

Epenthetic plosives in English: phonetic and phonological aspects

Tsutomu AKAMATSU
Leeds

ABSTRACT: In this paper, I propose first of all to present an overall and detailed picture of epenthetic plosives that occur in English from a phonetic point of view. In so doing, I draw heavily on the information provided by two widely consulted English pronouncing dictionaries of our days, viz. the latest editions of *LPD* and *EPD*. I further propose to investigate the phonological status of the epenthetic plosives in English by basing my analysis on the principles of functional phonology practised in what I call ‘the Functionalist School’ or ‘the Paris School’ which is associated with André Martinet. My phonological analysis presented in this paper is crucially based on the Saussurean concept of opposition and fundamentally differs from any other known phonological references to epenthetic plosives in English.

KEYWORDS: functional phonology, physical reality vs. linguistic function, ‘once a phoneme, always a phoneme’, opposition, phoneme, archiphoneme, epenthetic plosive, phonetic context, phonetic notation, phonological status, regressive assimilation, syllable division, homophony, potential pause, pronunciation preference poll.

RÉSUMÉ: Dans cet exposé je me propose, premièrement, de présenter, du point de vue phonétique, un tableau général et détaillé des plosives épenthétiques de l’anglais. Ce faisant, je m’appuie fortement sur les informations fournies par deux dictionnaires contemporains de prononciation anglaise qu’on consulte communément, à savoir la dernière édition de *LPD* et d’*EPD*. Je me propose deuxièmement d’examiner le statut phonologique des plosives épenthétiques de l’anglais. Je base mon analyse sur les principes de phonologie fonctionnelle pratiquée dans ce que j’appelle «l’École fonctionnaliste» ou «l’École de Paris» qui est associée à André Martinet. Mon analyse phonologique présentée dans cet exposé se fonde cruciallement sur le concept d’opposition et diffère fondamentalement de toutes les autres références phonologiques qu’on connaît sur les plosives épenthétiques de l’anglais.

MOTS CLÉ: phonologie fonctionnelle, réalité physique vs. fonction linguistique, ‘once a phoneme, always a phoneme’, opposition, phonème, archiphonème, plosive épenthétique, contexte phonétique, notation phonétique, statut phonologique, assimilation régressive, frontière syllabique, homophonie, pause virtuelle, enquête sur les préférences en matière de prononciation.

The non-occurrence or occurrence of epenthetic plosives [p], [t], [k], [b], [d] and [g] in English in certain phonetic contexts is well documented and researched on. References to, and explanations of, them from the point of view of articulatory phonetics are found in a number of manuals on English phonetics and in some of the

books on general phonetics. Researches on the physical aspect of epenthetic plosives in English are conducted from the point of view of acoustic phonetics and perceptual phonetics as well as from that of articulatory phonetics.¹

The non-occurrence or occurrence of epenthetic plosives in certain phonetic contexts in English is variously indicated in two well-known pronouncing dictionaries, i.e. *Longman Pronunciation Dictionary (LPD)* and *English Pronouncing Dictionary (EPD)*.² I will draw heavily on these dictionaries, particularly *LPD*, for examples during the course of my discussions in the present paper.

Let us take the word *chance* as an example.

tʃɑ:n^ʰs (*LPD*³)
tʃɑ:nts (*EPD*¹⁷)

There is a general problem about representing epenthetic plosives in phonetic notation. The symbol ^ʰ or *t*, as seen from the two notations above, does *not* stand for the epenthetic plosive [t] *per se*. The symbol ^ʰ or *t* is equivalent to ‘zero → [t]’, a shorthand for representing the non-occurrence and the occurrence of [t], the non-occurrence and the occurrence being directional (which I have indicated by the forward arrow ‘→’). ‘zero → [t]’ represents the *insertability* of [t], which is the definitional nature of an epenthetic plosive, i.e. [t] here. As a consequence, both tʃɑ:n^ʰs (*LPD*³) and tʃɑ:nts (*EPD*¹⁷) should be understood to be equivalent to tʃɑ:ns → tʃɑ:nts, and not tʃɑ:nts.

As is always customary with pronouncing dictionaries, neither *LPD* nor *EPD* presents phonetic symbols *within pairs of square brackets*. In citing phonetic notations from *LPD* and *EPD* in the present paper, I will automatically add square brackets. It would therefore be possible for me to vicariously supplement the phonetic notations such as tʃɑ:n^ʰs and tʃɑ:nts with pairs of square brackets, so that we have [tʃɑ:n^ʰs]

¹ See e.g. Fourakis & Port (1986) and Blankenship (1992), which are cited in Gimson (2001⁶) and Gimson (2008⁷). In addition, Yoo & Blankenship (2003) is cited in Gimson (2008⁷). The References in the last-mentioned work list some other works on epenthetic plosives in English. I will do no more than mention just one more work of a more recent date on the subject, viz. Kilpatrick, Shosted & Arvaniti (2007). By consulting the References of any further relevant works, one can easily expand information about other studies on the subject of epenthetic plosives that occur in English.

² To the best of my knowledge, there are (so far) only these two pronouncing dictionaries in which information about the absence or presence of epenthetic sounds (epenthetic plosives are my specific concern in this paper) is at all given. Both these pronouncing dictionaries have run through a number of editions. *LPD*¹ (1990), *LPD*² (2000) and *LPD*³ (2008) all provide such information as I require for the present paper, and *EPD*¹⁵ (1997), *EPD*¹⁶ (2003) and *EPD*¹⁷ (2006) do likewise. No such information is given in *EPD*¹ (1917) through *EDP*¹⁴ (1977). As can be seen from the dates of publication of these dictionaries, *LPD* can be regarded as the pioneer in this particular respect.

I should not fail to mention that there exists a third pronouncing dictionary, i.e. *Oxford Dictionary of Pronunciation for Current English (ODPCE)* (2001, 2003). *ODPCE* does not indicate epenthetic plosives and indicates omissible plosives only. For the purpose of my present paper, I have no alternative but to leave it aside. I have also to lay aside Windsor Lewis (1972) which indicates neither epenthetic plosives nor omissible plosives.

and [tʃɑ:nʃ]. There is a problem, however. The phonetic symbols except ¹ or *t* do stand for sounds *per se*. As I already said, ¹ and *t* do not represent [t] *per se* but ‘zero → [t]’ and therefore [tʃɑ:n¹s] or [tʃɑ:nʃs] can only be interpreted as being equivalent to [tʃɑ:ns] → [tʃɑ:nʃs]. However, this is certainly not what the compilers of *LPD* or *EPD* mean to understand from their ‘phonetic notation’ [tʃɑ:n¹s] or [tʃɑ:nʃs]. This seems to be an issue which is irresolvable. It is at least necessary and sufficient for us to bear in mind the problem I have raised about ‘phonetic notation’ of the sort [tʃɑ:n¹s] or [tʃɑ:nʃs].

There is a further problem. If [tʃɑ:n¹s] or [tʃɑ:nʃs] is meant to be, or supposed to be, a phonetic notation, the symbol ¹ or *t* should be disallowed since neither symbol (I would not call it a phonetic symbol, as it is not) stands directly for a sound as such, [t] in the present case.

I have vicariously introduced pairs of square brackets above and modified tʃɑ:n¹s and tʃɑ:nʃs to [tʃɑ:n¹s] and [tʃɑ:nʃs], respectively. Actually, judging from the normal practice on the part of the compilers of *LPD* and *EPD* in their other works on English phonetics and phonology, it would seem appropriate to understand that the ‘phonetic’ symbols in tʃɑ:n¹s and tʃɑ:nʃs (let us forget about the problem about ¹ and *t* momentarily) stand not only for sounds ([tʃ], [ɑ:] and [s]) but also phonemes (/tʃ/, /ɑ:/ and /s/). How the symbol ¹ or *t* is to be understood in phonological terms is an insurmountable problem.

The type of phonetic notation I prefer as an alternative to e.g. [tʃɑ:n¹s] or [tʃɑ:nʃs] is [tʃɑ:n(t)s]. In my preferred phonetic notation, all the symbols stand for sounds, including *t* representing [t] *per se*. My use of a pair of parentheses signifies that [t] either does not occur (hence [tʃɑ:ns]) or does (hence [tʃɑ:nʃs]). In other words, my preferred phonetic notation [tʃɑ:n(t)s] is a conflation of [tʃɑ:ns] and [tʃɑ:nʃs] implicitly accompanied by the directional relationship between the two. I am aware that even my proposed phonetic notation is not entirely satisfactory in that, firstly, it can after all be only a pseudo-phonetic notation, and secondly, the directional relationship between [tʃɑ:ns] and [tʃɑ:nʃs], that is, [tʃɑ:ns] → [tʃɑ:nʃs], the essential characteristic of an epenthetic plosive, [t] in the present case, cannot be explicitly shown. The directional relationship in question need to be verbally specified apart.

I am neither the first nor the only writer to use by preference pairs of parentheses in pseudo-phonetic notations to indicate the absence or presence of epenthetic plosives. Cruttenden notes in Gimson (2001⁶: 238, 2008⁷: 252) /^ˈæ̃n(t)θəm/ for *anthem* and /^ˈpɛn(t)ʃən/ for *pension*.³ As can be seen from these examples, Cruttenden places

³ I attribute to Cruttenden (who revised Gimson (1994⁵, 2001⁶, 2008⁷)) rather than to Gimson himself the use of pairs of parentheses in phonetic notations involving epenthetic plosives. The use of pairs of parentheses first occurs in Gimson (2001⁶) and subsequently in Gimson (2008⁷) as well. Cruttenden does not appear to use pairs of parentheses yet in Gimson (1994⁵) in which he does not treat of epenthetic plosives. The same is true of Gimson (1989⁴) (revised by Ramsaran), and all three

the symbol *t* within a pair of parentheses, as I do. He does not specifically explain why he uses pairs of parentheses in phonological notations (he himself will probably prefer to say ‘phonemic notations’) such as the above.⁴ I assume that he means through the use of the parentheses, as I do, that the unit indicated by the symbol *t* is insertable, i.e. it is absent or present, which is the essential characteristic of an epenthetic plosive. It is certainly wrong to interpret the use of a pair of parentheses in (t) either by Cruttenden or by me to mean that the unit indicated by *t* is omissible. The similarity between my notation (t) and Cruttenden’s notation (t) ends here. Cruttenden notates e.g. /ˈæn(t)θəm/ and /ˈpen(t)ʃən/ while I would notate [ˈæn(t)θəm] and [ˈpen(t)ʃən] by employing pairs of square brackets. (That Cruttenden uses ` and I use ‘ as the accent mark is of no real importance.) The crucial difference between us is that Cruttenden’s notation is a phonemic notation in which all the symbols including *t* stand for phonemes while mine is a phonetic notation in which all the symbols excluding *t* stand for sounds. Cruttenden considers the epenthetic plosive in these examples as the phoneme /t/ while I consider it as the sound [t] involved in ‘zero → [t]’. Gimson, too, if he gave an account of epenthetic plosives, would do the same as Cruttenden.

Despite the notational and theoretical problems inherent in *LPD*’s and *EPD*’s representation of epenthetic plosives, e.g. ^t in *LPD* and *t* in *EPD*, which I explained and discussed above, I will preserve the phonetic symbols for epenthetic plosives as employed in *LPD*³ and *EPD*¹⁷ when copying the information directly from them in the course of my discussions.

I indicate below the comparison between my preferred type of phonetic notation in which I first show in my way the non-occurrence or occurrence of an epenthetic plosive ([t], for example) and then add the indication of this in *LPD*³ and *EPD*¹⁷.

[(t)]	(Akamatsu)	= zero → [t]
[^t]	(<i>LPD</i> ³)	= zero → [t]
[t]	(<i>EPD</i> ¹⁷)	= zero → [t]

I have said that ^t and *t* as used in *LPD*³ and *EPD*¹⁷, respectively, do not represent [t] *per se*. But there are numerous cases where [t] *per se* can justifiably be indicated by the phonetic symbol *t* even when [t] occurs in such phonetic contexts in which the epenthetic plosive [t] is susceptible of occurring. The use of the phonetic symbol *t* in such phonetic contexts *is* justified as [t] in this case has nothing to do with the epenthetic plosive [t]. Witness, for example, the word *huntsman* [ˈhʌnts mən] (in

previous editions, i.e. Gimson (1962¹), Gimson (1970²) and Gimson (1980³), which are entirely authored by Gimson.

⁴ One might expect to find the meaning of his use of pairs of parentheses explained on p. xix in ‘List of Phonetic Symbols and Signs, and Abbreviations’ (xvii – xix) in Gimson (2001⁶), or on p. xvii or p. xviii in ‘List of Phonetic Symbols and Signs, and Abbreviations’ (xv – xviii) in Gimson (2008⁷). There is no explanation.

*LPD*³ or *huntsman* [ˈhʌnts.mən] (in *EPD*¹⁷). In the pronunciation of *huntsman*, [t] occurs in the phonetic context [n – s], one of the phonetic contexts in which an epenthetic plosive [t] is susceptible of occurring (e.g. [da:nts] *dance*), but this [t] is not an epenthetic plosive in [ˈhʌntsmən] but [t] *per se*.

*LPD*³ has at its disposal three different types of symbol, i.e. ^t (for an insertable, i.e. epenthetic, plosive), *t* (for an omissible plosive) and *t* (a plosive of neither kind). *EPD*¹⁷ has at its disposal two different types of symbol, i.e. *t* (for both an epenthetic plosive and an omissible plosive) and *t* (for a plosive of neither kind). We see that *LPD*³, by indicating *chintz* [tʃɪnts], refers to the omissible plosive [t] (not the epenthetic plosive [t]), while *EPD*¹⁷, by indicating *chinz* [tʃɪnts], refers to [t] that is neither the omissible plosive [t] nor the epenthetic plosive [t].

The symbol ^t in *LPD*³ and the symbol *t* in *EPD*¹⁷ are either phonemic symbols standing for /t/ or phonetic symbols standing for [t]; ambiguity exists as to whether either symbol stands for a phonetic unit or a phonemic unit in these dictionaries.

To begin my discussions proper on epenthetic plosives in English, I will give a list of epenthetic plosives in English below. I will give, for each epenthetic plosive, one or more example words in whose pronunciation the epenthetic plosive occurs.

[t]	: [da:n(t)s] <i>dance</i> = [da:ns] → [da:nts] : [naɪn(t)θ] <i>ninth</i> = [naɪnθ] → [naɪntθ]
[p]	: [wɔ:m(p)θ] <i>warmth</i> = [wɔ:mθ] → [wɔ:mpθ] : [lɪm(p)f] <i>lymph</i> ; ⁵ = [lɪmf] → [lɪmpf] : [ˈhæm(p)stə] <i>hamster</i> = [ˈhæmstə] → [ˈhæmpstə]
[k]	: [ˈkɪŋ(k)stən] <i>Kingston</i> = [ˈkɪŋstən] → [ˈkɪŋkstən] : [streŋ(k)θ] <i>strength</i> = [streŋθ] → [streŋkθ]
[b]	: [læm(b)z] <i>lambs</i> = [læmz] → [læmbz]
[d]	: [wɪn(d)z] <i>wins</i> = [wɪnz] → [wɪndz]
[g]	: [rɪŋ(g)z] <i>rings</i> = [rɪŋz] → [rɪŋgz] (but not in [sɪŋz] <i>sings</i>)

Epenthetic plosives in English are predominantly voiceless (cf. [p], [t] and [k]). Voiced epenthetic plosives (i.e. [b], [d] and [g]) are very uncommon. In this connection Gimson (2001⁶: 238, 2008⁷: 252) writes:

Epenthesis is less common before a voiced fricative as in *wins* being pronounced the same as *winds* /wɪn(d)z/ and in *lambs* /læm(b)z/, *rings* /rɪŋ(g)z/.

The reason why this is so is not clear to me. The succession of the nasal consonant and the voiced fricative consonant forms an entirely voiced sequence e.g. [ndz] (cf. [nts]) and this leads somehow to the rarity of voiced epenthetic plosives, as this is

⁵ The epenthetic plosive [p] in [lɪmpf] is more likely to be of labio-dental articulation ([p̚]) in fast speech due to regressive assimilation to [f] rather than of bilabial articulation ([p]) in careful speech. The occurrence of these two different articulations, [p] (bilabial) and [p̚] (labio-dental), is thus associated with different styles of speech. The same can be said of [p] in [mpf] as in [ˈkʌmpfət] *comfort*.

the only difference from the occurrence of the voiceless fricative consonants in the phonetic contexts where voiceless epenthetic plosives occur.

Effectively, for the word *wins*, both *LPD*³ and *EPD*¹⁷ indicate [wɪnz] only, not [wɪndz] as well, and for the word *winds* (n./v.) [wɪndz]. Note that neither *LPD*³ nor *EPD*¹⁷ indicates [wɪn(d)z] for *winds*. As for *lambs* and *rings*, neither *LPD*³ nor *EPD*¹⁷ indicates epenthetic plosives, thus [læmz] and [rɪŋz], respectively. It therefore appears that the occurrence of epenthetic plosives in the phonetic context ‘nasal consonant – voiced fricative consonant’ is quite rare.

Gimson (2001⁶: 238, 2008⁷: 252) cites a further interesting and unusual case of a *voiced* epenthetic plosive, [g], before a voiceless fricative consonant (in the phonetic context [ŋ – s]) as follows:

If there is epenthesis in *king-size*, note that it is a /g/ that is inserted, i.e. /ˈkɪŋ(g)saɪz/, suggesting that *king* has a different base form from *Kingston* /ˈkɪŋ(k)stən/.

It indeed seems unusual that the epenthetic plosive [g] occurs in *king-size* which I think is normally pronounced without an epenthetic plosive, be it [g] or otherwise. Neither *LPD*³ nor *EPD*¹⁷ shows the occurrence of the epenthetic plosive [g] in *king-size*. It seems to me to be normal that *king-size* which is a compound (its constituents being *king* and *size*) is pronounced without an epenthetic plosive. See *infra* (30)-(31) where I mention the non-occurrence of epenthetic plosives in the pronunciation of compounds. I would disagree with the suggestion advanced in the passage quoted above that the ‘base form’ *king* in *king-size* (whatever is meant by ‘base form’) is different from *King* in *Kingston*, which is pronounced with or without the epenthetic plosive [k]. The difference between *king-size* and *Kingston* is that the former is a compound whose constituents, i.e. *king* and *size*, are free forms⁶ as would be described in Bloomfieldian linguistics, while the latter is not a compound as, while *king* is a free form, *s* and *ton* are bound forms,⁷ as would be described in Bloomfieldian linguistics. *LPD*³ lists, among other words whose constituents include *king*, the words *kingfisher*, *kingship*, *king-size*, *Kingston* and *Kingswinford*, all of them meeting the phonetic context [ŋ – s] or [ŋ – ʃ]. None of them involves an epenthetic plosive [g]. Note, however, that *Kingston* may have, in addition to [ˈkɪŋ^ks tən] which is the main pronunciation, an alternative pronunciation [ˈkɪŋz tən], that is, with [z] rather than [s]. This is probably in analogy to words like *Kingsbridge*, *Kingsbury*, *Kingsford*, *Kingsley*, etc. Anyway the epenthetic plosive [g] appears to be totally extraneous to these words as well.

As can be seen from various examples given further above, the phonetic contexts in which epenthetic plosives, viz. [p], [t] [k], [b], [d] and [g], are susceptible of occurring are those in which one of three nasal consonants, viz. [m], [n] and [ŋ], is

⁶ For ‘free form’ see e.g. Bloomfield (1926: 155) and Bloomfield (1933: 160 *et passim*).

⁷ For ‘bound form’ see e.g. Bloomfield (1926: 155) and Bloomfield (1933: 160 *et passim*).

followed by one or other of the following fricative consonants, viz. [f], [s], [ʃ], [θ], [z] and [ʒ],⁸ as the case may be.

Here now is a list of individual phonetic contexts in which epenthetic plosives occur. These phonetic contexts can be generically presented as ‘nasal consonant – fricative consonant’. I will add an example word placed within a pair of parentheses for each phonetic context where the relevant epenthetic plosive occurs. The dash in each phonetic context denotes the place where the epenthetic plosive occurs.

[m – f] ([p] in *comfort*)
 [m – θ] ([p] in *warmth*)
 [m – s] ([p] in *hamster*)⁹
 [m – ʃ] —
 [m – v] —
 [m – ð] —
 [m – z] ([b] in *lambs*)
 [m – ʒ] —
 [m – h] —
 [n – f] ([t] in *infant*)
 [n – θ] ([t] in *tenth*)
 [n – s] ([t] in *dance*)
 [n – ʃ] ([t] in *mansion*)
 [n – v] —¹⁰
 [n – ð] —
 [n – z] ([d] in *wins*)
 [n – ʒ] —
 [n – h] —

⁸ It appears that [ʒ] is involved only in the phonetic context [n – ʒ], and in neither [m – ʒ] nor [ŋ – ʒ].

⁹ There are cases in which epenthetic plosives do not occur even if the phonetic contexts in question appear to be appropriate. For example, no epenthetic plosive is indicated in either *LPD*³ or *EPD*¹⁷ for *Adamson*. This may be because [m – s] occurs in this and other relevant words in such a way that syllable division occurs between [m] and [s] i.e. [ˈæd əm s(ə)n] (*LPD*³) and [ˈæd əm s̺n] (*EPD*¹⁷). Note in this connection that, in the word *hamster* in whose pronunciation the epenthetic plosive [p] does occur, [m – s] occurs in the same syllable, thus [ˈhæmpst ə].

¹⁰ The close similarity between [n – v] and [n – f] (the only difference between [v] and [f] being that the former is voiced and the latter voiceless) makes me conjecture that if an epenthetic plosive occurred in [n – v], it would be [d]. However, such does not seem to be the case. Syllable division always occurs *between* [n] and [v] (cf. *invoice, invoke, invite* (v.), *invite* (n.), *invent, Inverness*, etc.), and not after [nv], unlike in those cases of [nf] where syllable division is *after* [nf] and the epenthetic plosive [t] occurs (cf. *infant, infancy, infantile, inference, inferential*, etc.) as indicated below.

It is well known that, in a certain style of speech, [m̥] (labio-dental nasal) commonly occurs instead of [m] (bilabial nasal) or [n], before [f] or [v] (e.g. *comfort* [m̥f], *circumvent* [m̥v]; *infer* [m̥f]; *convince* [m̥v]) through regressive assimilation to [f] or [v]. However, neither *LPD*³ nor *EPD*¹⁷, any more than other pronouncing dictionaries, records this phenomenon. Pronouncing dictionaries regularly record the forms [mf] and [mv]. *LPD*³ and *EPD*¹⁷ record [m^pf] and [m^pv], respectively, with the epenthetic plosive [p]. They do not record [m̥^pf] and [m̥^pv], respectively, in which case [p̥] with labio-dental articulation (not bilabial articulation) would occur.

[ŋ – f] —
 [ŋ – θ] ([k] in *length*)
 [ŋ – s] ([k] in *Kingston*)
 [ŋ – ʃ] —
 [ŋ – v] —
 [ŋ – ð] —
 [ŋ – z] ([g] in *rings*)
 [ŋ – ʒ] —
 [ŋ – h] —

Whilst it is true that epenthetic plosives are susceptible of occurring in some of the phonetic contexts listed above, i.e. those phonetic contexts in connection with which I showed epenthetic plosives together with relevant example words, it is also true that the epenthetic plosives that one may expect to occur do not actually occur. Let us consider just one such phonetic context, [n – f].

The epenthetic plosive [t] occurs in [n – f] in *infant* ['mʰ ənt], *infancy* ['mʰ ənsɪ], *infantile* ['mʰ ən taɪəl], *inferential* [, mʰ ə 'renʰɪəl], *influential* [, mʰ lu 'enʰɪəl], *influenza* [, mʰ lu 'enz ə], *informatics* [, mʰ ə 'mæt ɪks], *infra* ['mʰ r ə], *infrared* [, mʰ r ə 'red], etc. In the pronunciation of these words, syllable division occurs *following* [nf] (see above), in which case the epenthetic plosive [t] occurs. The phonetic notations of the example words given above are all from *LPD*³. However, *EPD*¹⁷ differs markedly from *LPD*³ in connection with those cases where *LPD*³ indicates the epenthetic plosive [t] occurring in the phonetic context [n – f] and also in terms of where syllable division occurs in such cases. Whereas *LPD*³ admits the non-occurrence or occurrence of the epenthetic plosive [t] with syllable division *following* [nf] (e.g. ['mʰ ənt] *infant*), *EPD*¹⁷ does not admit the possibility of the non-occurrence or occurrence of the epenthetic plosive [t] and also shows syllable division *between* [n] and [f] (e.g. ['m. fənt] *infant*).

On the other hand, the epenthetic plosive [t] does not occur in [n – f] in *infect* [ɪn 'fekt], *infill* ['ɪn fɪl], *conference* ['kɒn fɪr ən's], *conflict* (n.) ['kɒn flɪkt], *conform* [kən 'fɔ:m], *confound* [kən 'faʊnd], *Manfred* ['mæn frɪd], *Renfrew* ['ren fru:], *Sanford* ['sæn fəd], etc. In the pronunciation of these words, syllable division occurs *between* [n] and [f], and the epenthetic plosive [t] does not occur between [n] and [f]. The phonetic notations given above are all from *LPD*³. There is no discrepancy between *LPD*³ and *EPD*¹⁷ in their indication of the non-occurrence of the epenthetic plosive [t] in words like those cited above. A minor typographical error may be pointed out. *EPD*¹⁷ gives *infect* [ɪn'fekt], which I suspect should be *infect* [ɪn.'fekt] in which syllable division is indicated by a low dot.

What has been said above about the epenthetic plosive [t] not occurring if syllable division is between [n] and [f] as in *infect*, *infill*, etc. applies also to e.g. *Stanford* ['stæn fəd]. On the other hand, what has been said above about the epenthetic plosive [t] occurring if syllable division follows [nf] as in *infant*, *infancy*, etc. applies also to *Stamford* (with the letter *m*) ['stæm^pf əd] in which the epenthetic plosive is [p], not [t], and the relevant phonetic context is [m – f] instead of [n – f], though these differences

do not seem to be significant. The phonetic notations shown are from *LPD*³. *EPD*¹⁷ gives *Stanford* ['stæn.fəd] with the same syllable division as shown in *LPD*³ without the epenthetic plosive [t], but *EPD*¹⁷ gives *Stamford* ['stæmp.fəd] with a different syllable division from that shown in *LPD*³ and with the epenthetic plosive [p] occurring. The criterion of syllable division I have mentioned in connection with the phonetic notations in *LPD*³ (e.g. ['mʰ ənt] *infant*) does not therefore seem to work in connection with those in *EPD*¹⁷ (e.g. ['m.fənt]; no epenthetic plosive [t]!).

What I have shown above about the non-occurrence or occurrence of an epenthetic plosive by taking the example of the phonetic context [n – f] and the epenthetic plosive [t] can also be said of other phonetic contexts and the relevant epenthetic plosives. I need only refer to one more phonetic context, [n – s], and the epenthetic plosive [t]. According to *LPD*³, the epenthetic plosive [t] occurs in e.g. *ransom/Ransom* ['ræn's əm]. Likewise *EPD*¹⁷ gives ['rænt.s əm] (though with a different syllable division from that shown in *LPD*³). On the other hand, according to *LPD*³, the epenthetic plosive [t] does not occur in e.g. *ransack* ['ræn sæk], and *EPD*¹⁷ likewise indicates ['ræn.sæk].

Epenthetic plosives are homorganic (i.e. in respect of 'place of articulation') with the respective nasal consonants that precede them. For example, [t] in [nts] is apico-alveolar like [n]; [p] in [mpθ] is bilabial like [m]; [k] in [ŋks] is dorso-velar like [ŋ]; and [p] in [mpf] is bilabial like [m]. I should add, however, that, as mentioned in fn. 5 and fn. 10, [p] in [mpf] can be labio-dental in a certain style of speech in which [m] and [p] may be regressively assimilated to [f]. Epenthetic plosives agree in voicedness or voicelessness (i.e. with respect of 'manner of articulation') with the fricative consonants that follow them. For example, [t] in [nts] is voiceless and [d] in [ndz] is voiced.

The mechanism whereby epenthetic plosives occur in the pronunciation of English words in the phonetic contexts of the type 'nasal consonant – fricative consonant' is well known. The occurrence of epenthetic plosives has fundamentally to do with a lack of neat and quick change from the articulation of nasal consonants to that of the following fricative consonants in relevant phonetic contexts such as those I have shown above. Nevertheless I will say a few words about how an epenthetic plosive may occur by taking the example of *dance* [da:n(t)s]. As I already said (p. 89), this phonetic notation is a conflation of [da:ns] and [da:nts] implicitly accompanied by the directional relationship between the two. In [da:ns], no epenthetic plosive occurs between [n] and [s]. In [da:nts], [t] occurs as an epenthetic plosive between [n] and [s]. Though I happen to be concerned with [da:nts] in explaining below about the mechanism whereby the epenthetic plosive [t] occurs, what I will say below applies *mutatis mutandis* to all other epenthetic plosives occurring in the mutually different relevant phonetic contexts generically specifiable as 'nasal consonant – fricative consonant'.

In the pronunciation of *dance*, an epenthetic plosive [t] may occur, resulting in [da:nts]. In articulating [n], which is voiced and nasal, the vocal folds are made to vi-

brate and at the same time the velum is in a lowered position so that the airstream coming up into the pharynx is allowed to enter the nasal cavity while the airstream that enters the oral cavity is prevented from issuing out of it because of the apico-alveolar closure which is necessary for the articulation of [n]. In readiness for the articulation of [s] which is voiceless and non-nasal and which follows [n], the vocal vibration is made to cease and at the same time a velic closure (a closure between the velum and the rear wall of the pharynx) is formed to prevent the airstream entering the nasal cavity. It may happen that, during the transition from [n] to [s], the cessation of the vocal vibration necessary for the articulation of [s] starts ‘prematurely’ while the articulation of [n] is still being executed, or the undoing of the apico-alveolar closure towards the end of the articulation of [n] is somewhat delayed. There consequently occurs, during the transition from [n] to [s], a partial overlapping between the terminal part of the articulation of [n] and the incipient part of that of [s], resulting in a sound whose place of articulation is identical with that of [n] (i.e. apico-alveolar) and whose manner of articulation is identical with that of [s] (i.e. voiceless). This transitional sound is [t] (apico-alveolar and non-nasal). The voiceless nature of [s] contributes (through regressive assimilation) to the formation of the transitional sound [t], but the hissing nature of [s] has no effect on it. The upshot is that, instead of [ns], there occurs [nts], in which [t] is a transitional plosive, which is known as the epenthetic plosive [t].

I have been using a notation like (t) as in [da:n(t)s] for *dance* which should be interpreted as being equivalent to ‘[da:ns] → [da:nts]’, where [t] is an epenthetic plosive. One conventionally talks in terms of none-or-all of [t]. However, it seems to me that we need some measure of precaution here.

Strictly speaking, because of the inertia that inevitably happens during the transition from one articulatory gesture (i.e. the velum in its lowered position for [n]) to another articulatory gesture (i.e. the velum raised to form a velic closure for [s]), it is highly questionable if [da:ns] without any intervention of [t] at all actually happens. The phonetic notation [da:ns] logically presupposes the possibility of a neat and quick transition from [n] to [s] without the occurrence of the epenthetic plosive [t]. But this presupposition may be contested. It would not be an empty speculation to suppose that the epenthetic plosive [t] is perceptible in different degrees during the transition from [n] to [s]. We generally acknowledge the occurrence of [t] once it exceeds a certain level of auditory threshold at which [t] becomes perceptible to the listener, hence [da:nts]. On the other hand, we assume the absence of [t] as long as [t] remains below the auditory threshold in question. In my view, the occurrence of an epenthetic plosive is a perceptual as much as an articulatory phenomenon.

It can be argued that the pronunciation [da:ns] may well largely be an illusion. Even if [da:ns] without [t] at all between [n] and [s] may be an illusory reality, it is nonetheless a useful illusion in that our acknowledgment of the occurrence of [t] in [da:nts] can only be possible as logically set against the non-occurrence of [t], i.e. [da:ns]. What I am saying here might be taken as something of a cavil. Nevertheless, I do not think it is a useless cavil. The point I am making will no doubt easily be proved

or disproved by instrumental evidence. However, it is not what a laboratory instrument shows that tells us whether or not an epenthetic plosive is involved. It is what the speaker/listener perceives that decides the non-occurrence or occurrence of an epenthetic plosive. We should not be dictated by what an instrument says. An instrument is useful for us in so far as it can confirm the reality of what the speaker/listener perceives or does not.

Despite some scepticism on my part expressed above about the clear-cut distinction between the non-occurrence and the occurrence of epenthetic plosives, I will conveniently operate with this distinction in the whole of my discussions to follow in this paper.

Consonants in English, when they occur as epenthetic plosives, are comparable, articulatorily and *perceptually*, to corresponding consonants in English that are known as realizations of the relevant consonant phonemes in this language. That is to say, there is no difference, articulatorily and perceptually, between e.g. [t] in [da:nts] *dance*, and [t] occurring as a realization of the phoneme /t/ as in [kæt] *cat* or [ˈʌtə] *utter*.¹¹

The remarks I have made in the foregoing parts of the present paper about epenthetic plosives in English are made from a phonetic point of view.

Epenthetic plosives in English can also be studied from a *phonological* point of view. Specifically, what is the *phonological status* of an epenthetic plosive in English? In the next part of this paper, I will make an attempt to establish the phonological status of [p], [t], [k], [b], [d] and [g] when they occur as epenthetic plosives. This attempt of mine will be made from the point of view of functional phonology which is practised in the Functionalist School associated with André Martinet.

* * *

In the following pages I will present my phonological analysis of epenthetic plosives in English.

(1) The objective of my present phonological analysis is to determine the *function* of the epenthetic plosives in English in the phonetic contexts where they occur, that is, to be precise, to determine the *phonological status* of these phonetic segments.

According to Martinet, there is no necessary correspondence between physical reality and linguistic function.¹² This functionalist principle is enunciated by him in respect of a given phonetic element as it occurs in different languages. I believe that the same functionalist principle applies to a given phonetic element *within one and the same language* as well. One of the well-known instances we know of this dictum

¹¹ I am assuming here that the occurrence of [t] in [kæt] and [ˈʌtə] is not [t] accompanied by [ʔ] (glottal stop), so that [t] is not pre-glottalized or post-glottalized or co-glottalized.

¹² Martinet (1960: II-3).

is what is known as ‘neutralization of a phonological opposition’. In German, the opposition between /t/ and /d/, for example, is valid in prevocalic position, as in *Tank* /t/ [t] and *Dank* /d/ [d], but is neutralized at the end of a moneme,¹³ as in *und* [t] or in *freundlich* [t], where [t] is not a realization of either /t/ or /d/ (as the opposition between /t/ and /d/ is neutralized) but is a realization of the archiphoneme /t-d/ (which other writers would notate /T/). The same phonetic segment, [t], the same physical reality, functions differently (i.e. phonologically differently), in prevocalic position on the one hand, and in moneme-final position on the other. Transferred to the question of the phonological status of an epenthetic plosive, the objective of my analysis will be to see if the phonological status of e.g. [t] in [da:nts] is the same as the phonological status of [t] in e.g. [kæt] *cat* and [ʼʌtə] *utter*. In carrying out my phonological analysis, I will be guided by the concept of ‘opposition’, which is unquestionably Saussurean. We see a fundamental difference between [t] occurring as an epenthetic plosive in [n – s] on the one hand and [t] occurring in e.g. [kæt] on the other, that is, not as an epenthetic plosive. The former [t] does not enter into paradigmatic relation with any other consonants while the latter [t] does in the phonetic context [kæ–]. The latter [t] enters into a paradigmatic relation with [d], [p], [k], [θ] and [n], among other consonants. Witness the following which shows that [t] is differentiated from some other consonant sounds in English in the phonetic context [kæ–].

[kæt] *cat* vs. [kæd] *cad* vs. [kæp] *cap* vs. [kæk] *cack* vs. [kæθ] *Cath* vs. [kæn] *can*, etc.

Witness also the following which shows that [t] is distinguished from some other consonants in English in the phonetic context [ʼʌ–ə].

[ʼʌtə] *utter* vs. [ʼʌdə] *udder* vs. [ʼʌpə] *upper* vs. [ʼsʌkə] *sucker* vs. [ʼɑ:θə] *Arthur*, etc.

I intentionally do not bring into the picture those phonetic contexts in which [t] is aspirated (cf. e.g. *tall*, *attack*, *twine*, *tune*, *try*), unlike the epenthetic plosive [t].

The availability of the paradigmatic relation among [t], [d], [p], [k], [θ] and [n], etc. in various phonetic contexts ultimately enables the identification of the phonological units whose realizations are [t], [d], [p], [k], [θ] and [n], etc.. The phonological analysis in question will of course be conducted through the commutation test. These phonological units will be identified as /t/, /d/, /p/, /k/, /θ/ and /n/, etc.

Unlike [t] occurring in phonetic contexts such as [kæ–] and [ʼʌ–ə], the epenthetic plosive [t] which occurs in the phonetic context [n – s] does not enter into a paradigmatic relation with, is not differentiated from, and therefore, is not commutable with, any other consonants. This is simply because the epenthetic plosive [t] is the only plosive that occurs in [n – s]. What has just been said about the epenthetic plosive [t] also applies *mutatis mutandis* to the other epenthetic plosives occurring in the respective phonetic contexts listed further above.

¹³ For the concept of ‘moneme’ see e.g. Martinet (1968a) (= Martinet 1975: 196-204), Martinet (1968b) (= Martinet 1975: 176-81), Martinet (1974) (= Martinet 1975: 205-15), and Martinet (1985: 3.1). See also Costauvec & Guérin (2007: 39ff).

It follows from what has been said that the phonological status of the epenthetic plosives cannot be determined by recourse to paradigmatic relations and consequently through the commutation test.

Working within the framework of functional phonology, I do not intend to carry out my phonological analysis by basing it on the double criterion of 'phonetic similarity' and 'once a phoneme, always a phoneme' and thus identify the phonological unit whose realization is the epenthetic plosive [t]. If my phonological analysis were based on this double criterion, [t] in [da:nts], for example, would be identified without further ado as an 'allophone' of the phoneme /t/ which would have been previously established as occurring in e.g. *tea* /ti/,¹⁴ *pit* /pɪt/, *better* /'betə/, and so on. Likewise, all the rest of the epenthetic plosives, i.e. [d], [p], [b], [k] and [g], would be identified as allophones of /d/, /p/, /b/, /k/ and /g/, respectively.

The phonological analysis carried out with the double criterion of 'phonetic similarity' and 'once a phoneme, always a phoneme' is largely and in essence attributable to Daniel Jones and the Bloomfieldians. It may not be out of place to refer here to what Jones says regarding his notion of the phoneme. According to Jones, a phoneme is by definition a family of complementarily distributed phonetically similar sounds and what a phoneme does is to distinguish words. According to Jones, that a phoneme distinguishes words is not part of the definition of the phoneme. In other words, the distinguishing capacity of the phoneme, i.e. the oppositive or distinctive function of the phoneme, lies outside his definition of the phoneme, and is of secondary importance to him, without his ignoring it. It is this latter aspect of the phoneme ascribable to Jones that I am primarily interested in. Jones's view that a phoneme distinguishes words is clearly an implicit reference to the oppositive function of the phoneme, even though, in his extensive writings, Jones rarely employs the term 'opposition' or associated terms.¹⁵ We also take note of Jones's axiomatic principle that a sound cannot be ascribed to more than one phoneme. This principle underlies the principle known as 'once a phoneme, always a phoneme'.

(2) If an epenthetic plosive is a realization of a phoneme or an archiphoneme, then the absence or presence of the phoneme or archiphoneme would affect the identities of words concerned. For example, the non-occurrence or occurrence of the epenthetic plosive [t] in the pronunciation of the word *dance*, i.e. [da:ns] or [da:nts], should affect the identity of this word, so that /da:ns/ would be the signifier (Fr. *signifiant*) of one word and /da:nts/¹⁶ that of another word. In reality the two words whose

¹⁴ I notate *tea* /ti/ rather than /ti:/ as I consider the qualitative rather than quantitative differences to be phonologically essential in the (British) English vowel phonemes.

¹⁵ The term 'opposition' is found in the 'Index of subjects' (1950¹: 266, 1962²: 266, 1967³: 283). However, in the paragraph to which he refers, i.e. §53, this term does not actually occur. It is obvious, however, that Jones does talk about the distinguishing capacity of the phoneme in § 53.

¹⁶ The two signifiers I have conveniently and vicariously presented here, i.e. /da:ns/ and /da:nts/, are not mine but what I suppose those who operate with the double criterion of 'phonetic similarity' and 'once a phoneme, always a phoneme' would arrive at.

signifiers might be /da:ns/ and /da:nts/ would be identical with each other. It is therefore highly likely that [t] is not a realization of either a phoneme or an archiphoneme. It behoves me to find out whether or not the epenthetic plosives in English are realizations of minimum distinctive units of the second articulation,¹⁷ be they phonemes or archiphonemes.

(3) The phonetic substance of an epenthetic plosive, e.g. [t] in the phonetic context [n – s] (as in [da:n(t)s]), when it does occur ([da:nts]) is such that it shares some phonetic properties of the nasal that precedes it, i.e. apicality of [n], and that of the fricative that follows it, i.e. voicelessness of [s]. Nevertheless, the distinctive unit, be it a phoneme or an archiphoneme, to which the epenthetic plosive [t] in question might be thought by some to be ascribed cannot be *both* the phonemes /n/ and /s/.

(4) A phoneme or an archiphoneme represents by definition a *choice* on the part of the speaker. When the speaker chooses to use the word *pit* whose signifier is /pit/, he chooses the phoneme /p/ instead of e.g. /b/ in /bit/ *bit*, /k/ in /kit/ *kit*, /ʃ/ in /ʃit/ *chit*, /h/ in /hit/ *hit*, and so on. Any epenthetic plosive is by nature an excrescent sound and therefore does not represent a choice on the part of the speaker. This means that, for example, the epenthetic plosive [t] in [da:nts] cannot be a realization of a distinctive unit, either a phoneme or an archiphoneme, which the speaker chooses instead of another. If [t] were a realization of a phoneme or an archiphoneme, there would be an opposition between zero (relating to the non-occurrence of [t]) and a phoneme or archiphoneme (relating to the occurrence of [t]), but this is not the case.

(5) We will first investigate by way of curiosity if, for example, the epenthetic plosive [t] as in [da:nts] is the sole epenthetic plosive susceptible of occurring during the transition from [n] to [s]; in other words, is any of the other epenthetic plosives, [p], [k], [b], [d] and [g], also susceptible of occurring in the context [n – s]? We can confirm that none of [nps], [nbs], [nds], [nks], [ngs], [ntʃs], [ndʒs], [nfs], [nvs], [nθs], [nðs], [nss], [nzs], [nʃs], [nʒs], [nms], [nns], [nɲs], [nls], [nrs] and [nhs] occurs. Consequently, it is perfectly evident that [t] is the sole epenthetic plosive susceptible of occurring in the context [n – s], and as a result [nts] alone is susceptible of occurring.

(6) We can confirm from what was said in the course of (1) that no paradigmatic relation is conceivable between [t] and any other consonants and from what was said in (5) just above that [t] is the sole epenthetic plosive that is susceptible of occurring in the context [n – s]. The phonological status of the epenthetic plosive [t] is as a result undeterminable through the commutation test, as [t] in question cannot be differentiated from [d] (cf. [t] vs. [d]), from [n] (cf. [t] vs. [n]), from [p] (cf. [t] vs. [p]), from [k] (cf. [t] vs. [k]), from [θ] (cf. [t] vs. [θ]), or from [ʃ] (cf. [t] vs. [ʃ]), to say nothing of other consonants. Were it otherwise, [t] might be identified as a realization

¹⁷ For ‘second articulation’ as well as ‘first articulation’ and ‘double articulation’ see e.g. Martinet (1955: 4.2, 5.6), Martinet (1960: I-8), Martinet (1962: 21-6), Martinet (1965: 1-35), and Martinet (1985: 2.17).

of a phoneme whose phonological content would be “voiceless apical non-nasal plosive”.

(7) The epenthetic plosive [t] occurs also in the phonetic contexts [n – θ] as in [ten(t)θ] *tenth*, [n – f] as in [ˈm(t)f ənt] *infant* and [n – ʃ] as in [ˈmæn(t)ʃn] *mansion*.¹⁸ What has previously been said *supra* in (1) and (6) to the effect that no opposition is conceivable between the epenthetic plosive [t] and any other epenthetic plosives in the phonetic context [n – s] applies equally to the epenthetic plosive [t] in the phonetic contexts [n – f], [n – θ] and [n – ʃ]. Therefore we conclude that the epenthetic plosive [t] occurring in these latter phonetic contexts cannot be realizations of phonemes or archiphonemes, either.

(8) It follows from what was said in (5) and (6) that a minimum distinctive unit of the second articulation, be it a phoneme or an archiphoneme, of which an epenthetic plosive might be supposed to be a realization, is unidentifiable through the commutation test and consequently its phonological content in terms of relevant features would be undeterminable. The determination of the identity of a phoneme or an archiphoneme whose realization the epenthetic plosive [t] that occurs in the phonetic context [n – s] might be calls for a careful analysis.

What has been said about the epenthetic plosive [t] also applies *mutatis mutandis* to all the other epenthetic plosives susceptible of occurring in the mutually different relevant phonetic contexts.

(9) It is inconceivable for the epenthetic plosive [t] in [nts] (cf. [da:nts]) to be a realization of /s/. The phonological content of /s/ is “voiceless hissing” and its realization [s] is voiceless and hissing. That [t] is a plosive in [nts] and not hissing confirms that the plosiveness of [t] does not result from any regressive assimilation to [s].

(10) Then, how about the possibility that the epenthetic plosive [t] in [nts] is a realization of /n/ “apical nasal”? /n/ is phonologically neither “voiced” nor “voiceless”, so that realizations of /n/ can be voiced (i.e. [n]) or voiceless (i.e. [n̥]), as the case may be. On the other hand, realizations of /n/, one of whose relevant features is “apical”, must always be of apical articulation. The realization of /n/ in the phonetic context [n – s] where an excrescent sound occurs is [n̥]. The first phase of [n̥] is [n] (voiced) and the second phase is [n̥] (voiceless). The voicelessness in [n̥] is caused through regressive assimilation to [s] (a realization of /s/). But we know that [nts], not [n̥s], occurs in reality. How does [n̥] change to [t]? The answer is that [n̥] changes to its corresponding oral (i.e. non-nasal) sound [t] as a velic closure is prematurely formed while [n] is still being articulated in readiness for [s] which is non-nasal and which therefore requires a velic closure for its articulation. The lateral occlusion (made between the whole side rim of the tongue and the whole side of the alveolar ridge) is maintained throughout the articulation of [n̥], and the subsequent articula-

¹⁸ The fact that the point of articulation for [t] in [n(t)θ] is dental and that for [t] in [n(t)f] is palato-alveolar is of no importance in considering the matter in hand.

tion of [nt] results from [ŋ] > [t]. The lateral occlusion and the apico-alveolar contact made for [t] (in fact, already made for [nŋ]) are then undone as the articulation of [s] begins. This means that [nt] (cf. [nŋ] > [nt]) in [nts] (as in [dɑ:nts]) is a realization of /n/. Phonologically, then, [nts] is /ns/, hence [dɑ:nts] /dans/.

Thus, according to my phonological analysis, the epenthetic plosive [t] (as in e.g. [nts]) is not a realization of a phoneme or an archiphoneme separate from both /n/ and /s/. A phonological analysis based on the double criterion of phonetic similarity and ‘once a phoneme, always a phoneme’ would reach a different conclusion, i.e. the epenthetic plosive [t] is an allophone of /t/, an analysis I do not subscribe to.

If [dɑ:nts] is analyzed as /dans/, as has just been shown, how about [dɑ:ns] (i.e. without the epenthetic plosive [t])? According to my analysis, [dɑ:ns] corresponds to /dans/ as well.

(11) While on the subject of epenthetic plosives, Ladefoged makes a statement that seems to me to be compatible with my phonetic notation [nŋ]. He has the following to say.¹⁹

[...] Words such as “something” and “youngster” often get pronounced as [ˈsʌmpθɪŋ] and [ˈjʌŋkstə]. [...] it is the articulation of the nasal [i.e. [m], [n] or [ŋ]] that spreads onto that of the epenthetic stop.

I believe that Ladefoged is here making an implicit reference to [nŋ] as well as [mŋ] and [ŋŋ].

(12) As a result of my phonological analysis of [dɑ:n(t)s], in which (t) signifies the absence or presence of the epenthetic plosive [t], both [dɑ:ns] and [dɑ:nts] correspond phonologically to /dans/. [n] and [nt] are realizations of one and the same phoneme, /n/, and they both can be alternatively referred to as ‘variants’ of /n/. Variants can be of different kinds, but perhaps the best known are ‘combinatory variants’ (also known as ‘contextual variants’ or ‘positional variants’). The terms ‘combinatory’, ‘contextual’ and ‘positional’ refer to contexts of syntagmatic nature. [nt] in question is a combinatory variant of /n/ since the occurrence of [t] in [nt] is due to the presence of /n/ as much as that of /s/ that follows /n/. However, this syntagmatic factor does not necessarily produce [t] following [n], in which case we talk about the non-occurrence of the epenthetic plosive [t]. When the epenthetic plosive [t] does not occur (or is said not to occur), this is due to a substantially quick undoing of the velic closure, or a non-premature start of the articulation of [s] that follows [n], during the transition from [n] (/n/) to [s] (/s/).

(13) The three principal phonetic properties of [t] in [nts] are apicality, voicelessness and non-nasality. Of these phonetic properties, voicelessness and non-

¹⁹ Ladefoged (1993³: 94). Neither a reference to the epenthetic plosives [p] and [k] (or any other epenthetic plosives) nor the above quoted statement is found in Ladefoged (1975¹) or Ladefoged (1982²).

nasality are contextually determined (regressive assimilation to /s/) and therefore phonologically irrelevant. This is why, although [t] is non-nasal while /n/ is relevantly “nasal”, [t] can be attributed to /n/. As for apicality, this remains unaffected by the regressive assimilation mentioned above, and is phonologically relevant, thus “apical”.

(14) In connection with my phonological analysis of apicality (which is phonologically relevant) and of non-nasality and voicelessness (both being phonologically irrelevant) of the epenthetic plosive [t], I wish to quote the following words of Martinet.²⁰

Linguistiquement sont donc seuls pertinents les éléments de la chaîne parlée dont la présence n’est pas automatiquement entraînée par le contexte où ils apparaissent [...]

I take it that ‘les éléments’ in the above quoted passage refer not necessarily to segmental elements (e.g. the epenthetic plosive [t] as such) but, as the case may be, to phonetic qualities (e.g. non-nasality, voicelessness) as well. My phonological analysis of [t] in [nt] as part of a realization of /n/ seems congruous with the principle enunciated in Martinet’s words quoted above.

(15) According to my phonological analysis, [t] in [nt] as in [dɑ:nts] is regarded as part of a realization of /n/ in the phonetic context [n – s]. This phonological analysis is valid *mutatis mutandis* when another nasal occurs instead of [n] and another fricative occurs instead of [s]. Here below is the summary of my conclusion on the phonological status of the whole of the epenthetic plosives in English.

[p] in [wɔ:mpθ] : [p] is part of a realization of /m/.
 [t] in [dɑ:nts] : [t] is part of a realization of /n/.
 [k] in [ˈkɪŋkstən] : [k] is part of a realization of /ŋ/.
 [b] in [læmbz] : [b] is part of a realization of /m/.
 [d] in [wɪndz] : [d] is part of a realization of /n/.
 [g] in [rɪŋgz] : [g] is part of a realization of /ŋ/.

(16) It is well known that [t] is often replaced by [ʔ] (glottal stop) in certain well-definable contexts in English. I have in the past discussed the phonological status of [ʔ] in one of my works²¹ and come out with the conclusion that [ʔ] can be identified, as the case may be, as a realization of /t/ or one or another of the few archiphonemes I identified. According to my phonological analysis, the occurrence of [ʔ], instead of [t], as a realization of /t/, is due to ‘the instability of alveolar articulation in English’ that Gimson²² mentions and which I invoked²³ in explaining the glottal stop acting as a secondary and accessory ‘prop’ for the apical articulation of [t] in case this articulation fails to materialize.

²⁰ Martinet (1960: II-6).

²¹ Akamatsu (2007).

²² Gimson (1960).

²³ Akamatsu (2007: 16-7).

(17) Does it happen that the epenthetic plosive [t] as in e.g. [prints] for *prince* is replaced by [ʔ] and, as a result, *prince* is pronounced [pɾɪnʔs]? Let it be noted that I am not talking here about *prints* [prints/pɾɪnʔs]. My answer is in the negative, and therefore *[pɾɪnʔs]. There are two reasons that militate against [ʔ] replacing the epenthetic plosive [t] in *prince*. First, in all cases in which epenthetic plosives occur in the various contexts generically specifiable as ‘nasal consonant – fricative consonant’, the epenthetic plosives are homorganic with the respective nasal consonants that precede them. For example, [t] in [nts] is apico-alveolar in homorganicity with [n] which is also apico-alveolar. However, [ʔ] is glottal and therefore the condition of homorganicity with [n] is not met. Secondly, the phonological status of [ʔ], if it ever occurred at all in replacement of the epenthetic plosive [t], could not possibly be a realization of /t/ or any one of the archiphonemes, as any phoneme or any archiphoneme is a minimum distinctive unit of the second articulation, which means that it represents a *choice* on the part of the speaker. Any epenthetic plosive, like [t] in the present case, is a transitional sound which eludes the speaker’s choice and cannot be regarded as a realization of any minimum distinctive unit of the second articulation, be it /t/ or otherwise.

(18) The question of [ʔ] raised and explained in connection with the epenthetic plosive [t] above (in (17)) should not be confused with that of [ʔ] which may replace [t] in e.g. *prints* pronounced [prints] or [pɾɪnʔs]. Let it be noted that I am here not talking about *prince* [prints/*pɾɪnʔs]. The possibility of such a variant pronunciation as [pɾɪnʔs] for *prints* involving the replacement of [t] by [ʔ] is mentioned by John Wells who writes as follows.²⁴

I natively make a firm distinction between the two possibilities. My *prince* has [ns], my *prints* has [nts] (or [nʔs]). But I know that many people don’t make any such distinction.

The occurrence of [ʔ] instead of [t], as Wells notes in the above quoted passage, can be accounted for in the way I explained above in (16). [ʔ] in [nʔs] in the variant pronunciation of *prints* is a realization of /t/.

(19) I will continue to discuss the variant pronunciations of the word *prince*. These variant pronunciations are [pɾɪns], and [prints] with the epenthetic plosive [t]. Phonologically, both [pɾɪns] and [prints] correspond to /pɾɪns/. This is not surprising as the epenthetic plosive [t] is part of a realization of /n/ (i.e. [nt]) and also the absence or presence of the epenthetic plosive [t] has no impact on the identity of the word *prince*. For this reason, it is normal that the average phonetically untrained speaker/listener of English may not notice the absence or presence of epenthetic plosive [t] in the variant pronunciations of this word, though it may not necessarily apply to cases like *Samson* and *Sampson*, *Simson* and *Simpson*, *Thomson* and *Thompson*, etc., in which the epenthetic plosive [p] occurs (in *Samson*, *Simson* and *Thomson*,

²⁴ ‘John Wells’s phonetic blog’, dated 25 August, 2010.

etc.) or the omissible [p] occurs (in *Sampson, Simpson and Thompson*, etc.) I will discuss this further below, in (37) to (42).

(20) We turn our attention to the word *print* (n./v.) which seems to be pronounced [print] by many, if not all, speakers. Phonologically, [print] corresponds to /p r ɪ m-n-ŋ t/. /m-n-ŋ/ is the archiphoneme definable as “nasal” associated with the neutralization of the opposition /m/ – /n/ – /ŋ/. /m/ is definable as “labial nasal”, /n/ as “apical nasal” and /ŋ/ “as “dorsal nasal”.

(21) Now I will consider *prints*, the plural form of *print* (n.) or the verbal form *prints* (3rd person singular present tense of *print* (v.)) Both are pronounced [prints], which corresponds phonologically to /p r ɪ m-n-ŋ t s-z/. /s-z/ is the archiphoneme definable as “hiss” which is associated with the neutralization of the opposition /s/ – /z/. /s/ is definable as “voiceless hiss” and /z/ “voiced hiss”.

(22) I now return to another case of [prints], which is one of the variant pronunciations of *prince* [prin(t)s] that involves the non-occurrence or occurrence of the epenthetic plosive [t]. [prints] in this case corresponds phonologically to /prɪns/.

(23) We see (in (21) and (22)) that one and the same phonetic structure [prints] corresponds to two different phonological structures, namely, /prɪns/ (*prince*) and /p r ɪ m-n-ŋ t s-z/ (*prints*). This comes as no surprise to functionalists since, as mentioned earlier (in (1)), there is no necessary correspondence between physical reality (in the present case, [prints]) and linguistic function (also in the present case, /prɪns/ and /p r ɪ m-n-ŋ t s-z/).

The phonological structure /prɪns/ is the signifier of the moneme (Fr. *monème*) *prince*. The phonological structure /p r ɪ m-n-ŋ t s-z/ is the signifier of the syntheme (Fr. *synthème*)²⁵ *prints* (= *print* + *s*).

(24) The case of [prints] (one of the variant pronunciations of *prince*) that involves the epenthetic plosive [t] and the case of [prints] (the usual pronunciation of *prints*) lead us to talk about homophony, as [prints] in the two cases constitute what many will describe as two homophones.

We find the following statement made by Gimson.²⁶

Few RP speakers regularly maintain the distinction between /ns/ and /nts/ which is widespread in regional speech, e.g. distinguishing the final clusters in *mince–mints*, *tense–tents*, *assistance–assistants*, *dance–plants*, /nts/ tending to be used in all cases. [...]

²⁵ The concept of ‘syntheme’ is explained by Martinet (1979: 233) as follows: ‘Un synthème est une unité significative, formellement et sémantiquement analysable en deux ou plus de deux monèmes, mais qui, syntaxiquement, entretient les mêmes relations avec les autres éléments de l’énoncé que les monèmes avec lesquels elle alterne.’ See also Costauque & Guérin (2007: 56ff).

²⁶ Gimson (1970²: 187). The statement to be quoted below is yet to be found in Gimson (1962¹). It is repeated in Gimson (1980³: 187), Gimson (1989⁴: 188), Gimson (1994⁵: 177), Gimson (2001⁶: 187) and Gimson (2008⁷: 199).

The pair of words *tents* and *tense*, cited in the above quoted statement, are homophones as *tents* and *tense* may both be pronounced either [tens] (*tents* being pronounced without [t] which is omitted while *tense* may be pronounced [tens]) or [tents] (*tents* being pronounced [tents] while *tense* may be pronounced [tents] with the epenthetic plosive [t]). This fact is noted in the following lines.²⁷

The elision of /t/ in words like *vents* is sometimes counterbalanced by the tendency to insert an epenthetic /t/ in words like *dance*, *fence*, *sense*, *bounce*, etc., so that *tents* and *tense* may sound the same as either /tens/ or /tents/.

If so, two instances of homophony exist, [tens] on the one hand and [tents], on the other, for both words. Indeed *LPD*³ indicates [ten's] for *tense* and [tents] for *tents*. On the other hand, *EPD*¹⁷ indicates [tents] for *tense* but [tents] – not [tents] – for *tents*. This means that, for *EPD*¹⁷, homophony exists for [tents] only, as *tents* is always pronounced [tents] while *tense* may be pronounced [tents] with the epenthetic plosive [t] (as well as [tens]).

The passage quoted above appears to partially contradict the passage quoted earlier that says that *tense* and *tents* (as well as *mince* – *mints*, *assistance* – *assistants*, *dance* – *plants*) tend to be pronounced with [nts] in all cases, in which case no homophony would exist between *tense* when pronounced [tens] and *tents* when pronounced [tents].

I must mention in passing that the phonological notation /nts/ in the two above quoted passages is at variance with my phonological analysis of [nts] ([t] being an epenthetic plosive here) in which [nt] is a realization of /n/ and therefore [nts] corresponds phonologically to /ns/.

(25) Homophony between *mince* and *mints*, *tense* and *tents*, and *assistance* and *assistants*, cited in the earlier quoted passage, is of course in the phonetic forms [mɪnts], [tents], and [ə'sɪst ənts], respectively. Do these instances of homophony cause hindrance to communication? Some measure of confusion may arise in the case of *assistance* and *assistants* being pronounced homophonously ([ə'sɪst ənts]) if a context is such that either word is possible (e.g. *I want some assistance / I want some assistants*). If this also happens in such an utterance as *Go and buy some* [mɪnts],²⁸ there may occur some damage to communication. Such confusion is little likely for a pair like *tense / tents*. A pair like *print / prince* (when both are homophonously pronounced [prɪnts]) may suffer little communication damage, but how about utterances

²⁷ Gimson (2008⁷: 251-2).

²⁸ This context is mentioned in Wells (1982: 97). The word *mince* (n.), when used in this context, means 'mincemeat' or is, as Wells puts it (*loc. cit.*, *op. cit.*), 'the everyday name for minced beef or hamburger ...'.

like *Some day my prints will come* / *Some day my prince may come*?²⁹ The pair *dance* / *plants* will most probably suffer no damage.

(26) My phonological analysis of the pronunciations of *mince* and *mints*, *tense* and *tents*, and *assistance* and *assistants*, where the first word of each pair is pronounced with the epenthetic plosive [t], leads me to specify the signifiers of these words as follows:

mince /mɪns/ vs. *mints* /mɪm-n-ɪt s-z/
tense /tens/ vs. *tents* /tɛm-n-ɪt s-z/
assistance /ə'sɪst-ɪd əns/ vs. *assistants* /ə'sɪst-d əm-n-ɪt s-z/

(27) English has the sequence of sounds [ntθ] word-medially or word-finally (word-initial position can safely be ruled out) where [t] is an epenthetic plosive. There are a number of words which orthographically contain *nth* word-medially or word-finally and whose pronunciation is susceptible to the non-occurrence or occurrence of the epenthetic plosive [t]. Here are some examples adduced at random: *amaranth*, *amaranthine*, *decillionth*, *eighteenth*, *fifteenth*, *hyacinth*, *jacinth*, *labyrinth*, *labyrinthian*, *millionth*, *ninth*, *nineteenth*, *pyracanth*, *perianth*, *terebinth*, *tragascanth*, *trillionth* and *month*. In the pronunciation of all these and other relevant words, the epenthetic plosive [t] may or may not occur in the phonetic context [n – θ]. Thus, to take just one example, *ninth* is pronounced either [nθ] or [ntθ] where [t] is an epenthetic plosive. Both *LPD*³ and *EPD*¹⁷ indicate the non-occurrence or occurrence of the epenthetic plosive [t] in these words, i.e. [nam^hθ] (*LPD*³) and [namtθ] (*EPD*³).

(28) With regard to the epenthetic plosive [t] in the context [n – ʃ], [t] in e.g. [ntʃ] *mansion* is considered as part of a realization of /n/, so that [nt] as a whole is a realization of /n/. Is this phonological analysis of the epenthetic plosive [t] in the context [n – ʃ] valid and applicable to all instances of the epenthetic plosive [t] in [ntʃ]? It is certainly so in all cases where [ntʃ] occurs word-medially, as in e.g. *mansion*, *pension*, *suspension*, *expansion*, *tension* and a host of other words. Both *LPD*³ and *EPD*¹⁷ record, in all these cases, [n^hʃ] (*LPD*³) and [ntʃ] (*EPD*¹⁷).

It has been pointed out that [t] of [ntʃ] in which [t] is an epenthetic plosive and [ʃ] that follows it do not ‘coalesce’ to form the affricate [tʃ].³⁰ In other words, [tʃ] in this case is comparable to [tʃ] (i.e. [t] + [ʃ]) in e.g. *courtship*, not to [tʃ] in e.g. *ketchup* in which [t] and [ʃ] form a well-knit unit, the affricate [tʃ].

²⁹ These two utterances are borrowed from ‘John Wells’s phonetic blog’, dated 25 August, 2010.

³⁰ Gimson (2001⁶: 238) and Gimson (2008⁷: 252). This view is most likely that held by Cruttenden who is the reviser in the 6th and 7th editions. Save my oversight, this view is yet to be found in Gimson (1994⁴), for which Cruttenden is also the reviser.

(29) The sequence of sounds [ntʃ] also occurs word-*finally*, as in *lunch*, *French*, *hunch*, *finch*, *branch*, *wrench*, etc.³¹ Is [t] of [ntʃ] in these words also an epenthetic plosive? Two different pronunciations of e.g. *lunch* exist. (i) Some people consistently pronounce [ntʃ] but (ii) others pronounce [nʃ]. In English phonetics literature, the presence or absence (note, not the absence or presence) of [t] here is *not* considered as a case of an epenthetic plosive. It is instead considered as a different type of phonetic phenomenon wherein [t] is *omissible* (i.e. [ntʃ] → [nʃ], i.e. '[t] → zero'), not *insertable* as in the case of the epenthetic plosive [t] in e.g. [da:ns] → [da:nts], i.e. 'zero → [t]'.

Incidentally, no English words ending orthographically with *nsh* which would correspond to [nʃ] are attested. In fact, word-final /nʃ/ is an unattested phonological structure in English. The variant pronunciations, [ntʃ] and [nʃ] ([ntʃ] > [nʃ]) word-finally has nothing to do with the epenthetic plosive [t].

In conclusion we can say that the epenthetic plosive [t] occurs word-medially as in *mansion*, *pension*, *suspension*, etc. but it does not word-finally as in *lunch*, *French*, *hunch*, *finch*, *branch*, *wrench*, etc.

(30) Whilst the epenthetic plosive [t] occurs in [n – ʃ] in word-medial position (cf. *mansion*, *pension*, etc.), it does not follow that the epenthetic plosive [t] *necessarily* occurs in [n – ʃ] in that position.

It is enough to witness words like *gunship*, *gunshot*, *gunshy*, *sunshade* and *sunshine* (and a host of other words) for us to be certain of this fact. Neither *LPD*³ nor *EPD*¹⁷ indicates the possibility of the epenthetic plosive [t] occurring in these and other relevant words.

Three factors need to be mentioned in this connection.

(i) While syllable division occurs *after* [ʃ] (hence *after* [nʃ] taken as a whole) in those cases (cf. *mansion*, *pension*, etc.) in which the epenthetic plosive [t] occurs, syllable division occurs *between* [n] and [ʃ] in those cases (cf. *gunship*, *sunshade*, etc.) in which no epenthetic plosive [t] occurs.

(ii) It is obvious that syllable division occurring *between* [n] and [ʃ] corresponds to the point at which there is the boundary between the constituents (cf. *gun*, *ship*; *sun*, *shade*; etc.) of the compounds (i.e. *gunship*, *sunshade*, etc.). In functional linguistics, these compounds are classified as one of the types of *syntheme*³² and the constituents of a *syntheme* exemplifiable by e.g. *gunship* (< *gun* + *ship*) are classifiable as 'liberable monemes' (Fr. *monèmes libérables*),³³ i.e. monemes that can stand

³¹ It is presumably more appropriate to notate the affricate in these words with [tʃ] rather than [tʃ], but I purposely retain the notation [tʃ] in view of my specific reference to and discussion of [t] in [tʃ] ([tʃ]?) below.

³² For the definition of 'syntheme' see *supra* fn. 25.

³³ For 'liberable moneme', see *inter alia* Martinet (1979: 6.6) and Costauuec & Guérin (2007: 59).

independently in other contexts, which would correspond, in a certain way, to ‘free forms’³⁴ in Bloomfieldian linguistics. Likewise, the word *king-size* (which I cited earlier, on p. 92, and described as a compound consisting of *king* and *size* which are free forms) is also this type of syntheme and *king* and *size* are liberable monemes, while the word *Kingston* (which I cited also on p. 92 and described as consisting *king* which is a free form and *s* and *ton* which are bound forms) is another type of syntheme as, although *king* is a liberable moneme, *s* and *ton* are each a non-liberable moneme (Fr. *monème non libérable*),³⁵ which correspond to ‘bound forms’ in Bloomfieldian linguistics.

(iii) A ‘potential pause’ (Fr. *pause virtuelle*)³⁶ occurs at the point of the boundary between the liberable monemes, i.e. between e.g. *gun* and *ship*, more precisely between [n] (of [gʌn]) and [ʃ] (of [ʃɪp]). This corresponds to what Bloomfieldians call ‘internal open juncture’.³⁷ The phonetic transition from [n] to [ʃ] in e.g. *gunship* [ˈgʌnʃɪp] (i.e. [ˈgʌn ʃɪp] in which a space indicates syllable boundary, or [gʌn+ʃɪp] in which ‘+’ indicates the potential pause or the internal open juncture) differs from that in e.g. *mansion* [ˈmænsɪʃən] (as notated in *LPD*³) in that the presence of a potential pause does not lend itself to the intervention of an epenthetic plosive (which, if it occurred, would be [t]) while the absence of a potential pause is propitious to the intervention of the epenthetic plosive [t].

The same can be said *mutatis mutandis* of the non-occurrence or occurrence of the epenthetic plosive [t] in the phonetic context [n – s] in word-medial position in e.g. *gunslinger*, *gunsmith*, *sunscreen*, *sunseeker*, *sunset*, *sunspot*, *sunstroke* and a host of other words.

(31) An explanation is called for as to why a potential pause after [n] in the context [n – s] or [n – ʃ] in word-medial position prevents an epenthetic plosive occurring as we saw just above (in (30)). In my view, the speaker lingers, however slightly, on [n] as he is aware that the first constituent (e.g. *gun*) ends at the point where [n] occurs and consequently he does not ‘prematurely’ go on to articulate [s] or [ʃ]. This is a phenomenon caused by the presence of a potential pause which makes [n] behave rather as it does just before a pause. This is unlike what the speaker does in e.g. *cancer* [ˈkænsə] in which no potential pause is present after [n] and the epenthetic plosive [t] may or may not occur between [n] and [s]. Therefore the realization of /n/ in e.g. *mansion* [ˈmænsɪʃən] with the epenthetic plosive [t], i.e. [nt], without a potential pause after [n], differs from that in e.g. *gunshot* [ˈgʌnʃɒt] without an epenthetic plosive, i.e. [n] with a potential pause after [n]. Likewise, the epenthetic plosive [t] does

³⁴ For ‘free form’ see *supra* fn. 6.

³⁵ For ‘non-liberable moneme’, see *inter alia* Martinet (1979: 6.6 and 6.7) and Coustaouec & Guérin (2007: 64).

³⁶ For ‘potential pause’, see Martinet (1960: III-6).

³⁷ For ‘internal open juncture’, see Trager & Bloch (1941: 226) and Bloch & Trager (1942: 470). ‘Internal open juncture’ is also called ‘plus juncture’ as it is alternatively indicated by a plus sign, ‘+’.

not occur in e.g. *sunset* ['sʌn set] on the one hand but may or may not occur in e.g. *cancer* ['kæn(t)s ə] on the other hand.

(32) *LPD*³ notationally distinguishes between the absence or presence of epenthetic plosives (e.g. [mæn¹f² ən]) and the presence or absence of omissible plosives (e.g. [lʌntʃ]). *EPD*¹⁷, on the other hand, uniformly notates both epenthetic plosives and omissible plosives in the same way (e.g. ['mæn.tʃ ən], [lʌntʃ]).³⁸ The notation in *EPD*¹⁷ can be said to be infelicitous as innocent readers of *EPD*¹⁷, say EFL students, might misunderstand that the case of e.g. [lʌntʃ] also has to do with the epenthetic plosive [t] (instead of the omissible plosive [t]) in the phonetic context of [n – ʃ]. I have in mind, in particular, those EFL students who already know that [ʃ] without [t], i.e. [lʌnʃ], exists alongside [lʌntʃ], which cannot be said of all EFL students.

(33) The notation such as ['mæn.tʃ ən] and [lʌntʃ] in *EPD*¹⁷ can be said to be infelicitous for another reason. The phonetic contexts (including the place of syllable boundary) in which omissible plosives occur happen in some cases to be the same as those in which epenthetic plosives are susceptible of occurring. Witness, for example, *Samson* ['sæmps. ən] as notated in *EPD*¹⁷ where [p] stands for the non-occurrence or occurrence of the epenthetic plosive [p] and *Sampson* ['sæmps. ən] as notated also in *EPD*¹⁷ where [p] stands for the occurrence or non-occurrence of the omissible plosive [p], both in one and the same phonetic context [m – s] with syllable division after [s]. Witness further *mansion* ['mæn.tʃ ən] where [t] stands for the non-occurrence or occurrence of the epenthetic plosive [t] on the one hand and *lunch* [lʌntʃ] where [t] stands for the occurrence or non-occurrence of the omissible plosive [t] on the other, both in one and the same phonetic context [n – ʃ]. Both the occurability or otherwise of epenthetic plosives and the omissibility or otherwise of plosives are indicated by the same type of phonetic symbol (i.e. italicized, normal-sized, non-superscripted) in *EPD*¹⁷.

To be fair to *EPD*¹⁷, I should add that the infelicity I have ascribed above to *EPD*¹⁷ indicating in an identical manner both an epenthetic plosive and an omissible plosive in the same phonetic context does not necessarily apply. For example, *EPD*¹⁷ notates ['rænt.s əm] *ransom/Ransom/Ransome* and [tents] *tense* in which the epenthetic plosive [t] occurs in the context [n – s], while it notates ['rænt.s ən] *Rantzen* and [tents] *tents* in which [t] is neither an epenthetic plosive nor an omissible plosive also in [n – s]. I mention in passing that *LPD*³ notates the last two words differently from *EPD*¹⁷, i.e. ['rænts ən] for *Rantzen* (in which [t] is either absent or present) and [tents] *tents* (in which [t] is either present or absent).

³⁸ Syllable boundary is indicated in *LPD*³ by a space while it is indicated in *EPD*¹⁷ by a low dot. The point where syllable separation is supposed to occur may not be the same in *LPD*³ and *EPD*¹⁷ (after [n¹] in *LPD*³ and between [n] and [tʃ] in *EPD*³). A further example of different places of syllable boundary as shown in the two dictionaries is for the word *emphasis*. *LPD*³ notates ['em¹f ləs ɪs], the syllable division being after [f], while *EPD*¹⁷ notates ['emp.f ə. sɪs], the syllable division being after [p].

(34) I will now to discuss one specific case which I earlier (p. 91) presented as

[streŋ(k)θ] *strength* = [streŋθ] → [streŋkθ]

The word *strength* is pronounced [streŋθ] when no epenthetic plosive is involved. Phonotactic constraints in English prevent the occurrence of [ð] after *any consonants* in word-final position. Thus, the sequence [ŋθ] occurs (as in [streŋθ]), but not *[ŋð]. This means that no distinction between [θ] and [ð] is possible after [ŋ] in word-final position. This distinction is available, however, after a vowel, e.g. in [mauθ] *mouth* vs. [mauð] *mouth* and [ri:θ] *wreath* vs. [ri:ð] *wreathe*. Thus, the opposition between /θ/ and /ð/ operates after a vowel phoneme in word-final position. The occurrence of [θ] and the persistent non-occurrence of [ð], after [ŋ] (all consonants, in fact), lead us to one of two phonological solutions. (i) Is this a case of ‘defective or limited distribution’ of /ð/? If so, we shall understand that /θ/ occurs to the exclusion of /ð/ after a consonant phoneme in word-final position, hence [streŋθ] will correspond phonologically to /s t-d r e ŋ θ/. (ii) Or is this a case of the neutralization of the opposition /θ/ – /ð/? If so, after any consonant phoneme, there will occur the archiphoneme /θ-ð/ definable as “apical fricative” which is associated with this neutralization, and [streŋθ] will correspond phonologically to /s t-d r e ŋ θ-ð/. In my view, the answer is (ii). The phonological contents of /θ/ and of /ð/ are “voiceless apical fricative” and “voiced apical fricative”, respectively. The opposition /θ/ – /ð/ is a type of phonological opposition that I call an ‘exclusive opposition’,³⁹ as the common base of the phonological contents of /θ/ and /ð/, i.e. “apical fricative”, is not shared by any phoneme in English.

A variant pronunciation of the word *strength* also exists, i.e. [streŋkθ], in which the epenthetic plosive [k] occurs in the phonetic context [ŋ – θ]. According to my analysis, [streŋkθ] corresponds phonologically to /s t-d r e ŋ θ-ð/ where [ŋk] is analyzed as a realization of /ŋ/ and [θ] as a realization of /θ-ð/. It will be seen that both [streŋθ] (without the epenthetic plosive [t]) and [streŋkθ] (with it) correspond phonologically to /s t-d r e ŋ θ-ð/.

(35) There is yet another variant pronunciation of *strength*, i.e. [strentθ]. [streŋθ] undergoes the following series of changes. First [ŋ] (dorso-velar articulation) regressively assimilates to [θ] (dental articulation) and changes to [n] (dental articulation). Thus, [streŋθ] > [strenθ], which is phonologically /s t-d r e n θ-ð/. The phonetic context [n – θ] (cf. [strenθ]) produces the occurrence of the epenthetic plosive [t] (i.e. [nθ] > [ntθ]), hence [strenθ] > [strentθ]. The epenthetic plosive [t] in [ntθ] is so analyzed that [nt] as a whole is regarded as a realization of /n/, so that [strentθ] corresponds phonologically to /s t-d r e n θ-ð/ as well. It will be seen that both [strenθ] and [strentθ] correspond to /s t-d r e n θ-ð/.

³⁹ I first proposed the concept and term of ‘exclusive opposition’ in Akamatsu (1988: 58), having been inspired by the term and concept of ‘rapport exclusif’ mentioned for the first time by Martinet (1945: 2.7). See further Akamatsu (1988: 52-63) and Akamatsu (1992: 53-5).

(36) *LPD*³ lists both [streŋ^kθ] (i.e. [streŋθ] > [streŋkθ]) and [stren^hθ] (i.e. [strenθ] > [strentθ]). Wells characterizes [stren^hθ] as ‘BrE non-RP’. Another word that follows the same pattern of pronunciations, in so far as the possibility of the non-occurrence or occurrence of the epenthetic plosive [t] is concerned, is *length*. *LPD*³ indicates [leŋθ], [leŋ^kθ] and [len^hθ] and characterizes [leŋ^hθ] as ‘BrE non-RP’. Phonologically, [leŋθ] and [leŋkθ] correspond to /l e ŋ θ-ð/ while [lentθ] corresponds to /l e n θ-ð/.

*EPD*¹⁷ lists only [streŋkθ] (i.e. [streŋ^kθ] in *LPD*³) for *strength* and [leŋkθ] (i.e. [leŋ^kθ] in *LPD*³) for *length*, but lists neither what it might otherwise indicate as [streŋkθ] nor as [leŋtθ]. This is probably because *EPD*¹⁷ only lists those pronunciations that are not considered ‘BrE non-RP’.

(37) My earlier phonological analysis of epenthetic plosives in pairs of words such as *prince* and *prints* (in (23)) and of *mince* and *mints*, *tense* and *tents*, and *assistance* and *assistants* (in (26)) brings me now to discuss a few more pairs of English words in which, this time, the two words of each pair are distinguished from each other orthographically, phonetically and phonologically. Examples of such pairs of words are *Samson* vs. *Sampson*, *Simson* vs. *Simpson*, and *Thomson* vs. *Thompson*. The above cited anthroponyms share the same characteristic in word formation: (i) each of them consists of two constituents; and (ii) the pronunciation of the first constituent ends with [m] and that of the second begins with [s], resulting in the sequence [ms]. Incidentally, there exists a variant spelling *Sympson* (cf. *Simpson*), but I will stay with *Simpson* in my discussions.

(38) The following are the pronunciations of these pairs of words as recorded in *LPD*³.

Samson ['sæm^ps ən], *Sampson* ['sæmps ən]
Simson ['sɪm^ps ən], *Simpson* ['sɪmp s ən]
Thomson ['tɒm^ps ən], *Thompson* ['tɒmps ən]

We need to look closely at the phonetic notation of the examples cited above.

In *LPD*³, ^p (superscripted, downsized, not italicized) as in ['sæm^ps ən], indicates the non-occurrence or occurrence of the epenthetic plosive [p]. On the other hand, *p* (non-superscripted, full-sized, italicized) as in ['sæmps ən] in *LPD*³ or in ['sæmp.s ən] in *EPD*¹⁷, for *Sampson*, stands for the occurrence or non-occurrence of the omissible plosive [p] and therefore has nothing to do with the epenthetic plosive [p].⁴⁰

⁴⁰ I notice that, in *LPD*³, the schwa is indicated by ə (not superscripted, full-sized, italicized) for *Samson*, *Sampson*, *Thomson* and *Thompson*, while it is indicated by ^ə (superscripted and downsized, not italicized) for *Simson* and *Simpson*. I suspect that this lack of uniformity in the indication of ^ə and ə may simply be attributed to typographical errors and that the schwas in all these instances should be indicated by ə. I leave this point out of account in my discussion here, as it is not directly relevant to the question of the epenthetic plosive [p].

With regard to the occurrence of [s ən] (as indicated in *LPD*³) or [s³n] (*EPD*¹⁷), [n] in [sn] stands, strictly speaking, for [ŋ], i.e. syllabic [n], which is phonologically /ən/.⁴¹ In my discussions that follow about the anthronyms I have cited above, I will therefore understand [s ən] or [s³n], i.e. [sən] ~ [sn], to represent a case of free variation between [sən] and [sn] in *Samson* and *Sampson*, *Simson* and *Simpson*, and *Thomson* and *Thompson*, and both [sən] and [sn] to be phonologically identified as /sən/.

(39) We note that, those names in whose pronunciation the epenthetic plosive [p] may occur do *not* have the letter *p* in the spelling (e.g. *Samson*), while those names in whose pronunciation the ommissible [p] may occur have the letter *p* in the spelling (e.g. *Sampson*).

For *Samson*, [səm^ps ən] in which [p] is an epenthetic plosive corresponds phonologically to /səmsən/ as, according to my phonological analysis, [mp] in [səmpsən] is a realization of /m/. Likewise, for *Simson*, [sɪm^ps³n] phonologically corresponds to /sɪmsən/ and, for *Thomson*, [tɒm^ps ən] phonologically corresponds to /tɒmsən/.

How about my phonological analysis of [səmpsən] and [səmsən] for *Sampson* in which [p] is an ommissible plosive? [səmpsən] is the basic pronunciation and [səmsən] is, as it were, the derived pronunciation, i.e. '[p] → zero'. I phonologically analyze [səmpsən] here as /s ə m-n-ŋ p s ə n/ while [səmsən] is analyzed as /səmsən/.

It will be seen that one and the same phonetic form [səmpsən], for *Samson* on the one hand and for *Sampson* on the other, therefore two homophones, but correspond to two different phonological forms, /səmsən/ *Samson* on the one hand and /s ə m-n-ŋ p s ə n/ *Sampson* on the other. It may be reminded that [p] as an epenthetic plosive is part of [mp] which is part of a realization of the phoneme /m/. On the other hand, [p] as an ommissible plosive is a realization of the phoneme /p/.

(40) I am well aware that *Samson* and *Sampson*, *Simson* and *Simpson*, and *Thomson* and *Thompson*, etc. are examples of a special type in that (i) they form each a pair from the point of view of orthography and (ii) the letter *p* is absent in one (*Samson*, *Simson*, *Thomson*) and is present in the other (*Sampson*, *Simpson*, *Thompson*) of each pair, the factor whereby the words of the pair are orthographically distinguished from each other and (iii) the occurrence of the epenthetic plosive [p] is not linked to the presence of the letter *p* in the spelling (*Samson* [səmsən] → [səmpsən], *Simson* [sɪms³n] → [sɪmps³n], *Thomson* [tɒmsən] → [tɒmpsən]) while the presence of the

⁴¹ With regard to [ŋ], Wells (1982: 55) has the following to say: 'There are compelling reasons for regarding this [i.e. the syllabic] [ŋ] as the realization of underlying /ən/'. He would therefore analyze both [sn] and [sən] phonologically as /sən/, so both [səmsən] and [səmpsən] for *Samson* will phonologically be analyzed as /səmsən/.

letter *p* in the spelling *is* linked to the omissible plosive [p] (*Sampson* ['sæmp̩sən] → ['sæmsən], *Simson* ['sɪmp̩sən] → ['sɪmsən], *Thomson* ['tɒmp̩sən] → ['tɒmsən]).

Native speakers of English in the U.K., a literate society, are aware of the presence of the letter *p* in *Sampson*, *Simpson* and *Thompson*. This is why [p] is deliberately chosen as a realization of /p/. It will be recalled that minimum distinctive units of the second articulation, be they phonemes or archiphonemes, are *chosen* by speakers of any language, and this of course applies to English, too. One of the two variant pronunciations, ['sæmp̩sən] (with the omissible plosive [p]) of *Sampson*, to choose one of the three anthroponyms, corresponds phonologically to /'s æ m-n-ŋ p s ə n/, and its other variant pronunciation ['sæmsən] corresponds phonologically to /'sæmsən/. It is interesting to see that the orthographic distinction between *Samson* and *Sampson*, *Simson* and *Simpson*, *Thomson* and *Thompson*, etc. continues to be alive, sustained and not to be neglected among English-speaking people.

This concludes what I wished to say about my phonological analysis of epenthetic plosives in English.

There are, however, a few more points I wish to add in the following pages about certain aspects of the use of epenthetic plosives and, for that matter, that of omissible plosives as well.

* * *

(41) I conducted a simple check to see if the sustained use of the orthographic distinction between *Samson* and *Sampson*, *Simson* and *Simpson*, *Thomson* and *Thompson*, etc., is maintained irrespective of whether or not the strict phonetic distinction in terms of the non-occurrence or occurrence of the epenthetic plosive [p] in the former of each pair is practised. I deliberately attempted to visit on the internet the website of e.g. *Thompson Holidays* instead of, correctly, *Thomson Holidays* (a British tourism agency), and *Emma Thomson* instead of, correctly, *Emma Thompson* (an English actress). In the first case, I was immediately referred to *Thomson Holidays*, and, in the second case, I was asked 'Did you mean: Emma Thompson?'. I obtained similar results when I checked *Samson* and *Sampson*, *Simson* and *Simpson*, and *Timson* and *Timpson*.

By way of another check, I looked at a fairly recent telephone directory (2009/2010) for the Leeds Area (West Yorkshire, England) where I reside with a view to checking the relative ratios of the entries of telephone subscribers whose surnames are *Samson*, *Sampson*, *Simson*, *Simpson*, *Thomson* and *Thompson*. The results were as follows: 33 entries of *Sampson* vs. 2 entries of *Samson* (i.e. 94% vs. 6%); 303 entries for *Simpson* vs. 1 entry for *Simson* (99% vs. 1%); 574 entries for *Thompson*⁴² vs. 52 *Thomson* (92% vs. 8%). These percentages are obviously somewhat approximate.

⁴² Including two entries for *Thompson-Meeks* and *Thompson-Royds*. There was 1 entry of *Tompson*, which was also included in the counting.

Which of the spellings, i.e. *Sampson* or *Samson*, *Simson* or *Simpson*, and *Thomson* or *Thompson*, are more common may not be devoid of interest. What I find interesting is the definitely more frequent occurrences of *Sampson*, *Simpson* and *Thompson*. The relative ratios shown above appear to show that the pronunciations with [p] are probably commoner in these names, regardless of whether this is [p] which is a reflection of the orthographic *p* or an epenthetic consonant [p] which is not motivated by the orthographic *p*. Such relative ratios probably vary depending on different parts of the U.K. and need to be further investigated, but they appear to indicate the general trend.

My reference above to the orthographic distinction between *Samson* and *Sampson*, *Simson* and *Simpson*, and *Thomson* and *Thompson*, is not of altogether trivial importance in connection with the question of epenthetic plosives, or that of omissible plosives. We read the following words.⁴³

[...] e.g. *Samson* /sæmsən/ > /sæmpsən/ ... such variation being reflected in the spellings of proper names such *Sam(p)son* and *Sim(p)son*.

Note that the angle '>' in the above cited passage means the same as '→' so that *Samson* /sæmsən/ > /sæmpsən/ signifies the non-occurrence or occurrence of the epenthetic plosive [p], i.e. 'zero → [p]', while *Sam(p)son* and *Sim(p)son* refer to the omissible plosive [p], i.e. '[p] → zero'.

(42) Under the heading 'Optional sounds' (*LPD*³: 567), Wells cites *fence* [fen^ts] and *lunch* [lʌntʃ] among other example words. According to Wells (*op. cit.*, *loc. cit.*), foreign learners of English are recommended to ignore the insertion of the epenthetic plosive [t] in *fence* [fen^ts], though it may sometimes be inserted by native speakers of English. In other words, his recommendation to foreign learners is to ignore the intervention of epenthetic plosives in general. As applied to e.g. *Samson* [sæmpsən], he would therefore recommend to foreign learners of English to ignore [p] and to pronounce [sæmsən] rather than [sæmpsən]. His recommendation is easy for foreign learners to remember and put into practice as it is in keeping with the spelling of *Samson* (without the letter *p*). On the other hand, also according to Wells (*op. cit.*, *loc. cit.*), foreign learners are recommended not to elide [t] in *lunch* [lʌntʃ], though it is sometimes elided by native speakers of English. As applied to e.g. *Sampson*, Wells's recommendation is to retain the omissible [p] and pronounce [sæmpsən]. This recommendation, too, is easy for foreign learners to remember and put into practice, as it is again in keeping with the spelling of *Sampson* (with the letter *p*).

In summary, it appears that Wells's general recommendation to EFL students/foreigners is to ignore epenthetic plosives and retain omissible plosives.

⁴³ Gimson(1989⁴: 188). These words are then repeated in Gimson (1994⁵: 170) with no change in tenor, though '→' replaces '>', and /sæmsən/ and /sæmpsən/ are replaced by /sæmsən/ and /sæmpsən/ with the addition of ' '. This is then repeated in Gimson (2001⁶: 187) and Gimson (2008⁷: 199).

(43) How widespread is the intervention of epenthetic plosives in the phonetic contexts generically identifiable as ‘nasal consonant – fricative consonant’ in English? Can one discern any general tendency in English (I am largely concerned in this paper with British English) regarding the frequency in the use or non-use of epenthetic plosives?

It seems difficult to know with any measure of certainty the non-occurrence or occurrence of epenthetic plosives in British English in terms of their relative percentages. Among a total of 93 words Wells investigated on various points of pronunciation such as vowels, consonants and place of accent in his 1998 pronunciation preference poll, there were five words, viz. *chance*, *false*,⁴⁴ *financial*, *finance* and *princess*, which are susceptible to the non-use or use of the epenthetic plosive [t]. In the questionnaire sent to prospective respondents, Wells helpfully indicated these five words respelled and accompanied by verbal descriptions, so that, for instance, for the word *chance*, he indicated as follows:

/-ns/, CHA(H)NSS, ends in an *n*-sound followed by an *s*-sound
/-nts/, CHA(H)NSTS, has a *t*-sound between the *n*-sound and the *s*-sound

Of these five words, *chance* is the only word for which the relative percentages for the non-use and use of the epenthetic plosive [t] are recorded in *LPD*³ in the entry for this word.⁴⁵

(44) We have seen further above (in (24)) that, among RP speakers, the use of [nts] is very frequent for words whose alternative pronunciation is [ns], hence homophony for *mince* – *mints*, *tense* – *tents*, etc. This means that the intervention of the epenthetic plosive [t] is widespread among RP speakers. Note in this connection, however, that for the word *chance*, *LPD*³ (136) shows that 83% of the British respondents (not restricted to RP speakers) in Wells’s pronunciation preference poll conducted in 1998 pronounced [ns], and 17% pronounced [nts] which was increasingly favoured among the young.

⁴⁴ The word *false* appears to be relevant to the non-use or use of the epenthetic plosive [t] (cf. [ls] and [lts]), though the relevant phonetic context here is not ‘nasal consonant – fricative consonant’. The phonetic context ‘lateral consonant – fricative consonant’ nevertheless remains to be of interest when we study the question of epenthetic plosives in English in general.

⁴⁵ The reason why the relative percentages for the non-use or use of the epenthetic plosive [t] for the remaining four words is not recorded in *LPD*³ may well be that the respondents failed, either entirely or in part, to act on Wells’s request to report on the question of the epenthetic plosive, even though he had clearly formulated his instruction in the questionnaire. In a way it is comprehensible that persons who had not had considerable phonetic training already, both in theory and (in particular, in the present case) practical work – many of the respondents may have been in this category – would have found it difficult to bring to consciousness the non-occurrence or occurrence of epenthetic plosives and to be ready to report to Wells with sufficient conviction. After all, epenthetic plosives are transitional sounds, of which people may not be clearly aware as to whether they occur or not. I suppose that Wells did not as a consequence obtain a reasonably sufficient number of responses from the respondents and he may have judged that the result did not warrant its publication in *LPD*³.

(45) For the word *strength*⁴⁶ *LPD*³ indicates the relative percentages of 81% for the use of epenthetic plosives (i.e. [k] in [streŋkθ] and [t] in [strenθ])⁴⁷ and 19% for the non-use of epenthetic plosives⁴⁸ in *American English*.⁴⁹ Wells does not give the breakdown percentages for the use of the epenthetic plosive [k] and for that of the epenthetic plosive [t]. When we compare these relative percentages obtained for *strength* for *American English* (i.e. 81% for the use of the epenthetic plosives [k] and [t] combined, and 19% for the non-use of either epenthetic plosive) with the relative percentages of 17% for the use of the epenthetic plosive [t] (cf. [nts]) and 83% for the non-use of it (cf. [ns]) for *chance* in *British English*, we are struck by an inverse relationship between these two sets of percentages. Of course these two sets of percentages obtained for just one word *chance* in *British English* and just one word *strength* in *American English* cannot permit us to see any general tendency. Further data involving more words with or without epenthetic plosives are necessary for us to be able to make any reasonably valid statement.

(46) With regard to the word *length*, Wells's 1998 pronunciation preference poll shows (as reported in *LPD*³: 459), this time in *British English*, that 48% of the respondents pronounced [leŋθ], 36% pronounced [leŋkθ], and 16% pronounced either [lenθ] or [lentθ]. Wells does not give the breakdown percentages for [lenθ] and [lentθ], so we do not know what the percentage of those who pronounced [nθ] is and what the percentage of those who pronounced [ntθ] is. Be that it may be, we can surmise that the percentages for [ŋθ] and [nθ] combined (i.e. pronounced with no epenthetic plosive) on the one hand and those who pronounced [ŋkθ] and [ntθ] (with the epenthetic plosive [k] and [t]) combined on the other are approximately 50-50.

(47) The various phonetic contexts I have considered as being germane to the non-occurrence or occurrence of epenthetic plosives are, as I have said on a few occasions, those specifiable as 'nasal consonant – fricative consonant'.

There are a few other phonetic contexts in which epenthetic plosives may occur and also in which omissible plosives may occur. These phonetic contexts are specifiable as 'nasal consonant – plosive consonant'. This type of phonetic context

⁴⁶ The word *strength* was not included in Wells's 1998 pronunciation preference poll.

⁴⁷ Wells himself does not specify what epenthetic plosives occur in these cases. He only says 'with plosive before θ'. I am vicariously specifying these two epenthetic plosives, [k] and [t], both of which duly occur before [θ].

⁴⁸ The percentage figure, 19%, is presumably for [streŋθ] and [strenθ] combined, though Wells does not spell this out.

⁴⁹ The two percentages for the word *strength* in *American English* were allegedly obtained by Yuko Shitara. Wells writes as follows in 'LDP pronunciation preference poll 1998', which can be consulted on his homepage on the internet:

As reported in the 1995 Stockholm ICPhS proceedings (3: 696), my student Yuko Shitara has carried out a similar survey of American preferences. I hope to include her results and my 1998 results in a future revised edition of *LPD* [i.e. *LPD*³].

I have looked at Shitara's questionnaire but, strangely, Shitara did not appear to include, in the questionnaire for her survey, either the word *strength* or any other words.

differs from the various phonetic contexts I have discussed up to now in that the second of the two types of consonant is ‘plosive consonant’ and not ‘fricative consonant’.

The phonetic context ‘nasal consonant – plosive consonant’ is, more specifically, ‘labial nasal consonant – apical or dorsal plosive consonant’.⁵⁰

(48) For the phonetic context [m – k], *LPD*³ enters *Tomkins* [ˈtɒm^p kɪnz] (i.e. [ˈtɒm kɪnz] → [ˈtɒmp kɪnz]) in which [p] is an epenthetic plosive and *Tompkin/kins* [ˈtɒmp | kɪn/kɪnz] (i.e. [ˈtɒmp | kɪn/kɪnz] → [ˈtɒm | kɪn/kɪnz]) in which [p] is an omissible plosive. The corresponding phonetic notations of these example words in *EPD*¹⁷ are as follows: *Tomkins* [ˈtɒmp.kɪnz], *Tompkins* [ˈtɒmp.kɪnz].

(49) For the phonetic context [m – t], *LPD*³ also enters *Hampton* [ˈhæmp tən] (i.e. [ˈhæmp tən] → [ˈhæmtən]), *umpteen* [ˌʌmp ˈti:n] (i.e. [ˌʌmp ˈti:n] → [ˌʌm ˈti:n]), etc. in which cases [p] is an omissible plosive, and *dreamt* [drem^pt] (i.e. [dremt] → [drempt]) and *Sumter* [ˈsʌm^pt ə] (i.e. [ˈsʌmt ə] → [ˈsʌmpt ə], etc. in which [p] is an epenthetic plosive. But not *Semtex* [ˈsem teks] (there does not occur [ˈsem^pteks], though the epenthetic plosive [p] might be thought to occur). The corresponding phonetic notations of these example words in *EPD*¹⁷ are as follows: *Hampton* [ˈhæmp.tən], *umpteen* [ʌmpˈti:n],⁵¹ *sumter* / *Sumter* [ˈsʌmp.tə], *Semtex*⁵² [ˈsem.teks].

(50) Here are the results of my phonological analyses of the examples adduced above in (48) and (49).

Tomkins: both [ˈtɒm kɪnz] and [ˈtɒmp kɪnz] (with the epenthetic plosive [p]) correspond to /ˈtɒmkɪnz/.

Tompkin/kins: [ˈtɒmp | kɪn/kɪnz] (with the omissible [p]) corresponds to /t ɒ m-n-ŋ p k-g ɪ n / k-g ɪ n z/ and [ˈtɒm | kɪn/kɪnz] corresponds to /ˈtɒmkɪn/kɪnz/.

Sumter: both [ˈsʌmt ə] and [ˈsʌmpt ə] (with the epenthetic plosive [p]) correspond to /ˈsʌmtə/.

dreamt: both [dremt] and [drempt] (with the epenthetic plosive [p]) correspond to /dremt/.

Tompkins: [ˈtɒmp kɪnz] (with the omissible plosive [p]) corresponds to /t ɒ m-n-ŋ p k-g ɪ n z/ and [ˈtɒm kɪnz] corresponds to /ˈtɒmkɪnz/.

⁵⁰ My specifying ‘labial’ in ‘labial nasal consonant’ and ‘apical’ and ‘dorsal’ in ‘apical or dorsal plosive consonant’ is necessary since ‘apical nasal consonant’ (i.e. [t]), ‘dorsal nasal consonant’ (i.e. [ŋ]), and ‘labial plosive consonant’ (i.e. [p]) are not involved.

⁵¹ The indication of syllable division, for which *EPD*¹⁷ normally uses a low dot, which should be placed after *p*, is missing in this particular phonetic notation. This appears to be a typographical error. Incidentally, as can be seen, we again notice that syllable division is shown at different places in *LPD*³ and *EPD*¹⁷.

⁵² Genericized trademark *Semtex*, which was formed by combining the Czech name *Semtín* (a suburb of Pardubice where the manufacturer is located) with *explosive*.

Hampton: [ˈhæmp tən] (with the omissible plosive [p]) corresponds to /h æ m-n-ŋ p t-d n/ and [ˈhæm tən] corresponds to /hæmtən/.

umpteen: [ˌʌmp ˈti:n] (with the omissible plosive [p]) corresponds to /,ʌ m-n-ŋ p ˈt-d i n/ and [ˌʌm ˈti:n] corresponds to /,ʌmˈti:n/.

N.B. In the phonological notations for *Tompkin/kins* and *Tompkins* above, /k-g/ is an archiphoneme definable as “dorsal non-nasal” associated with the neutralization of the oppositum /k/ – /g/. /k/ is definable as “voiceless dorsal non-nasal” and /g/ “voiced dorsal non-nasal”.

(51) No epenthetic plosive [p] occurs in the phonetic context [m – k] in a *compound* whose first constituent ends with [m] and second constituent begins with [k], as in *homecoming* [ˈhəʊm ,kʌmɪŋ].

Likewise, the epenthetic plosive [p] does not occur in the phonetic context [m – t], either, in a *compound* whose first constituent ends in [m] and the second begins with [t], as in *hometown*. [ˌhəʊm ˈtaʊn].

The reason why epenthetic plosives do not occur in compounds like these is the same as the reason why epenthetic plosive [t] does not occur in [n – ʃ] and [n – s] in connection with compounds, as explained in (30) and (31).

(52) The phonetic contexts [n – k] and [n – p] do not appear to produce either an epenthetic plosive [t] or an omissible plosive [t]. What happens is that [nk] and [np] easily transform into [ŋk] and [mp] ([n] turning into [ŋ] and [m] through regressive assimilation to [k] and to [p], respectively) without producing an epenthetic plosive. This is because [ŋ] and [k], and [m] and [p], are homorganic, so that the velic closure for [ŋk] and the bilabial closure for [mp] are sustained, leaving no room for the formation of any epenthetic plosives between [ŋ] and [k] or [m] and [p].

(53) Up till now I have dealt with the intervention of epenthetic plosives in various phonetic contexts specifiable as ‘nasal consonant – fricative consonant’ and ‘nasal consonant – plosive consonant’. In other words, one of the types of consonants involved in the relevant phonetic contexts is ‘nasal consonant’ (the first of the two consonants in all the relevant phonetic contexts). Most descriptions available in English phonetics literature are those of epenthetic plosives and omissible plosives that occur in any of the types of phonetic contexts we have dealt with up to now.

(54) It is now time to consider the non-occurrence or occurrence of an epenthetic plosive in a certain phonetic context that differs from the above-mentioned ones. I have in mind the phonetic context ‘lateral consonant – fricative consonant’. In this phonetic context, neither of the types of the consonant is ‘nasal consonant’, though ‘fricative consonant’ is involved as in a number of phonetic contexts specifiable as ‘nasal consonant – fricative consonant’ we have seen earlier.

It is likely that the generic phonetic context ‘lateral consonant – fricative consonant’ is a highly restricted one in that only [s] can be the fricative consonant, and an

epenthetic plosive if it occurs in this phonetic context, can only be [t], which is homorganic with [l], i.e. apico-alveolar.

It appears that the intervention of epenthetic plosives in the context ‘lateral consonant – fricative consonant’ is much less common than in the context ‘nasal consonant – fricative consonant’. In my view, there is an articulatory reason for this. In the case of ‘nasal consonant – fricative consonant’, the soft palate is in a lowered position for the articulation of the nasal consonant, but the velic closure must then be made for the articulation of the fricative consonant that follows the nasal consonant. This articulatory change takes time to be completed, allowing time enough for a transitional plosive to occur. On the other hand, in the case of ‘lateral consonant – fricative consonant’, the velic closure necessary for both the lateral consonant and the fricative consonant is maintained throughout, so that the transition from the lateral consonant to the fricative consonant is smooth and quick and a transitional plosive need not occur, unless the speaker sustains for some reason or other the apico-alveolar contact somewhat longer than usual while articulating the lateral consonant.

(55) While referring to the phonetic context ‘lateral consonant – fricative consonant’ in (54), I said that, in this phonetic context, the fricative consonant can only be [s] and the epenthetic plosive that may occur is only [t]. In other words, we can only have [ls] → [lts].

Wells envisaged the occurrence of the epenthetic plosive [t] in the word *false* in the questionnaire prepared for his 1998 pronunciation preference poll submitted to prospective respondents. Curiously, he does not indicate in *LPD*³ either the occurrence of the epenthetic plosive [t] (i.e. [ls] → [lts]) for the entry *false* or the percentages of those respondents who may have answered that they pronounced [ls] and those who may have answered that they pronounced [lts]. It is possible that Wells did not obtain a sufficiently large number of responses to warrant the publication of the percentages in *LPD*³. Alternatively it is perhaps possible that he came to the conclusion that the non-occurrence or occurrence of the epenthetic plosive [t] in the phonetic context [l – s] can be safely disregarded.

All the same, the very fact that Wells included a question concerning the potential absence or presence of the epenthetic plosive [t] in the word *false* in his 1998 pronunciation preference poll suggests that this epenthetic plosive does occur in English.

(56) If we are to look in *LPD*³ for words pronounced with [ls]⁵³ like *false* and orthographically ending in *lse*,⁵⁴ we also find *valse*, *else*, *grilse*, *dulse*, *pulse* and oth-

⁵³ English words orthographically ending with *ls* (e.g. *annals*, *morals*, *victuals*) do not come into the picture here, as they are all pronounced [lz], not [ls].

⁵⁴ So far as I know, this is the spelling that corresponds to [ls] (or [lts] if the epenthetic [t] intervenes). English words ending with *lce* or *lsse* do not appear to exist. If they do, *lce* or *lsse* too would correspond to [ls] (or [lts] if the epenthetic [t] intervenes).

ers, but with no indication of the epenthetic plosive [t]. We also find in *LPD*³ *waltz*,⁵⁵ though spelled with *ltz* and having two variant pronunciations, i.e. [ls] and [lts].⁵⁶ It is interesting to observe in passing that the occurrence of the epenthetic plosive [t] is frequent in German in words whose pronunciation ends with [ls]. To cite just one example, the word *als* is almost regularly pronounced [alts] though, in some German dialects, the penultimate consonant ([l] in the case of *als*) may be elided and consequently there is no question of an epenthetic plosive [t] intervening.

(57) How widespread is the occurrence of the epenthetic plosive of [t] in the phonetic context [l – s]? No statistical data are available to me.

We read the following lines:⁵⁷

... in RP following /l/ ... *else* and *melts* have distinct final clusters [i.e. [ls] for *else* and [lts] for *melts*].

This is not surprising as [t] in [lts] is the [t] in *melt* which is retained in *melts*. This [t] has nothing to do with the epenthetic plosive [t] even though [t] occurs between [l] and [s]. We have seen, however, that no epenthetic plosive [t] occurs in [l – s] as in *else*, *valse*, *grilse*, etc.

(58) How do we phonologically analyze the epenthetic plosive [t] as in [lts] (cf. [fɔ:/ɒlts] *false*)? Let's see first what happens phonetically for the epenthetic plosive [t] to intervene. While [l] is being articulated, the articulatory gesture necessary for [s] which follows [l] affects the terminal phase of the articulation of [l], if the passage to [s] occurs 'prematurely' or the articulation of [l] is sustained longer than usual. The terminal phase of the articulation of [l] undergoes changes in that it is devoiced (thus [l̥]) in regressive assimilation to [s] which is inherently voiceless and the space left on one or both sides of the tongue necessary for both [l] and [l̥] is reduced to nil (as the rim of the tongue is raised to form a firm contact all along against the upper alveolar ridge except at the upper front alveolar ridge), as the articulation of [s] requires that there should be a lateral occlusion. The contact between the apex of the tongue and the upper front alveolar ridge necessary for the articulation of [l] remains sustained when the articulatory gesture necessary for [s] begins to affect the terminal phase of [l]. Hence [l̥] is produced. The upshot of all this is that [l̥] (devoiced lateral

⁵⁵ For *waltz*, pronouncing dictionaries for British English indicate [ls] as the primary variant and [lts] as the secondary variant. *EPD*¹ gives only [ls], but in *EPD*² onward, *EPD* regularly gives [lts] as well. This may well imply the intervention of the epenthetic plosive [t]. I say 'may' as it is also conceivable that [t] in [lts] for *waltz* is not the epenthetic plosive [t] since the word *waltz* in English is a back formation from *Waltzer* (G.) and consequently [ts] in the English pronunciation derives from [ts] that corresponds to *tz* in the German source word *Waltzer*.

⁵⁶ Wells does give in *LPD*³ in the entry for *false* the result of his 1998 pronunciation preference poll in British English for this word but only in connection with the vowel ([ɔ:] or [ɒ]) and not in connection with the question of [ls] or [lts].

⁵⁷ Gimson (2008⁷: 252).

consonant) changes to [t] (voiceless and apical with a lateral occlusion), i.e. [l̥] > [t].⁵⁸

The epenthetic plosive [t] ([l̥] > [t]), as in [lts] ([l̥s] > [lts]), has the following main phonetic properties, viz. voicelessness, non-nasality, apicality and non-laterality. The voicelessness is due to regressive assimilation to [s] that follows [l]. Non-nasality is imposed as both [l] and [s] are non-nasal. Apicality is the result of [t] being homorganic with [l]. Non-laterality is imposed by [s] (which is of non-lateral articulation) which follows [l]. Of these phonetic properties of [t], voicelessness and non-nasality are phonologically irrelevant as they are automatically determined by the phonetic context in which the epenthetic plosive [t] occurs and consequently not chosen by the speaker. As already said above, non-laterality is imposed by [s] (which is of non-lateral articulation) which follows. Laterality and apicality go hand in hand for [l] in English in the sense that [l] (apical and lateral) is the only type of lateral consonant in this language, unlike in some other languages which have, for example, [l] (apical lateral) and [ʎ] (palatal lateral) in e.g. Spanish. In English, what is apical is not necessarily lateral (witness [t], [d], [n], [θ] and [ð]) but what is lateral is necessarily apical. This is why laterality alone is phonologically relevant, hence the relevant feature “lateral”, not “apical”, to characterize the phoneme /l/ in English. Therefore [lt] ([l̥] > [lt]) in [lts] is phonologically analyzed as a realization of /l/. The epenthetic plosive [t] is therefore part of a realization [lt] of /l/.

The epenthetic plosive [t] in [lts] should of course not be confused with [t] in [lts] in the pronunciation of the word *faults*, though both [t] in [fɔː/vɒlts] *faults* and [t] (the epenthetic plosive [t]) in [fɔː/vɒlts] *false* occur in the same phonetic context [l –s]. Phonologically, [fɔː/vɒlts] *faults* corresponds to /f ɔ/a l t s-z/ (so that [t] is a realization of /t/) while [fɔː/vɒlts] *false* corresponds to /fɔ/vɒls/ (so that [t] is part of a realization of /l/).

* * *

This concludes my description of and discussions about various aspects of epenthetic plosives in English, from both phonetic and phonological points of view. I took the liberty of presenting here and there certain amounts of phonetic descriptions of English epenthetic plosives that are already well known among researchers, but this is mainly because I saw in them a number of points which need to be addressed and discussed. It bears repeating that the phonological point of view from which phono-

⁵⁸ It is important to be aware that, for the articulation of [t], in addition to the closure between the apex of the tongue and the upper front alveolar ridge, *the sides of the tongue are raised to form a closure with the alveolar ridge*. I call this closure ‘lateral occlusion’. See Figs. 64 and 65 (in §517) in Jones (1964⁹: 143) which show a palatogram for [t] in the pronunciation of the word *two* and that for [t] in the pronunciation of the word *tea*. On the same point for the articulation of [s], see Fig. 97 (in §711) in Jones (1964⁹: 186) which shows the palatogram for [s] in English pronunciation. The lateral occlusion necessary for the formation of all the consonants except lateral consonants is neither necessarily nor frequently mentioned in books on phonetics.

logical analyses of epenthetic plosives in English have been conducted in the present paper is that associated with functional phonology practised in what I personally call the ‘Functionalist School’ led by André Martinet. I am aware that at least parts of my phonological analyses of epenthetic plosives in English presented in this paper may well raise the eyebrows of more than a few readers who may not pursue functional phonology. Be that as it may, I should be satisfied if such readers have had a chance of encountering what they perceive as a (to them) novel but interesting exercise in phonological analysis.

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