less prestigious status, since in contrast to women, men are said to use less prestigious variants.

To conclude, owing to its incredible diversity, the phoneme /t/ and its realizations proved to be a fascinating subject matter, which deserves attention from both phonetic and sociolinguistic perspective. This thesis has demonstrated that the phoneme /t/ does not refer merely to the alveolar plosive – in fact, we have seen that there is an immense variety of different realizations, particularly in the case of coda /t/. Nevertheless, it became apparent that the patterns of usage tend to change over time and there are multiple factors involved that may have an effect on the realization of /t/. Therefore, this topic undoubtedly offers room for further study and research.

6.1 Limitations

Although this work has generally succeeded in revealing particular patterns in the production of different variants of coda /t/, we are aware of the limitations that such a small-scale research carries. Since our sample only involved 16 speakers and only 55 study items for each, it is necessary to view the results and tendencies, and compare them with similar studies, while bearing in mind the limitations of small-scale studies. Thus, a larger-scale research, which would entail a larger number of speakers as well as analyse a larger number of realizations might possibly lead to the study's higher reliability.

Moreover, even though the focus of this study were the language patterns in SSBE, it would be necessary to involve people of various age groups in order to obtain more informative results. Since this research only analysed people of a certain age group – mean age of 51 – it must be taken into account that the results only apply to this group and that the situation in other age groups might look differently (i.e. young people tend to be more innovative with respect to language change, therefore, their usage of glottalling may conceivably be more widespread even in the still stigmatized environments; older generations, who adhere to the rules of the rather old-fashioned RP, on the other hand, are not very likely to change their speech patterns and their usage of glottalling is expected to be more restricted).

Finally, it is important to stress that the present study only focused on people from a particular environment, thus merely shows the language patterns of a restricted set of people (the programme hosts were likely to share prestigious educational background, and their current occupations as well as the fact that they were aware of speaking on air ensured language on a sophisticated level). For the purpose of this study, however, this target group (educated, middle age, (upper) middle class) was informative as to the SSBE speech patterns and potential changes happening within.

7 References and Sources

References

- Abercrombie, D. (1967). *Elements of General Phonetics*. Edinburgh University Press.
- Altendorf, U. (1999). “Estuary English: Is English going Cockney?”. *Moderna Sprak*, 93(1), 1–11. <https://www.phon.ucl.ac.uk/home/estuary/altendf.pdf>
- Bjelaković, A. Ž. (2018). Harry Potter and the glottal stop: Glottal replacement and T-voicing in contemporary RP. *Filolog*, 18, 138–153. <https://doi.org/10.21618/fil1818138b>
- Buizza, E., & Plug, L. (2012). Lenition, fortition and the status of plosive affrication: The case of spontaneous RP English /t/. *Phonology*, 29(1), 1–38. <https://doi.org/10.1017/S0952675712000024>
- Catford, J. (1977). *Fundamental problems in phonetics*. Edinburgh University Press. <https://doi.org/10.2307/412751>
- Cruttenden, A. (2014). *Gimson’s Pronunciation of English*. Routledge.
- Fabricius, A. (2002). Ongoing change in modern RP: Evidence for the disappearing stigma of t-glottaling. *English World-Wide*, 23, 115–136. <https://doi.org/10.1075/eww.23.1.06fab>
- Gavaldà, N. (2013). *Index of idiolectal similitude for the phonological module of English applied to forensic speech comparison* [Doctoral dissertation, Universitat Pompeu Fabra]. TDX. <http://hdl.handle.net/10803/123775>
- Gavaldà, N. (2016). Individual variation in allophonic processes of /t/ in Standard Southern British English. *The International Journal of Speech, Language and the Law*, 23, 43–69. <https://doi.org/10.1558/ijssl.v23i1.26870>
- Gordon, M., & Ladefoged, P. (2001). Phonation types: A cross-linguistic overview. *Journal of Phonetics*, 29, 383–406. <https://doi.org/10.1006/jpho.2001.0147>
- Hannisdal, B. R. (2006). *Variability and change in Received Pronunciation: A study of six phonological variables in the speech of television newsreaders* [Doctoral dissertation, The University of Bergen]. Bergen Open Research Archive. <http://hdl.handle.net/1956/2335>
- Henton, C., & Bladon, A. (1988). Creak as a sociophonetic marker. In L. M. Hyman & C. N. Li (Eds.), *Language, Speech, and Mind: Studies in Honour of Victoria A. Fromkin* (pp. 3–29). Routledge.
- Henton, C., Ladefoged, P., & Maddieson, I. (1992). Stops in the world’s languages. *Phonetica*, 49, 65–101. <https://doi.org/10.1159/000261905>
- Hickey, R. (1984). Coronal segments in Irish English. *Journal of Linguistics*, 20(2), 233–250. <https://doi.org/10.1017/S0022226700013876>
- Holmes, J. (1994). New Zealand Flappers: An Analysis of T Voicing in New Zealand English. *English World-Wide*, 15(2), 195–224. John Benjamins Publishing Company.
- Holmes-Elliott, S. (2021). Calibrate to innovate: Community age vectors and the real time incrementation of language change. *Language in Society*, 50(3), 441–474. <https://doi.org/10.1017/S0047404520000834>

- Honeybone, P. (2001). Lenition inhibition in Liverpool English. *English Language and Linguistics*, 5(2), 213–249. <https://doi.org/10.1017/S1360674301000223>
- Hudson, R. (1996). The quantitative study of speech. In *Sociolinguistics* (pp. 144-202). Cambridge University Press. <https://doi.org/10.1017/CBO9781139166843.007>
- Hughes, A., Trudgill, P., & Watt. D. (2013). *English Accents and Dialects* (5th ed.). Routledge.
- Javkin, H. (1997). Towards a phonetic explanation for universal preferences in implosives and ejectives. *3rd Annual Meeting of the Berkeley Linguistics Society*, 3, 557–565. <https://doi.org/10.3765/bls.v3i0.2267>
- Jones, D. (1909). *The pronunciation of English: Phonetics and phonetic transcriptions*. Cambridge University Press.
- Jones, M. J., & Llamas, C. (2008). Fricative realisations of /t/ in Dublin and Middlesbrough English: An acoustic study of plosive frication rates and surface fricative contrasts. *English Language and Linguistics*, 12(3), 419–443. <https://doi.org/10.1017/S1360674308002700>
- Jones, M. J., & McDougall, K. (2006). A comparative acoustic study of Australian English fricated /t/: Assessing the Irish (English) link. In P. Warren & C.I. Watson (Eds.), *Proceedings of the 11th Australasian International Conference on Speech Science and Technology*, (6–12). Australasian Speech Science and Technology Association.
- Jones, M. J., & McDougall, K. (2009). The acoustic character of fricated /t/ in Australian English: A comparison with /s/ and /ʃ/. *Journal of the International Phonetic Association*, 39(3), 265–289. <https://doi.org/10.1017/S0025100309990132>
- Ladefoged, P. (1971). *Preliminaries to linguistic phonetics*. University of Chicago. [https://doi.org/10.1016/S0095-4470\(19\)31379-8](https://doi.org/10.1016/S0095-4470(19)31379-8)
- Ladefoged, P. (1983). The linguistic use of different phonation types. In D. Bless & J. Abbs (Eds.), *Vocal fold physiology: Contemporary research and clinical issues* (pp. 351–360). College Hill Press.
- Ladefoged, P., & Disner, S. F. (2012). *Vowels and Consonants* (3rd ed.). Wiley-Blackwell.
- Ladefoged, P., & Johnson, K. (2011). *A Course in Phonetics* (6th ed.). Wadsworth.
- Ladefoged, P., & Maddieson, I. (1996). *The Sounds of the World's Languages*. Blackwell Publishers.
- Lindsey, G. (2019). *English after RP: Standard British Pronunciation Today*. Palgrave Macmillan.
- Maddieson, I. (1984). *Patterns of Sounds*. Cambridge University Press. <https://doi.org/10.1017/CBO9780511753459>
- Oxford University Press. (n.d.). Sex. In *Oxford English Dictionary*. Retrieved January 20, 2022, from <https://oed.com/view/Entry/176989#eid23486538>
- Picard, M. (1997). English Flapping and the feature [vibrant]. *English Language and Linguistics*, 1(2), 285–294. <https://doi.org/10.1017/S136067430000054X>
- Phillips, Betty S. (1983). Lexical diffusion and function words. *Linguistics*, 21, 487–499.
- Rogers, H. (1991). *Theoretical and practical phonetics*. Copp Clark Pitman.

- Schleef, E. (2013). Glottal replacement of /t/ in two British capitals: Effect of word frequency and morphological compositionality. *Language Variation and Change*, 25(2), 201–223. <https://doi.org/10.1017/S0954394513000094>
- Skarnitzl, R., & Rálišová, D. (2022). Phonetic variation of Irish English /t/ in the syllabic coda. *Journal of the International Phonetic Association*, 1–20. <https://doi.org/10.1017/S0025100321000347>
- Stevens, K. N. (1988). Modes of vocal fold vibration based on a two-section model. In O. Fujimura (Ed.), *Vocal Physiology: Voice Production, Mechanisms and Functions* (pp. 357–67). Raven Press.
- Taylor-Ramsey, J. (2010). Correctness or Conspiracy? *La linguistique*, 46, 59–68. <https://doi.org/10.3917/ling.462.0059>
- Trask, R. L. (1996). *A Dictionary of Phonetics and Phonology*. Routledge.
- Trench, R. C. (2004). *On the Study of Words*. Project Gutenberg. <http://gutenberg.org/ebooks/6480> (Original work published 1851)
- Trudgill, P. (1972). Sex, covert prestige, and linguistic change in the urban British English of Norwich. *Language in Society*, 1, 179–195. <https://doi.org/10.1017/S0047404500000488>
- Trudgill, P. (1986). *Dialects in contact*. Blackwell.
- Trudgill, P. (1999). Norwich: Endogenous and exogenous linguistic change. In P. Foulkes & G. Docherty (Eds.) *Urban Voices: Accent Studies in the British Isles* (pp. 124–140). Arnold.
- Trudgill, P., & Hannah, J. (2013). *International English: A Guide to the Varieties of Standard English*. Routledge.
- Warner, N., & Tucker, B. V. (2011). Phonetic variability of stops and flaps in spontaneous and careful speech. *Journal of the Acoustical Society of America*, 130, 1606–1617. <https://doi.org/10.1121/1.3621306>
- Watson, K. (2007). Liverpool English. *Journal of the International Phonetic Association*, 37(3), 351–360. <https://doi.org/10.1017/S0025100307003180>
- Wells, J. C. (1982a). *Accents of English 1: An Introduction*. Cambridge University Press.
- Wells, J. C. (1982b). *Accents of English 2: The British Isles*. Cambridge University Press. <https://doi.org/10.1017/CBO9780511611759>
- Wells, J.C. (1990). Syllabification and allophony. In S. Ramsaran (Ed.), *Studies in the pronunciation of English: A commemorative volume in honour of A.C. Gimson* (pp. 76–86). Routledge. <http://phon.ucl.ac.uk/home/wells/syllabif.htm>
- Wells, J. C. (1997). Whatever happened to Received Pronunciation? In C. C. Medina & P. Soto (Eds.), *Il Jornadas de Estudios Ingleses* (pp. 19–28). <http://phon.ucl.ac.uk/home/wells/rphappened.htm>

Sources

- Quinn, C. (2020–2021). *Westminster Hour* [Radio broadcast]. Radio 4.

8 Programmes and Applications

Boersma, P. & Weenink, D. (2018). *Praat: Doing phonetics by computer* (Version 6.0.43). Downloaded 4.11.2018 from <http://praat.org>.

Newton Technologies (2021). *Beey*.

R Core Team (2017). *R: A language and environment for statistical computing*. Vienna: R Foundation for Statistical Computing.

Warin. S. (2020). *Stream What You Hear* (Version 1.5.0). Downloaded 6.1.2021 from <http://streamwhatyouhear.com>

Wickham, H. (2009). *ggplot2: Elegant graphics for data analysis*. New York: Springer.

Yuan, J. & Liberman, M. (2008). Speaker identification on the SCOTUS corpus. *The Journal of the Acoustical Society of America* 123, 3878.

9 Resumé

Tato bakalářská práce se věnuje fonetické realizaci kodového /t/ v současné jihoanglické výslovnosti. Pro anglickou alveolární neznělou explozivu /t/ napříč anglicky mluvícími zeměmi je charakteristická její rozsáhlá variabilita v řeči. Realizace daného fonému se mohou lišit v řadě aspektů, jakými jsou například místo artikulace, proudění vzduchu, nastavení svalů a hlasivek či další vlastnosti. Existuje několik faktorů, které mohou určovat typ produkovaného zvuku – mohou to být faktory vnitřní, mezi něž patří například fonetické okolí souhlásky, její pozice ve slově a slovní přízvuk, nebo faktory vnější, které se vztahují k aspektům, jako je dialekt, styl komunikace nebo pohlaví mluvčího. Cílem této práce proto bylo analyzovat realizaci /t/ v konkrétní variantě angličtiny – standardní jihoanglické angličtině, zjistit, jaké varianty kodového /t/ mluvčí produkují a najít případné vzorce pro jejich užívání.

Předmětem teoretické části práce bylo představit samotný zkoumaný zvuk – jinými slovy vysvětlit, o jaký zvuk se jedná, jak a kde vzniká a jaké jsou jeho různé realizace. Tato část práce se zabývá jak kategorií okluziv obecně, tak různými realizacemi /t/ v řeči. Úvodní kapitola s názvem *Okluzivy* se zaměřuje na obecný popis okluziv a jejich produkci ve světových jazycích, přičemž klade důraz na aspekty, které mohou sloužit k popisu a porovnání různých typů okluziv. V rámci kapitoly je nejprve popsán proces produkce okluziv. Poté je prostor věnován místu artikulace okluziv, kde jsou detailně popsány aktivní i pasivní artikulační orgány, díky nimž je zvuk tvořen. Dále jsou zmíněny různé mechanismy proudění vzduchu u okluziv, díky nimž se okluzivy dále dělí na explozivy, implozivy, ejektivy a mlaskavky. Následně se kapitola zabývá nastavením hrtanových svalů, zejména představuje typy fonace. Na konci kapitoly jsou uvedeny okluzivy nacházející se v anglickém jazyce.

Následující kapitola, zvaná *Realizace /t/ v druzích angličtiny*, se zabývá konkrétními realizacemi /t/ v různých variantách angličtiny, a procesy, které mohou tuto hlásku ovlivňovat. Zvláštní pozornost je v úvodu věnována poslednímu vývoji výslovnosti standardní jihoanglické angličtiny, jejíž historie je rovněž do jisté míry představena. V rámci kapitoly jsou detailně vysvětleny jevy jako aspirace, frikace, alveolární švih, glotalizace, elize a další.

Praktické části práce a vyhodnocení předchází kapitola *Metoda*, která měla za cíl představení metod a materiálu, které byly k analýze použity. Na úvod této kapitoly je představen cíl práce a je předloženo několik výzkumných otázek, které by měly být zodpovězeny v následujících sekcích práce. Otázky byly následující: Ovlivňuje sémantický status slova / přízvuk / pozice slova ve větě / segmentální kontext / pohlaví mluvčího realizaci

dané hlásky, a jak? Odrážejí výsledky této studie aktuální vývoj v užívání glotalizace? Jak pravidelně se v jihoanglické výslovnosti v kodové pozici vyskytuje alveolární švih / frikativní [t] / ejektivní [t]?

V rámci výzkumu bylo pořízeno několik nahrávek politického diskusního pořadu *The Westminster Hour*, vysílaného stanicí BBC. Pořad byl vybrán, protože mezi účastníky programu patří zpravidla politici, žurnalisté či akademici, čímž byla zajištěna vysoká úroveň vzdělání mluvčích. Pro účely studie bylo vybráno 16 mluvčích – 8 žen a 8 mužů s průměrným věkem 51, kteří byli vyhodnoceni jako vhodní kandidáti na základě původu. Nahrávky byly následně zpracovány pomocí různých nástrojů a s využitím programu Praat bylo pečlivým poslechem analyzováno 55 případů cílové hlásky u každého mluvčího. Pro účely analýzy bylo vybráno sedm typů realizace, a to tradiční alveolární exploziva, glotalizace, alveolární švih, exploziva bez vypuštění závěru, elidovaná hláska, frikativizovaná exploziva a ejektivní exploziva. U každé realizace byly navíc zaznamenány následující údaje: (ne)přízvučnost slabiky, pozice v rámci fráze, sémantický status slova (gramatické či lexikální), segmentální kontext, pohlaví mluvčího. Kapitola je doplněna o akustické ilustrace z programu Praat, které byly příležitostně použity k doplnění sluchové analýzy.

Praktická část práce byla tedy založena na poslechové analýze. Po zpracování materiálu byly výsledky prezentovány prostřednictvím vizualizace dat a prodiskutovány v kapitole *Výsledky a diskuse*. V rámci prezentace výsledků jsou vyvozeny individuální i obecné závěry, které jsou porovnány s obecnými tendencemi uvedenými v dosavadním výzkumu a literatuře k danému tématu. Kromě odhalení celkového užití jednotlivých variant byl výskyt jednotlivých realizací hodnocen s ohledem na segmentální, prozodický i sémantický kontext. Synoptické výsledky odhalily skutečnost, která odráží proměnu obecného postoje k užívání glotalizace. Glotalizace byla totiž nejpoužívanější variantou v celém zkoumaném vzorku, což nejen potvrzuje tvrzení některých autorů, že se nepochybně stala standardním rysem standardní jihoanglické výslovnosti, ale také naznačuje, že by se glotalizace mohla stát nejběžnější realizací kodového /t/ této výslovnosti. Tradiční alveolární exploziva v souhrnném výsledku stála až za glotalizací. Naopak frikativní /t/ a ejektivní /t/ byly ve vzorku velmi vzácné.

V rámci sekce věnované vlivu sémantického statusu se ukázalo, že sém. status zkoumaného slova má významný vliv na distribuci některých variant, konkrétně glotalizace, alveolárního švihu, alveolární explozivy bez vypuštění závěru a elidovaného /t/. Mluvčí dávali přednost užívání glotalizace a varianty bez vypuštění závěru v rámci gramatických slov, zatímco v lexikálních slovech měli tendenci používat alveolární explozivu nebo elidovanou

variantu. Zjištění týkající se glotalizace – preference mluvčích užívat ji spíše v gramatických slovech je potvrzena jinou studií též zaměřenou na jihoanglickou výslovnost. Výsledek se dále opírá o literaturu na dané téma, která uvádí, že gramatická slova jsou náchylnější k reduktivním procesům. Vzhledem k tomu, že sémantický status slova byl vyhodnocen jako poměrně informativní, grafy ve studii často obsahují oddělené vizualizace pro lexikální a gramatická slova s cílem odhalit přesnější tendence.

Sekce soustředící se na přízvuk odhaluje zajímavé informace o vlivu přízvuku v kombinaci se sémantickým statutem slova na realizaci cílové hlásky – zejména v rámci distribuce glotalizace, alveolární explozivy bez vypuštění závěru a elidovaného /t/. Z výsledků je zřejmé, že glotalizace je akceptována jak v přízvučných, tak v nepřízvučných slabikách. Mluvčí se však vyhýbali glotalizaci v přízvučných slabikách v lexikálních slovech, kde preferovali tradiční alveolární explozivu. Ačkoli se alveolární exploziva bez vypuštění závěru a elidované /t/ objevovaly v určité míře v přízvučných i nepřízvučných slabikách, varianta bez vypuštění závěru ukázala jasnou preferenci pro nepřízvučné slabiky v gramatických slovech, zatímco elidovaná varianta byla preferována v nepřízvučných slabikách lexikálních slov.

Z hlediska vlivu finální pozice slova v rámci fráze nebylo možné vyvodit žádné jednoznačné závěry, s výjimkou případu alveolárního švihů, který se pochopitelně vyskytoval pouze v nefinálních pozicích fráze.

Vliv předcházejícího segmentálního kontextu se naopak ukázal jako klíčový pro distribuci jednotlivých variant. Post-sonorní /t/ bylo hojně elidováno, i když z hlediska lexikálních slov byl jejich počet viditelně nižší, neboť se zde vyskytovalo i mnoho tradičních explozivních realizací. V post-vokalické pozici pak převažovala především glotalizace, která se post-sonorně nachází jen zřídka.

Fakt, že následující segmentální kontext velmi ovlivňuje distribuci variant vyplývající z další části analýzy, nebyl překvapivý. Výsledky pro glotalizaci v této části jsou odrazem vývoje v užívání glotalizace a ukazují, že v pozici před konsonantem jde o ustálenou variantu. Přesto byla míra výskytu varianty v pozici před obstruenty ve srovnání s jinými podobnými studiemi poněkud nižší, protože mluvčí této studie měli tendenci poměrně často používat variantu bez vypuštění závěru a elidované /t/. V pozici před pauzou byl výskyt závislý na sémantickém statusu slova – v gramatických slovech tak glotalizace tvořila většinu, zatímco v lexikálních slovech byla častější alveolární exploziva. Je však zřejmé, že prevokalická glotalizace s sebou stále nese jisté stigma; v gramatických slovech v pozici převládala alveolární švih a v lexikálních slovech alveolární exploziva. Vysoká míra produkce alveolárního švihů v

prevokálních a intervokálních pozicích odhalila, že tento jev, který nebyl dříve pro britskou výslovnost typický, si našel cestu do standardní jihoanglické výslovnosti.

V neposlední řadě, při zkoumání vlivu pohlaví mluvčích byly odhaleny pozoruhodné vzorce. Nejzajímavější bylo zjištění, že glotalizaci častěji používají mluvčí ženského pohlaví – což může signalizovat, že glotalizace se nyní stává uznávaným standardem, protože ženy podle všeho mají tendenci používat prestižnější jazykové varianty (je však důležité vzít v úvahu, že tato jazyková změna stále probíhá, i když výrazně pokročila). Naopak alveolární švih, exploziva bez vypuštění závěru i elidované /t/ se zdály být preferovány mužskými mluvčími – což může signalizovat jejich méně prestižní postavení, neboť na rozdíl od žen, muži mají tendenci používat méně prestižní varianty.

Na závěr praktické části je představen graf s výsledky jednotlivých mluvčích, které ukazují značnou variaci mezi realizací /t/ mezi mluvčími – proto jsou okomentovány pouze ty nepozoruhodnější výsledky.

Ve finální části práce je zrekapitulován obsah celé práce. Dále jsou shrnuty nejdůležitější poznatky z výsledků analýzy společně s odpověďmi na výzkumné otázky položené před začátkem výzkumu. V úplném závěru je prostor určen případným limitacím provedeného studie, týkající se především omezenosti analyzovaného vzorku.