

## **Syllabic Consonants in English: phonetic and phonological aspects\***

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ABSTRACT: This paper consists of two parts. In Part I, I begin with a systematic presentation of the occurrence of the five well-known syllabic consonants in English, viz. [m], [n], [l], [ŋ] and [r], with regard to the various phonetic contexts in which they occur. I discuss what I call 'co-variation' that syllabic consonants enter into with alternative phonetic forms. I dwell on the question of [r] as this involves a number of specific points worth discussing. Finally, I take a brief look at more syllabic consonants such as [ʒ], [ʃ], [ʒ], [b] and [k] which occur only sporadically. In Part II, I first make an attempt to see if the commutation test can resolve the question of determining the phonological status of the syllabic consonants, but with a negative conclusion. Putative minimal pairs like *coddling* (< *coddle* + *ing*) and *codling* (< *cod* + *ling*) are dismissed on the grounds that the commutative items should not contain 'virtual pause' within them. If this precaution is ignored, one would end up establishing dubious phonemes (e.g. \*/l/) in the English consonant system, which no researchers would endorse. The phenomenon of syllabic consonants is not a paradigmatic matter. It is a syntagmatic matter. A survey is conducted on how some past and present researchers have phonologically interpreted the status of each syllabic consonant in English. There is common agreement that a syllabic consonant is phonologically interpreted as 'schwa + non-syllabic consonant'. The phonetic fusion of these two phonetic entities is achieved with the vocalicity (= syllabicity) of the schwa acting on the non-syllabic consonant. I then offer my own phonological interpretation of the nasal syllabic consonants [ŋ], [m] and [ŋ] which differs in some respects from the traditional interpretation in that homorganicity between the syllabic nasal consonants and certain consonants that precede them bears upon the phonological status of these nasal syllabic consonants. This is because there is involved the neutralization of the opposition between /n/, /m/ and /ŋ/. Finally, the question of how to indicate the syllabic consonants in phonological notations is considered.

KEYWORDS: syllabic consonant, non-syllabic consonant, simplex, complex, homorganicity, co-variation, phonetic symbols ‘ə’ and ‘ɔ’ in *LPD*, syncope, compression, fusion, commutation test, commutative item, minimal pair, potential pause, vocality (= syllabicity), neutralization, archiphoneme, ‘/ə/ + ‘sonant’, ‘/ə/ + ‘non-syllabic consonant’.

RÉSUMÉ: Cet article comporte deux parties. Dans la Partie I, je commence avec une présentation systématique des cinq consonnes syllabiques en anglais qui sont bien connues, c-à-d. [m̩], [n̩], [ŋ̩], [ɹ̩] et [ɻ̩], dans les divers contextes phonétiques où elles apparaissent. Je discute ce que j’appelle la ‘co-variation’ que contractent les consonnes syllabiques avec les formes phonétiques alternatives. Je me penche longuement sur la question de [ɹ̩] qui soulève bon nombre de points qui valent d’être discutés. Enfin je considère brièvement d’autres consonnes syllabiques comme [ʃ̩], [f̩], [ʒ̩], [b̩] et [k̩] qui ne se produisent que sporadiquement. Dans la Partie II, j’essaie d’abord de voir si l’épreuve de commutation peut résoudre la question de déterminer le statut phonologique des consonnes syllabiques, mais j’arrive à une conclusion négative. Les paires minimales putatives comme *coddling* (*coddle* + *ing*) et *codling* (< *cod* + *ling*) sont rejetées pour la raison que des items commutatifs ne doivent contenir aucune pause virtuelle. Si l’on ignore cette précaution, on finirait par établir des phonèmes douteux (par ex. \*/l/) qu’aucuns chercheurs n’admettraient. Les consonnes syllabiques ne sont pas d’ordre paradigmatique. Elles sont d’ordre syntagmatique. Je passe en revue les interprétations phonologiques du statut de chaque consonne syllabique en anglais qu’offrent quelques chercheurs passés et présents. Les chercheurs tombent d’accord pour interpréter une consonne syllabique comme ‘schwa + consonne syllabique’. La fusion phonétique de ces deux éléments se produit lorsque la vocalité (= syllabité) du schwa agit sur la consonne non-syllabique. J’offre ma propre interprétation phonologique des consonnes nasales syllabiques [m̩], [n̩] et [ŋ̩], une interprétation qui est, à quelques égards, différente de celles traditionnelles en ce que l’homorganicité qui existe entre les consonnes nasales syllabiques et certaines consonnes qui les précèdent ont une conséquence sur l’interprétation phonologique de ces consonnes nasales syllabiques. Ceci résulte du fait de la neutralisation de l’opposition entre /n/, /m/ et /ŋ/. Pour finir je considère la question de savoir comment on pourrait indiquer les consonnes syllabiques dans les notations phonologiques.

MOTS CLÉS: consonne syllabique, consonne non-syllabique, simplexe, complexe, homorganicité, co-variation, symboles phonétiques ‘ə’ et ‘ɔ’ dans *LPD*, syncope, compression, fusion, épreuve de commutation, item commutatif, paire minimale, pause virtuelle, vocalité (= syllabité), neutralization, archiphonème, ‘/ə/ + ‘sonante’, ‘/ə/ + ‘consonne non-syllabique’.

## INTRODUCTORY REMARKS

One of the well-known studies of syllabic and non-syllabic consonants in English is Jones (1956b/1959). A reference to this study is found in e.g. Jones (§215 in 1956<sup>8</sup> and 1964<sup>9</sup>) and Jones (1956c: §422) and also in papers written on the subject of syllabic consonants of English by a number of other scholars such as Toft (2002: 143) and Álvarez González (1981: 47).

Collins and Mees (1999: 399) write as follows in connection with Jones (1956b/1959).

It is a competent, if unexciting, treatment of English syllabic consonants, notable mainly for a large collection of examples, which are, as always with Jones, accurately observed.

Jones (1956b/1959) indeed offers a wealth of examples of the occurrence (in Jones's own pronunciation) of syllabic consonants, notably [l̩] and [ŋ̩].

In this paper I intend to study the syllabic consonants occurring in English in both their phonetic and phonological aspects. I will be concerned with not only [l̩] and [ŋ̩] on which Jones (1956b/1959) concentrates for good reason, but also with some other syllabic consonants such as [m̩], [ŋ̩] and [ɹ̩]. All these are consonants that can be characterized as 'sonorants'. I will further deal with some other syllabic consonants which can be characterized as 'obstruents' such as [ʒ̩], [ʃ̩], [k̩], [p̩], [b̩], etc. I will study all these various syllabic consonants mainly in simplex words (e.g. *camera*) if not to the exclusion of complex words (e.g. *bottleneck*, *hustling*) which are compounds and derivatives. I will therefore explore the subject by going beyond what Jones (1956b/1959) concentrates on.

In Part I (151-91), I will deal with the phonetic aspects of the syllabic consonants, i.e. some generalities about the occurrence of the syllabic consonants and, then, discuss a few specific points that interest me with regard to certain of the syllabic consonants.

In Part II (191-219), I will turn to the phonological aspects of the syllabic consonants, notably with respect of their phonological status, as proposed by different researchers. I will end with the question of how the syllabic consonants might be shown in phonological notations.

## **PART I: PHONETIC ASPECTS OF THE SYLLABIC CONSONANTS**

### **Non-syllabic consonants and syllabic consonants**

One of the properties of consonant sounds is said to be that some are always non-syllabic, while others may be syllabic as well as non-syllabic depending on the phonetic contexts in which they occur.

For example, [b] in English *is said to be* always non-syllabic, in whatever phonetic contexts it may occur, as in *bee*, *hub* and *about*. My phrase 'is said to be' here implies the potential occurrence of the syllabic [b̩] in some cases (see p. 190). Another consonant [l], for example, is non-syllabic, [l], in e.g. *lit*, *melt*, *sallow* and *tell*, but is syllabic, [l̩], in e.g. *settle*, *fiddle*, *heckle* and *tingle*. The diacritic '̩' is customarily used in phonetic notation to signify syllabicity.

[l] is not the only consonant to occur either non-syllabic or syllabic in different phonetic contexts in English. The nasal consonants, i.e. [n] (apico-alveolar), [m] (bilabial), [ŋ] (dorso-velar), and [r] (alveolar non-lateral frictionless continuant), also occur either non-syllabic or syllabic, i.e. [n] or [n̩], [m] or [m̩], [ŋ] or [ŋ̩], [r] or [r̩], respectively. [l], [l̩], [m̩], [ŋ̩], [r̩] are the five syllabic consonants in English that are regularly mentioned by phoneticians.

### The terms ‘simplex’ and ‘complex’

To begin with, however, I need to explain two mutually associated technical terms I employ here and there in what follows in terms of which I state where the syllabic consonants may be said to occur in so-called ‘words’. The two technical terms are ‘simplex’ and ‘complex’.

By the term ‘simplex’ (short for ‘simplex word’) is meant a simple word (e.g. *black*) which by definition has no affix(es) and is therefore not either a compound or a derivative. ‘Simplex’ is opposed to the counterpart notion and term ‘complex’ (short for ‘complex word’) which is either a compound (e.g. *blackboard* < *black* + *board*) or a derivative (e.g. *blackier* < *black* + *-er*).

My personal preference is to employ the term ‘simplex’ (or, alternatively, ‘simple word’) rather than the term ‘word’ which is popularly used but which lacks a strict definition. The set of three related expressions I might wish to use within the confines of this paper that derive from the term ‘simplex’ should be ‘simplex-initial position’, ‘simplex-medial position’ and ‘simplex-final position’. However, I will instead use the set of three related expressions ‘word-initial position’, ‘word-final position’ and ‘word-medial position’ in this paper, which will certainly be immediately clearer to all readers. I need to emphasize straightaway that, in this latter set of three expressions, *the term ‘word’ is always strictly to be taken in the sense of ‘simplex’, not ‘complex’*. Hence, ‘word-initial position’ (= ‘simplex-initial position’), ‘word-medial position’ (= ‘simplex-medial position’) and ‘word-final position’ (= ‘simplex-final position’).

### Where do the syllabic consonants of English occur?

We will first see where [l], [n̩], [m̩], [ŋ̩] and [r̩] occur. We will look at them one by one.

#### [l]

(i) [l] occurs in word-final position, in examples like the following.

[ˈbɒtl̩] *bottle*, [ˈsʌpl̩] *supple*, [ˈmʌfl̩] *muffle*, [ˈrɪdl̩] *riddle*, [ˈtʃænl̩] *channel*, [ˈkʌpl̩] *couple*, [ˈrebl̩] *rebel*, [ˈhʌsl̩] *hustle*, [ˈbʊʃl̩] *bushel*, [ˈʃʌvl̩] *shovel*.

That the consonant before [ɹ] is in principle preceded by an accented vowel/accented syllable is necessary to all syllabic consonants in English. In addition, the condition ‘preceded by a consonant’ is relevant as, when preceded by a vowel, [ɹ] does not occur (cf. [ˈmetəl] *metal* when not pronounced [ˈmetɹ]). This condition also applies to the occurrences of all syllabic consonants in English.<sup>1</sup>

(ii) In word-medial position, [ɹ] occurs preceded by a consonant which is in turn always preceded by an accented vowel, in examples like the following.

[ˈɪtɹɪ] *Italy*, [ˈkætɹɒɡ] *catalogue*, [ˈmædɹɪn] *Madeline*, [ˈkenɹɪ] *Kennelly*.

Among the examples cited above, *catalogue* is considered as a simplex since the etymology of this word is undoubtedly opaque to average speakers of English (*catalogue* (< *cata* + *logue* (?))).

(iii) Does [ɹ] occur, in examples such as the following, in ‘word-medial position’ or ‘word-final position’?

[ˈbɒtɹnek] *bottleneck*, [ˈkætɹmən] *cattleman*, [ˈmetɹwɜ:k] *metalwork*; [ˈbɒtɹfɒl] *bottleful*, [ˈbɒtɹɪŋ] *bottling*, [ˈbɒtɹə] *bottler*, [ˈhʌsɹɪŋ] *hustling*, [ˈsetɹə] *settler*.

My answer is that [ɹ] in all the examples above will be regarded as occurring in *word-final position*. It is evident that some of these (from *bottleneck* to *metalwork*) are compounds and the others (from *bottleful* to *settler*) are derivatives. Complexes are by definition either compounds or derivatives. The occurrence of [ɹ] in simplex-final position within a complex, that is, in final position in a simple word within a derivative or within a compound, exemplifiable by [ˈbɒtɹ] in [ˈbɒtɹə] or [ˈbɒtɹnek], can legitimately be regarded as being identical with the occurrence of [ɹ] in final position in a simple word. It is evident that, in all these complexes, [ɹ] is better described as occurring in word-final position. We shall see even more clearly below when I show the occurrence of [ŋ] that it is justified to describe all such examples also in terms of word-final position, not word-medial position.

<sup>1</sup> For instance, in [ˈrɪdɹ], [ɹ] is preceded by the accented syllable [ˈrɪd], while in [ˈkæmɹə], [ɹ] is preceded by the accented syllable [ˈkæm]. However, see p. 189 for some exceptions like *support*, *solicitor*, *society* when occasionally pronounced [sɹˈpɒt] ([sɹˈpɒt?]), [sɹˈlɪstə] ([sɹˈlɪstə?]), [sɹsɑɪtɪ] or *Thank you!* when pronounced with a rising tune, occasionally, with [ˈŋ-kjɒ] or [ˈkɹkjɒ]. See in this connection *infra* fnn. 85 and 86 for some detailed remarks.

**[ŋ]**

(i) [ŋ] occurs in word-final position, in examples such as the following.

[ˈbʌtŋ] *button*, [ˈheɪdŋ] *Hayden*, [ˈəʊpŋ]<sup>2</sup> *open*, [ˈrɪbŋ] *ribbon*, [ˈbeɪkŋ] *bacon*, [ˈsʌdnɪs] *suddenness*, [ˈglʌtŋɪ] *gluttony*, [ˈhevŋlɪ] *heavenly*, [ˈlaɪtŋɪŋ] *lightening*, [ˌwɒdnˈhedɪd] *woodenheaded*.

Of the examples given above, *suddenness* to *woodenheaded* are derivatives, hence complexes, while all the others are simplexes.

(ii) [ŋ] occurs in word-medial position, in examples such as the following.

[ˈɪnsɪdŋt] *incident*, [ˈrɪbŋd] *riband*, [ˈpendŋt] *pendant*, [ˈhɒtŋtɒt] *Hottentot*, [tɒtŋəm] *Tottenham*.

Among the examples cited above, *Tottenham* and *Hottentot* are considered as simplexes as the etymologies of these words are undoubtedly opaque to average speakers of English (*Tottenham* < OE *Totehām* ‘village of *Totta* (anthronym) + *ham* ‘home’; and *Hottentot* < Afrikaans *hot en tot* ‘hot and tot’).

All the examples above (*incident* to *Tottenham*) are simplexes. In all these examples, [ŋ] can be described as occurring in word-medial position.

**[ɱ]**

[ɱ] occurs in word-final position in examples as the following. [ɱ] does not occur in word-medial position.

[ˈrɪðɱ] *rhythm*, [ˈprɪzɱ] *prism*, [ˈklæpɱ] *Clapham*,<sup>3</sup> [ˈəʊpɱ] *open*, [ˈhænsɱlɪ] *handsomely*, [ˈkæzɱ] *chasm*.

<sup>2</sup> MacCarthy (1950<sup>4</sup>: 117 fn. 1) gives [ˈəʊpŋ] and [ˈhæpŋ] as well as [ˈəʊpən] and [ˈhæpən], having given (*op. cit.*, §419) [ˈəʊpŋ] and [ˈhæpŋ]. Roach (1983<sup>1</sup>: 70, 1991<sup>2</sup>: 80, 2000<sup>3</sup>: 89, 2009<sup>4</sup>: 70) also endorses all of [ˈhæpŋ], [ˈhæpən] and [ˈhæpɱ]. Ward (1929<sup>1</sup>: §258, 1931<sup>2</sup>: §258, 1939<sup>3</sup>: §258, 1945<sup>4</sup>: §258, 1972<sup>5</sup>: §258) does not give [ˈəʊpŋ] and [ˈbeɪkŋ] which have no schwas, the pronunciations which seem to be also possible.

<sup>3</sup> At an early date, in addition to the frequent occurrence of [ɪ] and [ŋ], the occurrence of [ɱ] and [ɲ] is fully recognized by Ward (§235 in 1920<sup>1</sup>; §258 in 1931<sup>2</sup>, 1939<sup>3</sup>, 1945<sup>4</sup> and 1972<sup>5</sup>) who gives the examples of [ˈklæpɱ] and [ˈklæpəm] for *Clapham* as well as [ˈəʊpɱ] and [ˈəʊpən] for *open* and [ˈbeɪkɱ] and [ˈbeɪkən] for *bacon*. She is full aware of the use of the syllabicity diacritic, which she does not, however, employ in giving these examples. Ward characterizes the former variants with [ə] as occurring in quick speech and those without [ə] as occurring in careful speech. (I have modified some of the phonetic symbols used by Ward and added accent marks, without doing violence to the essence of her presentation.) Jones (1956c: §292) notes that [ˈklæpɱ] occurs in rapid pronunciation and that the more usual pronunciation of the word is [ˈklæpəm]. There is as yet no reference to either [ˈklæpəm] or [ˈklæpɱ] in some earlier editions of Jones (1956c), viz. (1909<sup>1</sup>: §53, 1914<sup>2</sup>: §53). The only other adducible example I am aware of in this connection is *Petersham* [ˈpi:t əʃ əm] (in *LPD3*). The change from [əŋ] to [ɱ] in e.g. *open* on the one hand and that from [əŋ] to [ɱ]

Of the examples given above, *handsomely* is a derivative, hence a complex, while all the others are simplexes.

### [ŋ]

[ŋ] occurs in word-final position in examples like the following. It does not occur in word-medial position.

[ˈbeɪkŋ] *bacon*,<sup>4</sup> [θɪkŋ] *thicken*.<sup>5</sup>

(N.B. I am not aware, so far as English phonetics literature is concerned, of the occurrence of [gŋ] which would be a phonetic counterpart of [kŋ] in English words ending in *-gan* (e.g. *organ*), *-gon* (e.g. *dragon*), *-ggin* (e.g. *noggin*) or *-gun* (e.g. *shogun*.)

### [ɾ]

(i) [ɾ] rarely occur in word-final position.

(ii) [ɾ] occurs in word-medial position in such examples as the following.

[ˈmemɹɪ] *memory*, [ˈkæmɹə] *camera*, [ˈhʌŋgɹɪ]<sup>6</sup> *Hungary*, [ˈfɑːðɹɪŋ] *fathering*,  
[ˈfɪləndɹə] *philanderer*, [ˈkæmɹə] *camera*.

None of [l], [ŋ], [m], [ŋ] and [ɾ] occurs in word-initial position. As for the occasional occurrence of [ŋ] in utterance-initial, and consequently, word-initial position (cf. *Thank you!*), see p. 187).

in e.g. *Clapham* or *Petersham* on the other are not comparable, i.e. [pən] > [pŋ] > [pɹ] (in the case of *open*) and [pəm] > [pɹ] (in the case of *Clapham*) or [fəm] > [fɹ] (in the case of *Petersham*). The first consists in the elision of the schwa, which gives rise to [ŋ], and progressive assimilation occurs, i.e. [ŋ] > [m]. The second and third consist in the elision of the schwa, resulting directly in [ɹ] without involving assimilation.

<sup>4</sup> In *LPD3* (51) the pronunciation with [kŋ-] (as in [ˈbeɪ kŋ-] *bacon*) is mentioned in the Note on ‘assimilation’. Laver (1994: 241) cites [beɪkŋ] as an example involving [ŋ] as being on an (apparently) comparable status to [ŋ] and [ɹ].

<sup>5</sup> Roach (1983<sup>1</sup>: 69) cites *thicken* and *waken* and says that ‘after velar consonants...syllabic **ŋ** is possible but **ən** is also acceptable.’ and goes on to say that ‘Syllabic velar nasal **ŋ** is also possible in this context’. Roach (1991<sup>2</sup>: 81, 2000<sup>3</sup>: 89, 2009<sup>4</sup>: 70) retains *thicken* but drops *waken*. Roach (1983<sup>1</sup>: 70, 1991<sup>2</sup>: 81, 2000<sup>3</sup>: 89, 2009<sup>4</sup>: 70) says that ‘Examples of possible syllabic velar nasals would be ‘thicken’ **θɪkŋ** (where **θɪkən** and **θɪkɹ** are also possible), and ‘broken key’ **brəʊkŋ ki:** ‘where the nasal consonant occurs between velar consonants’ (**ŋ** or **ən** could be substituted for **ŋ**).’ Jones (§285 in 1950<sup>3</sup> and 1956<sup>c</sup>), at an earlier date, expresses the same view as Roach’s and gives examples like *taken* **ˈteɪkŋ**, *we can go...* **wi: kŋ** ‘go...’ and *egg and bacon* **ɛg ŋ beɪkŋ**, though, says he, pronunciations with **ən** or **n** occur in slower speech. (The phonetic notations are Jones’s.) Notice that Jones does not give **ɛg m beɪkŋ**, (where [m] is actually [ɹ]) which I suppose is also possible. Windsor Lewis (personal communication, 13 February 2013) supports my view and says it happens normally.

<sup>6</sup> Some authors attribute this pronunciation with [ɾ] to *hungry* as well.

### The consonants that precede the syllabic consonants

A variety of consonants precede each of the syllabic consonants. The identities and number of these consonants vary depending on the individual syllabic consonants. Here is a result of my survey of the sequences of various consonants and the individual syllabic consonants.

#### (1) Consonants + [l]

- [p] + [l] as in ['sʌp] *supple*
  - [b] + [l] as in ['reb] *rebel*
  - [m] + [l] as in ['mæm] *mammal*
  - [f] + [l] as in ['mʌf] *muffle*
  - [v] + [l] as in ['kæv] *cavil*
  - [θ]<sup>7</sup> + [l] as in ['li:θ] *lethal*
  - [t] + [l] as in ['bɒt] *bottle*
  - [d] + [l] as in ['mʌd] *muddle*
  - [n] + [l] as in [tʃæn] *channel*
  - [ʃ] + [l] as in ['bʊʃ] *bushel*
  - [tʃ] + [l] as in ['sætʃ] *satchel*
  - [dʒ] + [l] as in ['kʌdʒ] *cudgel*
  - [k] + [l] as in ['ʌŋk] *uncle*
  - [g] + [l] as in ['fʌŋg] *fungus*
  - [ʔ] + [l] as in ['bɒʔ] *bottle*
  - [r] + [l] as in [per] *peril*
- (N.B. [h], [ʒ], [ð]<sup>8</sup> and [ŋ] do not precede [l].)

#### (2) Consonants + [ŋ]

- [p] + [ŋ] as in ['əʊpŋ] *open*
- [b] + [ŋ] as in ['rɪbŋ] *ribbon*
- [f] + [ŋ] as in ['sɒfŋ] *soften*
- [v] + [ŋ] as in ['ʌvŋ] *oven*
- [t] + [ŋ] as in ['kɒtŋ] *cotton*
- [d] + [ŋ] as in ['sʌdŋ] *sudden*
- [θ] + [ŋ] as in ['dʒɒnəθŋ] *Jonathan*
- [ð] + [ŋ] as in ['hi:ðŋ] *heathen*
- [s] + [ŋ] as in ['lesŋ] *lesson*
- [z] + [ŋ] as in ['prɪzŋ] *prison*

<sup>7</sup> [θ] as in ['li:θ] *lethal* or ['eθ] *Ethel* rarely occurs. I am aware of only two other examples, i.e. *brothel* (to be mentioned in fn. 8) and ['beθ] *Bethel*.

<sup>8</sup> Note the absence of [ð] which is the voiced counterpart of [θ]. This is because [ð] does not occur in BrE. A word like *brothel* is pronounced with [θ] in BrE, though it is pronounced with [θ] or [ð] in AmE.

- [ʃ] + [ŋ] as in ['æʃŋ] *ashen*  
 [ʒ] + [ŋ] as in ['fju:ʒŋ] *fusion*  
 [tʃ] + [ŋ] as in ['kwɛstʃŋ] *question*  
 [dʒ] + [ŋ] as in ['ɒksɪdʒŋ] *oxygen*  
 [k] + [ŋ] as in ['brɒkŋ]<sup>9</sup> *broken*  
 [g] + [ŋ] as in ['peɪŋŋ]<sup>10</sup> *pagan*

(The occurrence of [ŋ] is conveniently mentioned in *EPD14* (xix) as follows:  
 'Final syllabic /n/ is to be understood following /t, d, f, v, s, z, ʃ, ʒ/ as in 'cot-  
 ton, sudden, often, listen, dozen, ocean, vision'...)

(3) Consonants + [m]

- [p] + [m] as in ['əʊpm] *open*  
 [b] + [m] as in ['rɪbm] *ribbon*  
 [θ] + [m] as in [krə'sænθməm]<sup>11</sup> *chrysanthemum* (N.B. [θm] in this example does not occur in word-final position, where [θəm] not [θm] normally occurs; cf. ['ænthəm] *anthem*.)  
 [ð] + [m] as in ['fæðm]<sup>12</sup> *fathom*  
 [s] + [m] as in ['hænsm] *handsome/hansom*  
 [z] + [m] as in ['bʊdɪzm] *Buddhism*  
 [ʃ] + [m] as in ['fævəʃm] *Faversham*  
 (N.B. [d], [t], [g], [k], [f], [v], [ʒ], [tʃ], [dʒ], [h], [r], [l], [m] and [n] do not seem to occur before [m].) All the examples involving [m] given above occur in word-final position.)

(4) Consonants + [ŋ]

- [k] + [ŋ] as in ['beɪkŋ] *bacon*

(5) Consonants + [r]

- [d] + [r] as in ['fɪləndrə] *philanderer*  
 [t] + [r] (devoiced) ['sɑ:tɹ] *Sartre*

<sup>9</sup> Roach (1983<sup>1</sup>: 69, 1991<sup>2</sup>: 80, 2000<sup>3</sup>: 88, 2009<sup>4</sup>: 70), after saying that 'In words where the syllable following a velar consonant is spelt 'an' or 'on'...it [i.e. [ŋ]] is rarely heard...', suggests that [ən] is more usually heard. His remark would not apply to my example of *broken* here as it is spelt with *en*.

<sup>10</sup> Roach's remark quoted in fn. 9 would apply to my example of *pagan* as it is spelt with *an* and also to e.g. *wagon* as it is spelt with *on*. According to him, [ən] rather than [ŋ] is more frequently heard. Roach's criterial reference to the spelling, i.e. *en* (as in *thicken* and *waken*, and surely *broken* as well) on the one hand and *an* and *on* (as in *pagan* and *wagon*) on the other as an explanation about the equal occurrence of [ŋ] and [ən] for the former and the definitely preferred occurrence of [ən] over [ŋ] for the latter is not clear to me.

<sup>11</sup> This pronunciation is entered as one of the alternative variants (the last variant listed) of this word in *LPD3*. The main pronunciation given in *LPD3* is [krə'sænθməm].

<sup>12</sup> [ðm] (weak form of *them*) can be another example here.

[ð] + [r] as in ['fa:ðrɪŋ] *fathering*

[g] + [r] as in ['hʌŋgrɪ] *Hungary*

(N.B. [r] mostly occurs in word-medial position, as shown above. [r] rarely occurs in word-final position. *Sartre* cited above is one of the rare examples).

### Homorganicity between the syllabic consonants and the consonants that precede them

Looking at the list given above, it is clear that some of the sequences of various consonants and the syllabic consonants exhibit homorganicity between the consonants and the syllabic consonants (e.g. [tɪ] as in ['bɒtɪ] *bottle*) while the others (e.g. [pɪ] as in ['sʌpɪ] *supple*) do not.

#### 1. Presence of homorganicity

Instances of homorganicity are found in a relatively small number of cases in all of (1) to (5). We can probably consider that homorganicity occurs in [dɪ], [tɪ] and [ðɪ] (but not in [grɪ]) if we assume that the place of articulation of [d], [t] and [ð] is assimilated to that of [r] so that both successive consonants in each sequence are pronounced post-alveolarly. Homorganicity is of course absent in [ʔɪ] in which ([ʔ] (glottal)) is pronounced in place of [t] (apico-alveolar) as in e.g. ['bɒʔɪ] *bottle* cited in (1).

There exists homorganicity between [ɪ] and each of the preceding consonant, viz. [t], [d], [θ], [n]. As for the non-occurrence of [ðɪ] in BrE, see fn. 8.

Other instances of homorganicity are in [tɪ] as in ['bʌtɪ] *button*, [dɪ] as in ['heɪdɪ] *Haydon*, [pɪ] as in ['klæpɪ] *Clapham*, [bɪ] as in ['rɪbɪ] *ribbon*, [kɪ] as in ['beɪkɪ] *bacon*.<sup>13</sup> What articulatorily happens is as follows. (i) in the case of [tɪ] and [dɪ], 'lateral release' occurs while 'apico-alveolar closure' is maintained; (ii) in the case of [nɪ], 'apico-alveolar closure' is maintained while 'lateral release' and 'velic closure' are concomitantly executed; and (iii) in the case of [kɪ] 'velic release' occurs while 'velar-dorsal closure' is maintained.

It is not clear to me if e.g. *ribbon*, notated ['rɪb lən] (cf. [əʊp lən] *open*) in *LPD3* results, with the elision of the schwa, in not only [-bɪ] (cf. [-pɪ]) but even [-bɪ] (cf. [-pɪ]). *EPD18* notates ['rɪb.əɪn] while *CPDBAE* notates ['rɪbən], suggesting that neither [ɪ] nor [ɪ] occurs preceded by [b] in this or other phonetically relevant

<sup>13</sup> As a number of writers do, O'Connor (1973: 146) too cites the example of ['beɪkɪ] but in specific reference to the context where *bacon* is followed by a word beginning with [k]. He cites the phrase *bacon cutter*.

words.<sup>14</sup> If [b] + [m̩] does occur, one can of course reckon with homorganicity between [b] and [m̩]. Laver (1994: 241) gives the example [kab̩mbɔɪ] (I have vicariously added the square brackets) *cabin boy*. This example, which is a compound, involves the process '[bɪn] > [b̩] > [b̩m̩]', in part parallel to '[pən] > [p̩] > [p̩m̩]', often cited to exemplify the process which e.g. *open* undergoes. The difference between the two processes culminating in [m̩] is of course that the former involves the omission of [ɪ] in ['kæbɪn] in a certain speech style, unlike in the case of the latter process. It remains to be seen if a similar process may take place (in the same relevant speech style) in e.g. *cabin crew* [-kɪ-] as well as *cabin fever* [-ɪf-] (this latter is certainly possible), and so on, where [ɪ] and [m̩], etc. are syllabic. Laver's example above is a compound, but an example need not necessarily be such but can be a phrase, e.g. (*The*) *cabin burned* [-b̩m̩-].

One interesting example of [m̩] occurring in a compound is given by Roach (1983<sup>1</sup>: 70, 1991<sup>2</sup>: 81, 2000<sup>3</sup>: 89, 2009<sup>4</sup>: 70), though not in any of *EPD15* through *EPD18*, viz. *uppermost* which is said to be pronounced ['ʌpəməʊst] (which is more usual) or ['ʌp̩məʊst]. Notice that the latter pronunciation involves [m̩] in [p̩m̩] (resulting from the elision of the schwa of ['ʌpə...]). I have not found this example in the writing of any other researcher. Incidentally, Roach (1983<sup>1</sup>: 70, 1991<sup>2</sup>: 81, 2000<sup>3</sup>: 89, 2009<sup>4</sup>: 70), or for that matter any of *EPD15* through *EPD18*, does not give *utmost* as pronounced ['ʌtməʊst], a potential case analogous to *uppermost*. It seems to me that a potential pronunciation ['ʌtm̩əʊst] for *utmost* might give rise to confusion between it and *uppermost* ['ʌp̩məʊst]. For this reason, it is suspected that ['ʌp̩məʊst] instead of ['ʌpəməʊst] may be unusual.

## 2. Absence of homorganicity

In a good number of other cases there is no homorganicity between a syllabic consonant and the preceding consonant. Such cases are shown as follows.

So far as [l̩] is concerned, homorganicity does not exist between [l̩] and the various consonants occurring before it. These consonants are [p], [b], [m], [f], [v], [θ], [ʃ], [tʃ], [dʒ], [k], [g], [r] and (we will not forget) [ʔ], that is, a fair large number of consonants.

As for [ŋ], homorganicity is absent between it and the various consonants preceding it. These consonants whose number is also quite large are [p], [b], [f], [θ], [s], [z], [ʃ], [ʒ], [tʃ], [dʒ], [k] and [g].

<sup>14</sup> I sought the thoughts of Windsor Lewis (compiler of *CPDBAE*) (personal communication, 12 January 2013) about the attestability of [-b̩m̩] in, say, *ribbon* if at all pronounced ['rɪb̩m̩] prepausally. His answer was in the negative, in principle. Yet I am aware that *EPD3* (51) acknowledges the occurrence of e.g. *ribbon* pronounced ['rɪb̩m̩] (progressive assimilation). I feel inclined to take [b̩m̩] into account.

It is true that [l] and [ŋ] are the most frequently occurring syllabic consonants in English. This might possibly be due to the fact that a very large number of English words end with [l], preceded or not by [t], [d] or [n], and also those which end with [ŋ] preceded or not by [t] or [d], if perhaps to a somewhat lesser extent. This is of course a matter of lexical statistics which needs investigating.

For [m], except for [p] with which [m] enters into homorganicity, there is no homorganicity between [m] and a fair number of consonants preceding it. These consonants are [ð], [s], [z] and [ʃ].

There are no instances of non-homorganicity so far as [ŋ] is concerned as it only occurs preceded by [k].

Finally, so far as [r] is concerned, out of the four consonants which occur before [r], [g] is the only consonant with which [r] does not enter into homorganicity.

With regard to [m], it is significant that the occurrence of [pm] and [bm] is relatively uncommon. Only a small number of cases of [m] with consonants preceding it occur and these consonants are those that do not enter into homorganicity.

Quite apart from the fact of homorganicity or non-homorganicity mentioned above, it is a fact that [l] and [ŋ] are the major and most frequently occurring syllabic consonants in English while [m], [ŋ] and [r] enjoy only marginal occurrence. This is most probably why major attention by phoneticians is customarily focused on [l] and [ŋ].

The question of homorganicity or non-homorganicity between the syllabic consonant and the consonant preceding it, i.e. the question I have presented above at some length, is of not only phonetic interest but – as we shall see later – of phonological significance.

### **Two-way co-variation between ‘syllabic consonant’ and ‘schwa plus non-syllabic consonant’**

With a notable exception of [ŋ]<sup>15</sup>, the occurrence of a syllabic consonant (i.e. [l], [ŋ], [m] or [r]) is invariably matched by that of ‘[ə] + non-syllabic consonant’,<sup>16</sup> so that, for example, the occurrence of e.g. [l] is invariably matched by that of [əl]. In

<sup>15</sup> Why [ŋ] is an exception will be explained later (see last paragraph in **The occurrence of syllabic consonants in word-initial context** (187) and fnn. 85 & 87).

<sup>16</sup> Jones (1959: 136) says: ‘...that syllabic *l*’s and *n*’s of the original words are by no means always retained, but that in a great many cases the addition of the suffixes causes the sounds to become non-syllabic.’ Wells (JW’s blog, 20 Dec. 2011) also says as follows: ‘Syllabic consonants are never categorically required in English. There is always an alternative pronunciation available, with ə and a nonsyllabic consonant.’

other words, [ɪ] and [əɪ] are in co-variation in the pronunciation of those words which involve [əɪ] and [ɪ]. This relationship between [əɪ] and [ɪ] can be expressed as [əɪ] ~ [ɪ] (e.g. ['bɒtəɪ] ~ ['bɒtɪ] for *bottle*). I will call it 'two-way co-variation' and employ the symbol '~' to mean 'co-varies with' or 'in co-variation with'. As [ɪ] results from the elision of the schwa of [əɪ], it is [əɪ] that logically takes precedence over [ɪ] in terms of articulatory process, hence [əɪ] > [ɪ].<sup>17</sup> In other words, from the point of view of articulation, [əɪ] is the primary variant and [ɪ] the secondary variant, not the other way round. The co-variation [əɪ] ~ [ɪ] is therefore directional and is to be understood in the sense of [əɪ] > [ɪ], not [ɪ] > [əɪ]. This directional co-variation is customarily expressed in the form of [əɪ] in both *LPD3* and *EPD18*. Thus, for instance, for *bottle*, *LPD3* notates ['bɒt əɪ] and *EPD18* ['bɒt.əɪ].<sup>18</sup> The notation ['bɒt əɪ] or ['bɒt.əɪ] is a conflation of ['bɒtəɪ] and ['bɒtɪ], two pronunciations which co-vary, i.e. ['bɒtəɪ] ~ ['bɒtɪ]. It should be noted at this juncture that *CPDBA* systematically lists only pronunciations with syllabic consonants, without indicating the form '[ə] + non-syllabic', e.g. ['bɒtɪ] in which [ɪ] automatically represents [ɪ]; no syllabicity diacritic is added as it would be superfluous to do so.

### Three-way co-variation between 'syllabic consonant', 'schwa plus non-syllabic consonant' and 'non-syllabic consonant'

'[ə] + non-syllabic consonant' does not necessarily co-vary with a syllabic consonant only, what I have called 'two-way co-variation' between 'syllabic consonant' and 'schwa plus non-syllabic consonant'.

Many words have three co-varying pronunciations, i.e. [əɪ] ~ [ɪ] ~ [l], so that e.g. *hustling* is pronounced ['hʌsəɪlɪŋ] (with a schwa followed by non-syllabic lateral), ['hʌsɪlɪŋ] (with a syllabic lateral) or ['hʌslɪŋ] (with a non-syllabic lateral). ['hʌs-əɪ-lɪŋ] and ['hʌs-ɪ-lɪŋ] are trisyllabic while ['hʌs-lɪŋ] is disyllabic. In other words, there is what I call 'three-way co-variation' between 'schwa plus non-syllabic consonant', 'syllabic consonant', and 'non-syllabic consonant'.<sup>19</sup> The example of three-way co-

<sup>17</sup> Practically all researchers consider the schwa *elidable* in such and other similar cases involving the occurrence of syllabic consonants. However, Toft (2002: 111) unorthodoxically considers such schwas as epenthetic vowels.

<sup>18</sup> The space in the phonetic notation in *LPD3* and the dot in that in *EPD18* represents syllable division.

<sup>19</sup> This is clearly indicated by Jones (1959: 136) when he writes: 'An examination of the words formed with such suffixes reveals, however, that the syllabic *l*'s and *n*'s of the original words are by no means always retained, but that in great many cases the addition of the suffixes causes the sounds to become n o n-s y l l a b i c.' He then gives examples like ['krɪŋkɪlɪ], ['sɪmplɪ], ['saɪkɪlɪŋ] and ['lɪsnɪŋ]. Jones continues to add an important remark (not made by most researchers in connection with syllabic consonants) that, for instance, [k] in ['kwɪkɪlɪ] *quickly* is longer than [k] in ['krɪŋkɪlɪ], while (as is well known) [ɪ] in ['krɪŋkɪlɪ] is much longer than [l] in ['kwɪkɪlɪ]. I take it that Jones could

variation for *hustling* may be expressed as ['hʌs-əl-ɪŋ] ~ ['hʌs-ɪ-ɪŋ] ~ ['hʌs-lɪŋ], or simply, ['hʌsəlɪŋ] ~ ['hʌsɪŋ] ~ ['hʌslɪŋ].<sup>20</sup> A few more examples are e.g. *lentil* ['lentɪl, -ɪl] (*LPD3*), i.e. ['lentɪl] ~ ['lentəl] ~ ['lentɪ]), or ['len.tɪl, -ɪl] (*EPD18*), i.e. ['lentəl] ~ ['lentɪ] ~ ['lentɪl]). Notice that the order in which of the three pronunciations for *lentil* is listed in *LPD3* and *EPD18* is the reverse of each other. Three-way co-variation between [əɾ], [ɾ] and [r] can be exemplified by ['fɑːðərɪŋ] ~ ['fɑːðɾɪŋ] ~ ['fɑːðrɪŋ] for *fathering*.

Roach (1983<sup>1</sup>: 70, 1991<sup>2</sup>: 81-2) makes some relevant remarks, and gives a few examples involving [əɾ], [ɾ] and [r], which I copy below by employing my co-variation notation and slightly modifying his phonetic notation without doing it violence.

['hɪstɾɪ] ~ ['hɪstrɪ] ~ ['hɪstəri] for *history*  
 ['wɒndɾə] ~ ['wɒndrə] ~ ['wɒndərə] for *wanderer*  
 ['bʌtɾɪŋ] ~ ['bʌtəriŋ] ~ ['bʌtrɪŋ] for *buttering*  
 ['flætɾɪ] ~ ['flætəri] ~ ['flætrɪ] for *flattery*

In addition, Roach gives the following two pairs of words which he presents as minimal pairs distinguished through the difference between [ɾ] and [r].

['hʌŋgɾɪ] *Hungary* vs. ['hʌŋgrɪ] *hungry*  
 [ə'dʌltɾəs] *adulterous* vs. [ə'dʌltrəs] *adultrous*

He goes on to say, however, that both *Hungary* and *adulterous* can also be pronounced with [r], in which case these two pairs of words would not constitute minimal pairs.

Subsequently, Roach (2000<sup>3</sup>: 89-90, 2009<sup>4</sup>: 70) drops all the above-cited examples involving the use of [ɾ] and/or [r] except *Hungary* and *hungry*, about which he repeats the same remark that he made in the previous two editions. This means that Roach suggests that there are no cases in which the use of [ɾ] and [r] is amenable to producing minimal pairs and that it only produces instances of co-variation.

Roach makes another point. In connection with his example of four words which we have copied above, i.e. *history*, *wanderer*, *buttering* and *flattery*, Roach (1983<sup>1</sup>: 70, 1991<sup>2</sup>: 81-2) says that, of the forms in which non-syllabic [ɾ] occurs, ['hɪstəri] (though not ['hɪstrɪ]) and ['wɒndərə] (though not ['wɒndrə]), and ['bʌtrɪŋ] (though not ['bʌtəriŋ]) and ['flætrɪ] (though not ['flætəri]) are unusual. However, all

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mention ['krɪŋkli] instead of ['kwɪkli] here and thereby cite ['krɪŋkli] and ['krɪŋkli] in co-variation. Jones ascribes the relatively short [k] followed by [ɪ] to 'compensatory shortening'.

<sup>20</sup> In my correspondence with Windsor Lewis (12 January 2013), I sought confirmation that these three forms are attestable ones and obtained an affirmative answer. Windsor Lewis describes 'the first ['hʌsəlɪŋ] is fussy, the second ['hʌsɪŋ] careful and the third ['hʌslɪŋ] normal for GB of our generation.' I agree with him.

these example words and the relevant remarks are subsequently dropped in Roach (2000<sup>3</sup>: 80, 2009<sup>4</sup>: 70). The point he made and subsequently withdrew is that a non-syllabic consonant is acceptable if *more than one* consonant occurs before the schwa of ‘schwa + non-syllabic’ in the unaccented syllable (e.g. [ˈhɪstrɪ], [ˈwɒndrə]) but not so acceptable if *only one* consonant occurs (e.g. [ˈbʌtrɪŋ], [ˈflætrɪ]). It is not entirely clear if what Roach says about degrees of acceptability of variants with non-syllabic consonant is equally applicable to variants with [əl], [ɪ] and [ɪ] and those with [ən], [ŋ] and [n].

Let’s consider, for the sake of argument, Roach’s point mentioned in the preceding paragraph by taking examples of the forms with non-syllabic [n]. The word *merchant* is indicated as [ˈmɜːtʃɪnt] in *EPD18* and [ˈmɜːtʃənt] in *LPD3*. According to Roach, [-tʃənt] with [n] (non-syllabic) would be acceptable if [tʃ] is regarded as two consecutive consonants, i.e. [t] + [ʃ] as in [ˈwaɪt ˈʃɜːt] *white shirt*, but not so if [tʃ] is regarded as a single well-knit consonant, as in [tʃɜːtʃ] *church*. In which way Roach regards [tʃ] is not clear to me as he does not touch this point<sup>21</sup> but it seems safe to guess that he probably regards [tʃ] as two consecutive consonants and he would be consistent with himself in considering [ˈmɜːtʃənt] with [n] as acceptable.<sup>22</sup> *LPD3*’s notation suggests that while recognizing [ˈmɜːtʃɪnt] with [ŋ], it recommends [ˈmɜːtʃənt] with [n] to the foreign student.<sup>23</sup> Note that *LPD3* is comparing here [ŋ] and [ən] rather than [ŋ] and [n] while not explaining why [ən] is preferred for the foreign student. At any rate, Roach and *LPD3* agree in preferring e.g. [ˈmɜːtʃənt] with [n].

By Roach’s criterion, [ˈhʌslɪŋ] and [ˈfɑːðrɪŋ] cited above would be judged to be little acceptable, yet paradoxically *EPD18* indicates [ˈhʌslɪŋ] (as well as [ˈhʌsəlɪŋ] and [ˈhʌslɪŋ]). *EPD18* does not indicate [ˈfɑːðrɪŋ]. *LPD3* notates [ˈhʌsəlɪŋ] and [ˈhʌslɪŋ] but not [ˈhʌsəlɪŋ], while [ˈfɑːðrɪŋ] is not given.

The phenomenon involved in [əl] > [l], [ən] > [n], [əm] > [m], [əŋ] > [ŋ] or [ər] > [r], provided that the elision of the schwa does not result in the creation of [l], [ŋ], [m], [ŋ] or [r], is what is known as ‘syncope’ in synchrony since the number of the constituent syllables is reduced by one through the elision of the schwa.<sup>24</sup> Rather than

<sup>21</sup> Cf. e.g. Roach (1983<sup>1</sup>: 42-3, 1991<sup>2</sup>: 52, 2000<sup>3</sup>: 54, 2009<sup>4</sup>: 43).

<sup>22</sup> If so, there is a residual problem. Roach (1983<sup>1</sup>: 42-3, 1991<sup>2</sup>: 52, 2000<sup>3</sup>: 54, 2009<sup>4</sup>: 43) treats [tʃ] as an affricate, which is customarily regarded to be a single well-knit consonant. If so, *merchant* would have just one consonant and therefore, according to Roach, [ˈmɜːtʃənt] would not be acceptable after all any more than are [ˈbʌtrɪŋ] and [ˈflætrɪ] which have only one consonant, [t], before [r]. There would then be a contradiction.

<sup>23</sup> To my knowledge, *LPD3* does not, unlike Roach, mention the condition of there being one consonant or more than one consonant, depending on which condition either a non-syllabic consonant or a syllabic consonant is acceptable.

<sup>24</sup> I wish to throw in here a personal remark that, in my natural flow of English pronunciation (I am a non-native speaker of English who learned English as a foreign language), I regularly *pro-*

the term ‘syncope’, Wells regularly employs the term ‘compression’.<sup>25</sup> When using the term ‘compression’ in this paper I use it as a synonym of syncope.

### The non-occurrence of [ɪ] in favour of [ə] or [i]

The occurrence of [ɪ] is not attested in some cases where it might be expected. This can be exemplified by *coupling* (n.) which is pronounced [ˈkʌplɪŋ] (neither [ˈkʌpɪŋ] nor \*[ˈkʌpəlɪŋ]), whereas *coupling* (v. pres. part.) may be pronounced [ˈkʌpəlɪŋ] as well as [ˈkʌpɪŋ] or [ˈkʌplɪŋ]. Note also in this connection that *coupler* is pronounced [ˈkʌplə] only, and *couplet* [ˈkʌplət] or [ˈkʌplɪt] only. Both *LPD3* and *EPD18* give the same indication in this respect.

### Differentiative use of the phonetic symbols ‘ə’ and ‘ɚ’

Having dealt with some generalities about the syllabic consonants occurring in English, I now wish to discuss a small number of specific issues which personally interest me.

I have earlier said that a syllabic consonant co-varies with ‘[ə] + non-syllabic consonant’, e.g. [ə] ~ [ɪ]. The schwa in ‘[ə] + non-syllabic consonant’ receives varying notations in pronouncing dictionaries. It is notated uniformly by ‘ɚ’ (non-italic, downsized and superscripted) as in [ˈbʊt.ɚl] or [ˈprɪz.ɚm] in *EPD18*. However, in *LPD3*, the schwa in ‘[ə] + non-syllabic consonant’ is differentially notated by ‘ɚ’ as in [ˈbʊt.ɚl] or by ‘ə’ (italicized, not downsized and not superscripted) as in [ˈprɪzəɪm].<sup>26</sup> Some discussion is therefore in order in connection with the use of the italic phonetic symbol ‘ə’ which is employed for a special purpose for a good number of words in *LPD3* (but not in *EPD16*, *EPD17*, *EPD18*<sup>27</sup>). The reason for using discriminately the

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*nounce by way of compression* English words which are said to have syllabic consonants [ɪ], [ŋ] and [ɹ] if the syllabic consonants in such words are followed by vowels. Thus, *meddler*, *meddling*, *buttoning*, *history*, *oftener* and numerous other words are always pronounced [ˈmedlə], [ˈmedlɪŋ], [ˈbʌtɪŋ], [ˈhɪstɪrɪ], [ˈɒːfnə], etc. Therefore, in my pronunciation, putative ‘minimal pairs’ such as *codling* (pronounced with [dl]) vs. *coddling* (pronounced with [dl]) are unknown. On the other hand, I always observe [ɪ] and [ŋ] in word-final position as in *bottle*, *coddle*, *meddle*, *button*, *pardon*, etc. and regularly have [ɪ] and [ŋ] when they are followed by consonants, e.g. *incident*, *incidentally*.

<sup>25</sup> The term ‘compression’, in Wells’s usage, covers a wider field of phenomena than just ‘syncope’. See e.g. *LPD3* (149 & 173-4).

<sup>26</sup> Strictly speaking, ‘ɚ’ employed in both *EPD18* and *LPD3* and ‘ə’ employed in *LPD3* express not just the presence of [ə] but the double sense of the presence or absence of [ə], i.e. [ə] or [ɪ], so that ‘ɚ’ or ‘ə’ leads to a conflation of [ə] and [ɪ].

<sup>27</sup> The phonetic symbol ‘ə’ (italicized schwa) was used in *EPD1* through *EPD14*, but has been replaced by the phonetic symbol ‘ɚ’ from *EPD15* onward. However, I have noticed that ‘ə’ still lingers, though rarely, in *EPD15*, *EPD16*, *EPD17* and *EPD18*, accidentally or otherwise. For example, see *cadre* [ˈkɑː.də, ˈkeɪ-, -drə] (*EPD15*, *EPD16*, *EPD17*, *EPD18*), *entendre* [ɑːnˈtɑːndrə], *genre*

two phonetic symbols, ‘ə’ and ‘ə̃’ is clearly explained in *LPD3* (567) as follows in the Note about ‘Optional sounds’.

Sounds shown in **italics** are sounds which the foreign learner is recommended to include (although native speakers sometimes omit them). They denote sounds that may optionally be **elided**.

[...]

**bacon** ‘beikən. Some say ‘beikən, others say ‘beik n [i.e. [‘beikŋ]]. *LPD* recommends ‘beikən.

*LPD3* (799) also says as follows in the Note on ‘syllabic consonants’.

Syllabic consonants are also sometimes used where *LPD* shows italic ə plus a nasal or liquid, thus **distant** ‘distənt. Although there is a possible pronunciation ‘dist nt [i.e. [‘distnt]], *LPD* recommends ‘dist ənt.

We thus understand that ‘ə’ relates to *recommended inclusions* of the schwa (cf. [‘beik ən], [‘dist ənt]) for foreign students.

As for the phonetic symbol ‘ə̃’ we find the following in *LPD3* (567) in the Note about ‘Optional sounds’.

Sounds shown with **raised** [superscripted, non-italic downsized] **letters** are sounds which the foreign learner is recommended to ignore (although native speakers sometimes include them). They denote sounds that may optionally be inserted.

[...]

**sadden** ‘sæd ə̃n Some say ‘sæd n [i.e. [‘sædn]], others say ‘sæd ən. *LPD* recommends ‘sæd n.

We thus understand that ‘ə̃’ relates to *recommended non-inclusions* of the schwa (cf. [‘bɒt ə̃l], [‘sæd ə̃n]).

In connection with both ‘ə̃’ and ‘ə’ we find the following written by Wells (his blog of 22 December 2011).

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[‘ʒɑ̃:n.rə] (*EPD15*, *EPD16*, *EPD17*, *EPD18*) and *Sartre* [‘sa:.trə] (*EPD15*, *EPD16*, *EPD17*, *EPD18*). If it happens to be accidental, one wonders if the phonetic symbol ‘ə̃’ is inadvertently printed in lieu of ‘ə̃’ in these editions.

With regard to the use of ‘ə’ and other italic phonetic symbols, *EPD1* (xiii) states as follows: ‘When two variant pronunciations are distinguished by the insertion or omission of a single sound, and both forms are of approximately equal frequency, the fact is indicated by printing the symbol of the optional sound in italics. [...]’ This statement is in essence repeated, either verbatim or with minor or major phraseological modification, in the subsequent editions up to *EPD13*. From *EPD14* (edited by Gimson and Ramsaran), and *EPD15* (edited by Roach, *et al.*) up to *EPD18* (also edited by Roach, *et al.*) which is the latest edition as I write these lines, the above-mentioned statement disappears and the use of the schwa symbol (and of some other symbols) is explained differently.

This is the reasoning behind the notation I use in LPD, where potential syllabic consonants are shown either as *ʔl ʔn ʔr ʔm* or as *əl ən ər əm*, depending on whether a syllabic consonant is more or less likely as the output. The LPD notational convention is that a raised symbol denotes a possible insertion, an italic symbol a possible omission.<sup>28</sup> So *ʔn* implies a default *n*, as in hidden *ˈhɪd ʔn* → *ˈhɪdn*, while *ən* implies a default *ən*, as in hesitant *ˈhez ɪt ənt* → *ˈhezɪtənt*.

We thus understand from the passage just quoted that both ‘possible insertion of the schwa’ indicated by ‘ʔ’ and ‘possible omission’ of the schwa indicated by ‘ə’ are recommendations for foreign students, who are advised to use the default syllabic consonant (e.g. [n] in [ˈsædn]) as much as the default non-syllabic consonant [ən] as in [ˈhezɪtənt]).

Where foreign students are concerned, (i) in the case of a possible *insertion*, [n] is the first and recommended variant (e.g. *wooden* [ˈwʊdn]) while [ən] is the second variant (e.g. *wooden* [ˈwʊdən]), and (ii) in the case of a possible omission, [ən] is the first and recommended variant (e.g. *hesitant* [ˈhezɪtənt]) and [n] the secondary variant (e.g. *hesitant* [ˈhezɪtnt]). In other words, in (i) which has to do with a possible insertion, we have [n] → [ən] while in (ii) which has to do with a possible omission, we have [ən] → [n]. It is clear that what is implied by the symbol ‘→’ is not necessarily the logical precedence, which I earlier indicated, of the former pronunciation over the latter in the articulatory process involved in (i) or (ii). This is why I choose here the terms ‘first variant’ and ‘second variant’ rather than ‘primary variant’ and ‘secondary variant’, the terms I have earlier employed. What is signified by the symbols ‘→’ and the terms ‘first variant’ ‘second variant’ will become apparent further below.

The use of the phonetic symbols ‘ə’ and ‘ʔ’ in *LPD3* in connection with syllabic consonants is clearly meant to serve a pedagogical purpose. It must be said that *LPD* is not only descriptive but pedagogical on at least a few matters such as epenthetic plosives, elisions and syllabic consonants, not that this should be taken as a criticism.<sup>29</sup>

<sup>28</sup> Wells (2005: 6) previously succinctly says: ‘In LPD, raised symbols denote optional additions, italic symbols optional omissions.’

<sup>29</sup> Cf. Wells (2005: 5): ‘[This brings us to] the question of description versus prescription, always a slightly difficult issue for lexicographers who have been trained in a firmly descriptive tradition but who are aware that the dictionaries they write are used mainly by people seeking authoritative guidance on how to speak. A degree of prescriptivism is therefore expected and indeed found.’ Wells here is referring to different presentations of the pronunciation of English words as given by *EPD*, *LPD* and *ODP*.

Here are some examples of different phonetic notations in connection with the use of ‘ə’ (as distinct from that of ‘ə̃’) in *LPD3* and that of ‘ə̃’ in *EPD18*.<sup>30</sup>

*national*, [ˈnæf̥ə̃n ə̃] (*LPD3*) - [ˈnæf̥.ə̃n.ə̃l, ˈnæf̥.n.ə̃l] (*EPD18*)

*Buddhism* [ˈbʊd ɪz ə̃m] (*LPD3*) - [ˈbʊd|.ɪ.z̥ə̃m] (*EPD18*)

*prism* [ˈprɪz ə̃m] (*LPD3*) and [ˈprɪz.ə̃m] (*EPD18*)<sup>31</sup>

*barrel* [ˈbær ə̃l] (*LPD3*) - [ˈbær.ə̃l] (*EPD18*)

*astral* [ˈæs trəl] (*LPD3*) - [ˈæs.tr̥ə̃l] (*EPD18*)

*reverie* [ˈrev ə̃r i] (*LPD3*) - [ˈrev.ə̃r.i] (*EPD18*)

*binary* [ˈbaɪn ə̃r i] (*LPD3*) - [ˈbaɪ.n.ə̃r.i] (*EPD18*)

As can be seen above, apart from the pedagogical purpose for which *LPD3* differentially employs the phonetic symbols ‘ə’ and ‘ə̃’, we may regard the indication of the occurrence of the syllabic consonants as given in *LPD3* and *EPD18* as essentially the same. It seems correct to understand that, anyway, the occurrence of the syllabic consonants is recognized in *LPD3* as well as *EPD18* in those cases where ‘ə’ is employed in *LPD3*.

Note that both *LPD3* and *EPD18* employ the phonetic symbol ‘ə’ (not superscripted, not italicized, not downsized) for words like *buxom*, *custom*, *freedom*, *capstan*, *Oscan*, etc. which have only [ə̃m] or [ə̃n], respectively, to the exclusion of [m̥] or [n̥], again respectively.

It would seem to me more appropriate to use the phonetic symbol ‘ə’ (as do *EPD18* and *CPDBA*) than to use the phonetic symbol ‘ə̃’ in *LPD3* for a fair number of words, e.g. *acceptance* [ək ˈsept ə̃n’s] (but, curiously, not in *repentance* [ri ˈpent ə̃n’s]), *barrel* [ˈbær ə̃l], *cattery* [ˈkæt ə̃r i],<sup>32</sup> *spidery* [ˈspaɪd ə̃r i], *central* [ˈsentr ə̃l], *coral* [ˈkɔr ə̃l], *handsome* [ˈhæn’s ə̃m], *national* [ˈnæf̥ ə̃n ə̃l], *prism* [ˈprɪz ə̃m], etc. This matter concerns particularly those foreign learners of English who may often find it difficult to pronounce the schwa satisfactorily with regard to its quality. If some foreign learners have already succeeded in correctly pronouncing [l̥], [n̥], [m̥] [r̥], [tr̥] and [dr̥], there seems to be no need to discourage this achievement on their part. On the other hand, I agree with *LPD3* in indicating *bacon* [ˈbeɪk ə̃n], *paragon* [ˈpær

<sup>30</sup> Here and below I only refer to *EPD18*, but the phonetic notations in question are the same in *EPD15*, *EPD16* and *EPD17* as well.

<sup>31</sup> It is interesting to note that while *LPD3* differentially notates *prism* [ˈprɪzə̃m] (with default [ə̃m]) and *prison* [ˈprɪz̥ə̃n] (with default [n̥]), such a pedagogically differential notation is not adopted in *EPD18* which gives [ˈprɪz.ə̃m] and [ˈprɪz.ə̃n]. *CPDBA* gives [ˈprɪzm] and [ˈprɪzn] which correspond to [ˈprɪzm̥] and [ˈprɪzn̥], respectively. The fact is not missed out here that *prizm* and *prison* are orthographically more different from each other than phonetically in terms of the segments.

<sup>32</sup> The phonetic (phonological?) symbol ‘i’ in a case like this stands, as *LPD3* says, for a product of the neutralization of /i/ - /ɪ/ in word-final context, as here, and in a certain other phonetic contexts. Strictly, then, the symbol ‘i’ in question stands for the archiphoneme /i-ɪ/ which *LPD3* does not characterize, however.

əg ən], etc. with the phonetic symbol ‘ə’, as there is no particular need to encourage [kŋ] on the part of foreign students of English.

### The question of the occurrence of [r]

#### I. Does [r] not occur in English?

While the occurrence of [l], [ŋ], [m] and [ŋ] is customarily acknowledged without question, the occurrence of [r] appears to be contested by some and recognized by others, and there does not seem to be complete agreement on this point.

The occurrence of [r] is ruled out by none other than Jespersen (1950<sup>5</sup>: 130) who writes as follows.

[r] happens never to be syllabic because the only position in which it occurs in Modern English is before a vowel, and that being the case [r] can never be the peak as compared with the subsequent vowel.

Scherer & Wollmann (1977<sup>2</sup>: 103), too, categorically negate the occurrence of [r] in English.

Cohen (1965: 61, 63, 64) specifically mentions [l] and [ŋ] but neither [r] nor [m]. It is difficult to presume whether or not he rules out [r].

#### II. [r] occurs in English

Roach (1983<sup>1</sup>: 70, 1991<sup>2</sup>: 81) says that ‘Syllabic r is less common in RP [than in what Roach refers to as ‘most American accents’]...’. The word ‘RP’ is replaced by ‘BBC’ in Roach (2000<sup>3</sup>: 89) and by ‘BBC pronunciation’ in Roach (2009<sup>4</sup>: 70). He cites e.g. *particular* and indicates [pʁɪtkjəlɹ] (his notation) as the probable American pronunciation of the word. He obviously alludes to [ə], not [ɜ]. (See pp. 170-71 for my discussion about the relationship between [r] on the one hand and [ə] or [ɜ] on the other.)

That *CPDBA* admits [r] as well as [l], [ŋ] and [m] is obvious from the following words (*CPDBA*: xi).

When it would not otherwise be clear that an m, n, l, or r constitutes by itself a full syllable, a short vertical stroke appears beneath the letter.

Unlike *LPD3* or *EPD18*, *CPDBA* does not indicate ‘[ə] + non-syllabic’ for those words that have syllabic consonants. Thus, whereas *LPD3* and *EPD18* give e.g. [ˈlɪb ə\_r\_əl] and [ˈlɪb.ə\_r.əl], respectively, for *liberal*, *CPDBA* gives only [ˈlɪbrl] which is equivalent to [ˈlɪbr]. The notational convention *CPDBA* adopts makes a syllabicity diacritic legitimately unnecessary in [ˈlɪbrl]. On the other hand, *CPDBA* supplies a

syllabicity diacritic in e.g. [ˈnɒvəlɪst] for *novelist*, which corresponds to [ˈnɒvəlɪst]. *LPD3* indicates [ˈnɒv əlɪst] and *EPD18* [ˈnɒv.əl.ɪst].

### III. Does [r̩] occur in English? Re *CPDBA*

An instance of the occurrence of [r̩] is explicitly indicated with the use of syllabicity diacritic in *CPDBA*, as in *literal* [ˈlɪt̩r̩l]. According to the notational convention adopted in *CPDBA*, [l] occurring in word-final position in [ˈlɪt̩r̩l] is actually [l̩], therefore [ˈlɪt̩r̩l] = [ˈlɪt̩r̩l̩]. As against [ˈlɪt̩r̩l] in *CPDBA*, *EPD18* notates [ˈlɪt̩.ɹ̩.əl, ˈ-ɹ̩.əl], and *LPD3* [ˈlɪt̩.ɹ̩.əl]. The two notations [ˈlɪt̩.ɹ̩.əl] and [ˈlɪt̩.ɹ̩.əl] would lead, when both schwas are elided, to [ˈlɪt̩r̩l̩]/[ˈlɪt̩r̩l̩]. When only one or the other schwa is elided, [ˈlɪt̩.ɹ̩.əl] and [ˈlɪt̩.ɹ̩.əl] would lead to [ˈlɪt̩r̩.əl]/[ˈlɪt̩r̩.əl] (if the first ɹ̩ is elided) or [ˈlɪt̩.ɹ̩.əl]/[ˈlɪt̩.ɹ̩.əl] (if the second ɹ̩ is elided). It seems that none of [ˈlɪt̩r̩l̩]/[ˈlɪt̩r̩l̩], [ˈlɪt̩r̩.əl]/[ˈlɪt̩r̩.əl] and [ˈlɪt̩.ɹ̩.əl]/[ˈlɪt̩.ɹ̩.əl]<sup>33</sup> would be equivalent to [ˈlɪt̩r̩l] (= [ˈlɪt̩r̩l̩]) notated in *CPDBA*.

The notation [r̩] in word-final position is found in *CPDBA* for a good number of words such as *April* [ˈeɪpr̩l], *carol* [ˈkær̩l], *central* [ˈsentr̩l], *doggerel* [ˈdɒgər̩l], *mackerel* [ˈmækər̩l], *moral* [ˈmɒr̩l], *pectoral* [ˈpektər̩l], *petrel* [ˈpetr̩l], *petrol* [ˈpetr̩l], *quarrel* [ˈkwɔr̩l], *scoundrel* [ˈskaʊndr̩l], *squirrel* [ˈskwɪr̩l], etc.,<sup>34</sup> where [r̩] is equivalent to [r̩] not [r̩]. The absence of vertical stroke underneath the phonetic symbol ‘r̩’ in [r̩] seen in these examples is due to the fact that, as *CPDBA* (xi) itself says,

Such a vertical stroke would be superfluous in the cases e.g. *button* ˈbʌt̩n, *bottle* ˈbɒt̩l, *novelty* ˈnɒv̩l̩t̩, *novelette* nɒv̩l̩t̩, etc.

It would seem to me that [ˈlɪt̩r̩l] rather than [ˈlɪt̩r̩l̩] will suffice. *EPD18* notates [ˈsen.tr̩.əl] and *LPD3* [ˈsentr̩.əl]), which will lead, with the elision of the schwa, to [r̩] (< [r̩]), but not to [r̩]. One begins to wonder at this stage if the notation [ˈlɪt̩r̩l] in *CPDBA* corresponds to [ˈlɪt̩r̩l]. If not, one may wonder if the phonetic symbol ‘r̩’ does represent either [r̩] or [r̩], as the case may be.

In order to find out whether *CPDBA*’s notation [ˈlɪt̩r̩l] *literal* with [r̩] is a regular practice and not a one-off, I checked to see how *CPDBA* notates all those words (the total of 7 words, save oversight on my part) whose spelling ends with *-teral*. This is what I found.

<sup>33</sup> In all these three pronunciations there occurs ‘compression’ from the full trisyllabic form of the word (if both schwas are retained) as both [ˈlɪt̩r̩l̩]/[ˈlɪt̩r̩l̩] and [ˈlɪt̩r̩.əl]/[ˈlɪt̩r̩.əl] are disyllabic.

<sup>34</sup> But not in e.g. *Mongrel*, *ministrel*, *timbrel*, *wastrel*, *tumbrel*, etc. for which [r̩] is indicated, and e.g. *trumbrel*, *tendril*, etc. for which [r̩] is indicated.

*collateral* [tərl], *equilateral* [tərl], *lateral* [trɪ],<sup>35</sup> *multilateral* [trɪ], *quadrilateral* [tərl], *trilateral* [-tərl], *unilateral* [trɪ].

All the words are notated with either [ərl] (i.e. [ərl]) or [rɪ] (i.e. [rɪ]), not with [rɪ] (i.e. [rɪ]). How [rɪ] and [ərl] are distributed among these words is not clear to me. At any rate, it seems to me that the notation [ˈlɪtrɪ] with [rɪ] in *CPDBA* appears unique and peculiar.

I also examined all those words (the total of 4 words, save oversight on my part) whose spelling ends with *-toral*, which is a spelling somewhat similar to *-teral*. This is what I found.

*electoral* [-tərl], *pectoral* [-tərl], *pastoral* [-tərl], *littoral* [-tərl]

All 4 words are notated with [ərl] (i.e. [ərl]), with neither [rɪ] (i.e. [rɪ]) nor, again, [rɪ] (i.e. [rɪ]).

I fail to guess the precise reason why only *littoral* is notated [ˈlɪtrɪ] in *CPDBA*. Could it simply be a case of misprint?

#### IV. How does one explain the occurrence of [rɪ] (i.e. [rɪ])?

It would be interesting to speculate how the alleged occurrence of [rɪ] in [ˈlɪtrɪ] might be explained. One may wish to look at the sequence ‘[r] + [l]’ in word-final position from the point of view of ‘sonority hierarchy’. It may be thought that the consonant whose degree of sonority is the greater of the two becomes syllabic; this is why [nɪ] (not [nɪ]) and [zɪ] (not [zɪ]) occur. How about [r] and [l] occurring in this order? The relative degrees of sonority of the English consonants from minimum to maximum are as follows: [p t k] < [f θ s ʃ h] < [b d g] < [v ð z ʒ] < [m n ŋ] < [l] < [r].<sup>36</sup> (I have omitted [w] and [j]). It might therefore be suggested that [r] becomes syllabic rather than [l] in the sequence ‘[r] + [l]’ in word-final position.

Yet this is not what seems to happen. The phonetic notations given by many scholars regularly show [rɪ], not [rɪ]. That non-occurrence and non-recognition of the occurrence [rɪ] in favour of [rɪ] in *barrel*, *central*, *coral*, (all of them notated [-rɪ]) except in *littoral* (notated with [rɪ]) in *CPDBA* itself and in numerous other words may be due to the fact that, if [rɪ] is to occur, [rɪ] which is syllabic should be pronounced long, that is, long enough to form a syllable. Such being the case, [rɪ] would be practically equivalent to [ə] in *quality* that occurs in e.g. [ˈfɜðə] *further* in AmE except

<sup>35</sup> *CPDBA* additionally indicates [-tərl], which is an alternative pronunciation if not one preferentially recommended in the opinion of the compiler of *CPDBA*.

<sup>36</sup> See Jespersen (1950<sup>5</sup>: 127). One can additionally consider [tʃ dʒ] which are affricates placed between [p t k] and [f θ s ʃ h]. I am not, just here, concerned with relative sonority among the consonants *within each sub-group*.

that *it would be long* (Cf. *LPD3*: xxxi) where we read: ‘æ rhotacized [ə], in GenAm *better* (= syllabic [r])’. It is not clear whether [ɾ] (syllabic [r]) corresponds to [ə] or [ə:]). It is not easy to determine whether [ɜ] or [ɜ:] corresponds to [ɾ] in [ɾl]. Information about the phonetic nature in terms of quantity and quality of [ɜ] and [ə] in comparison with each other is surprisingly scarce. That [ɜ] occurs in accented syllables and [ə] in unaccented syllables is invariably remarked upon, but a quantitative distinction between them, if any, is not. [ɜ] and [ə] are said to parallel [ɜ] and [ə], respectively. [ɜ] (i.e. [ə:]) and [ə] are described as being two vowels which are distinguished from each other in that [ɜ] (i.e. [ə:]) is longer than [ə] (Jones 1964<sup>9</sup>: §342 and §355, 1950<sup>1</sup>: 198) but are qualitatively similar (Gimson 1962<sup>1</sup>: 116, 1970<sup>2</sup>: 122, 1980<sup>3</sup>: 124, 1989<sup>4</sup>: 123, 1994<sup>5</sup>: 116, 2001<sup>6</sup>: 125, 2008<sup>7</sup>: 130). Pairs of words like *foreword* [-wɜd] and *forward* [-wəd], and *commerce* [-mɜs] and *commas* [-məz], cited as minimal pairs by Gimson, well illustrate the quantitative difference and the qualitative similarity between [ɜ] and [ə]. Wise (1958: 119ff.) offers the following description.

The paired sounds [ɜ] and [ə] are exactly analogous in General American to the paired sounds [ɜ] and [ə] in Southern, Eastern, and British. [...] [ɜ] (always stressed) ... [ə] (always unstressed). [...] The sound [ɜ] is mid-central, tense, and unround. [...] The sound [ə] is mid-central, lax, and unround. [...] Remember that [ə] is used in unstressed syllables...

The terms *tense* and *lax* in the above quoted passage are associated with the presence and absence of accent. Though the same expression ‘mid-central’ is used for both [ɜ] and [ə], it is possible that the arch of the tongue is higher for the former than for the latter (Wise 1958: 118). This effectively seems to imply a qualitative difference between [ɜ] and [ə] in terms of the height of the tongue. There is no mention by Wise of any quantitative difference.

That [ɜ] or [ɜ:] necessarily occurs in accented syllables, as Jones and Wise among others say, is not entirely true, as [ɜ] or [ɜ:] may also occur in unaccented syllables in e.g. *pervert* (n) [ˈpɜ:vɜ:t]/[ˈpɜ:vɜ:t], *invert* (a) [ˈɪnvɜ:t]/[ˈɪnvɜ:t], *introvert* (n) [ˈɪntɹəvɜ:t]/[ˈɪntɹəvɜ:t], *expert* [ˈɛkspɜ:t]/[ˈɛkspɜ:t], *insert* (n) [ˈɪn sɜ:t]/[ˈɪnzɜ:t] (n/adj)<sup>37</sup>, etc. if not in *Herbert* [ˈhɜ:bət]/[ˈhɜ:bɜrt], *concert* (‘agreement’) [ˈkɒnʰs ət]/[ˈkɒn sɜ:t], etc. These phonetic notations are essentially taken from those found in *LPD3*, to which I have added the length mark, i.e. [ɜ:] and [ɜ:] instead of [ɜ] and [ɜ], respectively.

Problems similar to the one I raised above in connection with the occurrence of [ɾ] as in the notation [ˈlɪɾl] found in *CPDBA* do not seem to arise in cases where [l] is preceded by other consonants than [r], as in [p], [b], [f], [v], [θ], [ð], [ʃ], [ʒ], [tʃ], [dʒ], [s], [z],

<sup>37</sup> According to *LPD3*, this second pronunciation is an alternative variant in BrE. Neither *EPD18* nor *CPDBA* indicates this.

m], n]). Each of these consonants is endowed with a degree of sonority inferior to that of [l]. The only exception consists therefore in the sequence '[r] + [l]' which manifests itself as [rl], not [r̥l].

#### V. Other sources in connection with of [r̥] in word-medial position

Let's turn our attention now from *CPDBA* to some other sources of work. The occurrence of [r̥] in word-medial position in English is also acknowledged in other dictionaries than *CPDBA*.

*EPD14* (xxvii), if not earlier editions of *EPD*, explicitly recognizes [r̥] occurring in word-medial position. We read as follows.

/r̥/<sup>38</sup> is used less frequently, e.g. to show the alternatives /'meməri, 'memr̥i, 'memri/ for **memory**.

*EPD15* (xiv), *EPD16* (xiv), *EPD17* (xiv) and *EPD18* (xviii) write as follows.

Syllabic consonants are frequently found in English pronunciation [...] the consonant alone (usually one of /m, n, ŋ, l, r/ is pronounced with the rhythmical value of a syllable.<sup>39</sup>

*EPD16* (522) and *EPD17* (492), in 'information panel' on 'syllabic consonant', say:

[...] in English it appears to be possible either to pronounce /m n ŋ l r/ as syllabic consonants or to pronounce them with a preceding vowel [...]

The same passage occurs in *EPD17* (492) but not as part of the rubric 'information panel' which seems to have been abandoned. The passage also occurs in *EPD18* (576) in the newly created rubric 'Glossary'. In the passage just quoted, the example of *history* ['his.t̥r̥ | .i] is given in which [r̥] occurs in co-variation with [ər] in word-medial position.

The above cited word *memory* accordingly receives the following notation in *EPD18* (312).

['mem. ər | .i, 'r̥ | i].

<sup>38</sup> It goes without saying that I object to /r̥/ with diagonal lines in this passage (it should be [r̥]) as I do not recognize a phoneme in English notated as /r̥/ as distinct from /r/.

<sup>39</sup> Whereupon *EPD15* refers us to Roach (1991<sup>2</sup>: 78-82), *EPD16* and *EPD17* to Roach (2000<sup>3</sup>: 86-90), and *EPD18* to Roach (2009<sup>4</sup>: 68-71). In those pages, Roach treats of [l̥], [ŋ̥], [m̥], [ɲ̥] and [r̥]. Roach (1983<sup>1</sup>: 67-71) also treats of all these syllabic consonants, but *EPD14* which was still under Gimson's editorship, not Roach's, does not refer to this source.

Gimson (2001<sup>6</sup>: 208, 2008<sup>7</sup>: 222) also recognizes the occurrence of [ɹ] in word-medial position as follows:<sup>40</sup>

The /ə/ in the sequence of /ər/ is frequently reduced in rapid speech by the elision of the schwa. This may leave non-syllabic /r/ pre-vocally or it may result in a syllabic /r/. Both are possible in *conference*, *misery*, *camera*, *reverie*, *malingerer*, *binary*, *commentary*, *memory*, *victory*. ...the elision of /r/ in *parrot*, *barrel* may leave syllabic or non-syllabic /r/...

No phonetic notations of the words cited in the above quoted passage when pronounced with [ɹ] (in all the cases where [ɹ] may occur in word-medial position) are actually given by Gimson (2001<sup>6</sup>: 208, 2008<sup>7</sup>: 222). It would be interesting to compare how such pronunciations are indicated in *CPDBA*, *LPD3* and *EPD18*.

	<i>CPDBA</i>	<i>LPD3</i>	<i>EPD18</i>
<i>conference</i>	ˈkɒnfɪns	ˈkɒn fɪr_ən's	ˈkɒn.fɪr.ən's
<i>camera</i>	ˈkæmɪə, -məɹə	ˈkæmər_ə	ˈkæm.ər.ə, ˈkæm.rə
<i>reverie</i>	ˈrevəri	ˈrev ə r i	ˈrev.ər.i
<i>malingerer</i>	—	mə ˈlɪŋ ə r ə	mə ˈlɪŋ.gɪ ər.əʃ
<i>binary</i>	—	ˈbaɪn ə r li	ˈbaɪ.n.ər.li
<i>commentary</i>	ˈkɒməntri	ˈkɒm ənt_ər li	ˈkɒm.ən.t.ər.li, -trli
<i>memory</i>	ˈmeməri, -mri	ˈmem ə r_li	ˈmem.ər.li, ˈ-li
<i>victory</i>	ˈvɪktri, -təri	ˈvɪkt ə r li	ˈvɪk.t.ər.li
<i>parrot</i>	ˈpærət	ˈpær lət	ˈpær.ət
<i>barrel</i>	ˈbærɪ	ˈbær ə l	ˈbær.əl

A phonetic notation like [ˈkɒn fɪr\_ən's] in *LPD3* or [ˈkɒn.fɪr.ən's] in *EPD18* is to be read as representing four different variant pronunciations, i.e. [ˈkɒnfərənts] [ˈkɒnfɪrənts], [ˈkɒnfərɪnts] and [ˈkɒnfɪrɪnts] (*LPD3*), or [ˈkɒnfərənts] [ˈkɒnfɪrənts], [ˈkɒnfərɪnts] and [ˈkɒnfɪrɪnts] (*EPD18*).

It may not be uninteresting to cite in this connection one more example, the variant pronunciations of *veterinary*, as recorded in *LPD3*, i.e. [ˈvet\_ər ə n ə r\_li] which is the primary variant, plus [ˈvet ɪn ə r\_li] and [ˈvet ər ə n ə r\_li] which are other (non-primary) variants. Potential additions of a schwa indicated by 'ə' and/or potential omissions of a schwa indicated by 'ə' in these variant pronunciations will result, among other things, in the occurrence of [ɹ] in word-medial position. Also for *veterinary*, *EPD18* records [ˈvet.ər.ɪ.n.ər.li] and [ˈ-rə.n.ər-] while *CPDBA* indicates [ˈvetrɪnər] (*sic*) (*rechte* [ˈvetrɪnəri]) as the preferred (primary?) variant and [ˈvetnri] and [ˈvetnəri] as other variants which, I understand, according to *CPDBA*, are not preferred but need not be avoided.

<sup>40</sup> The passage to be quoted below did not occur yet in Gimson (1994<sup>5</sup>), to say nothing of Gimson (1989<sup>4</sup>) or any earlier editions.

It might be supposed *prima facie* that, of the words cited further above, *parrot* and *barrel* are something of an exception in that in *parrot*, [ɹ] would not occur since the schwa would be unelidable while, in *barrel*, [ɹ] does not occur (but [r] does) when the elidable schwa is actually elided and, consequently, there occurs [rɪ] (hence [ˈbærɪ] which *CPDBA* notates [ˈbærl]).

#### VI. The occurrence of [r] (as well as [ɹ]) before a consonant

In the light of what we read in the passage quoted above from Gimson (2001<sup>6</sup>: 208, 2008<sup>7</sup>: 222), two points interest us.

(i) There results from the elision of the schwa either a non-syllabic [r] or a syllabic [ɹ] before a vowel; e.g. [ˈkæmrə] or [ˈkæmɹə].

(ii) Either a non-syllabic [r] or a syllabic [ɹ] may occur *before a consonant*; [ˈpært] or [ˈpæɹt], [ˈbærl] or [ˈbæɹl].

The occurrence of either [r] or [ɹ] relates to word-medial position.

Further remarks are made by Gimson (2001<sup>6</sup>: 236, 2008<sup>7</sup>: 250) on this point as follows:

A more recent development concerns the sequence /r/ + *weak vowel* + C [my italic] in which the weak vowel may be elided, leaving a preconsonantal (possibly syllabic) /r/ (even though /r/ does not normally occur before a consonant in RP), e.g. *barracking* /ˈbærkɪŋ/, *Dorothy* /ˈdɒrθi/, *pterodactyl* /terˈdæktɪl/.

As [ɹ] (as well as [r]) may be said to occur before a consonant, it follows that the above example words are presumably pronounced [ˈbæɹkɪŋ] as well as [ˈbærkɪŋ], [ˈdɒɹθi] as well as [ˈdɒrθi], and [terˈdæktɪl] as well as [terˈdæktɪl]. Whether [ɹ] or [r] occurs in all these words has impact on the number of the constituent syllables of the words in question. For example, [ˈbæɹkɪŋ] are trisyllabic while [ˈbærkɪŋ] is disyllabic.

The phenomenon of ‘[ɹ]/[r] + C’ exemplified above has no doubt repercussion on a small area of phonotactics of English, notably in (if only) non-RP and at least in rapid speech.

The source of the information about the phenomenon ‘[ɹ]/[r] + C’ is found in a paper by Windsor Lewis (1979)<sup>41</sup> which is rightly referred to in a footnote by Gimson (2001<sup>6</sup>: 236; 2008<sup>7</sup>: 250). Given that, as I write these lines in 2013, thirty-odd years have elapsed since the publication of Windsor-Lewis’s paper, it seems reasonable to

<sup>41</sup> The updated version of this paper can be found in Windsor Lewis’s blog, Home Page, in 3. English Language, 4. Pre-Consonantal /r/ in General British Pronunciation.

suppose that the phenomenon ‘[ɹ]/[r] + C’ is fairly widespread and attestable even in RP in our days.

Windsor Lewis (1979) reminds us that Jones (1949<sup>7</sup>: §755) says that

In non-dialectal Southern English...no r-sound is ever used finally or before a consonant, except occasionally when ə is elided...<sup>42</sup>

To judge from his wording in the above passage, it appears that Jones does not necessarily deny the phenomenon of ‘[ɹ]/[r] + C’ attested in *dialectal* English speech.

Jones (§755 in 1960<sup>9</sup>, 1962<sup>9</sup>, 1964<sup>9</sup>) says that

Exceptionally **r** occurs before **n** and **l** in one pronunciation of words like *barren* ‘**bærn**, *quarrel* ‘**kwɔrl** (more usually ‘**bærən**, ‘**kwɔrəl**).

and he actually indicates the pronunciations of the example words ‘*barren* ‘**bærn**, *quarrel* ‘**kwɔrl** (more usually ‘**bærən**, ‘**kwɔrəl**.’ Although Jones employs the phonetic symbol **r** in his statement, he obviously allude to [ɹ] not [r], as the presence of the accent mark in his notations suggests. ‘**bærn** and ‘**kwɔrl** (or to be precise, ‘**bærn** and ‘**kwɔrl**) are disyllabic.

As for ‘C’ before which [ɹ]/[r] may occur (I will conveniently indicated [ɹ]/[r] by means of [r]), Windsor Lewis enumerates a fair number of ‘C’ with pertinent example words, among them [t] ([ˈtʃærti]), [k] ([ˈlektɹkɪ]), [f] ([ˈglɔːrfɑɪd]), [s] ([ɪmˈbærnsɪŋ]), [dʒ] ([ɪmˈkɔrdʒəbl]), [l] ([ˈbærɫ], [ˈkwɔrɫ], [ˈhærɫd]), [r] ([ˈterɪst], [ˈlaɪbrɪ], [ˈfebrɪ]), [n] ([ˈfɔrnə], [ˈaɪni], and [ˈbærn] which Windsor Lewis doubtlessly acknowledges without citing it as an example word), and [m] ([ˈkæɹml]). The various consonants mentioned and the example words cited above are only a selection of those cited by Windsor Lewis; the phonetic notations are essentially those given by him except for [r]. I have replaced by square brackets all the occurrences of diagonal bars in his paper.

In addition to the consonants mentioned above, the other consonants that Windsor Lewis refers to are: [p], [b], [tʃ], [θ], [ʃ], [h], [d], [g], [v], [ð], [z], [ŋ], [w] and [j].<sup>43</sup> It seems then that, according to Windsor Lewis, nearly the whole gamut of English consonants can occur after [r] in the phenomenon ‘[ɹ]/[r] + C’. The absence of [ʒ] in his data of examples may or may not be accidental. How about *garaging*

<sup>42</sup> This passage recurs in Jones (1964<sup>9</sup>: §755) – the 9th is the last edition of this work by Jones – where the phrase ‘In this type of English’ equivalently replaces ‘In non-dialectal Southern English’ which already appears in Jones (1949<sup>7</sup>: §755).

<sup>43</sup> Those cases that involve [j] seem somewhat strange to me. Example words Windsor Lewis cites include [ˈkæɹjɪŋ] *carrying* (for [j]) and [ˈbɔɹwɪŋ] *borrowing* (for [w]), in which [i] of [ˈkæɪ] *carry* changes to [j] and [əʊ] of [ˈbɔɹəʊ] changes to [w].

[ˈgærʒɪŋ]/[ˈgærʒɪŋ] < [ˈgærɪʒɪŋ]<sup>44</sup>? All the consonants mentioned above plus [w] and [j] – even though [w] and [j] are articulatorily non-consonantal – can alternatively be characterized as ‘non-vowels’.

In the light of what Gimson (2001<sup>6</sup>: 236, 2008<sup>7</sup>: 250) says in the passage quoted above and what Windsor Lewis says, we understand that what is indicated as /r/ in the formulation ‘/r/ + weak vowel + C’, can be [ɾ] or [r] as the case may be. For instance, *camera*, cited by Gimson may be pronounced [ˈkæmɾə] or [ˈkæmrə] or, *authority* cited by Windsor Lewis may be pronounced [ɔˈθɔɾti] or [ɔˈθɔrti] and *electrical* also cited by Windsor Lewis may be pronounced [ɪˈlektɾɪkl] (he says that [ɾ] is actually devoiced in this phonetic context, [t-k]) and possibly also [ɪˈlektrɪkl] with [r].

The occurrence of alternative pronunciations with [r] or [ɾ] of words such as those cited above results in different numbers of constituent syllables of individual words, the one with [r] (e.g. [ˈkæmrə]) being one syllable fewer than the one with [ɾ] ([ˈkæmɾə]).

When I sought Windsor Lewis’s thoughts about Jespersen’s view that [r] (but not [ɾ]) occurs only prevocally in what Jespersen (1950<sup>5</sup>: 30) termed ‘Modern English’, he said that Jespersen was probably being ‘pedagogical’. This is not surprising. Jespersen’s view was expressed in print in 1912 (he surely entertained such a view even before that date) and what he termed ‘Modern English’ in his writing was such as related to what was later to be labelled by Jones as ‘Received Pronunciation’. Much time passed from 1912 till Windsor Lewis published his paper of 1979 about the phenomenon of ‘/r/ + weak vowel + C’ in what he described as ‘contemporary General British pronunciation’ and what Gimson (2001<sup>6</sup>: 236, 2008<sup>7</sup>: 250) considered as ‘a more recent development’.

Jones (1949<sup>7</sup>: §755) first saying that ‘In non-dialectal Southern English...no r-sound is ever used finally or before a consonant’ is reminiscent of and is in keeping with Jespersen’s (1950<sup>5</sup>: 130) remark I have quoted further above (168) in which he categorically negates the occurrence of [r] before a consonant as well as in final position. Also, Jones’s qualifying additional statement (1949<sup>7</sup>: §755) that ‘Exceptionally r occurs before *n* and *l* in one pronunciation of words like *barren* and *quarrel*...’ corresponds to the phenomenon ‘/r/ + weak vowel + C’.

At the end of my lengthy discussion of the occurrence of [ɾ] and [r] in connection with Windsor Lewis’s various statements on this and other subjects, it is only fair for me to put here on record my own understanding of his position on this matter, and his agreement with it. Here follows the contents of the letters exchanged between us on 22 October 2012. I wrote:

<sup>44</sup> [ˈgærəʒ] or (for that matter) [ˈgærəʒɪŋ], with [ə] instead of [ɪ], are not entered in any of *LPD*, *EPD* and *CPDDBA*. If so, this is the only example I have encountered in which [ɾ] co-varies with [ɪɾ] rather than [əɾ].

My general understanding is as follows.

[(1)...]

(2) Where you do employ the diacritic for syllabicity placed under a consonant symbol (e.g. your notation of *literal* for which you put the diacritic under r, thus ɾ), the reader should NOT understand that the notation ɾ necessarily indicates only the syllabic as it implicitly represents either [r] (non-syllabic) or [ɾ] (syllabic), *depending on the phonetic surroundings*. Thus, your notation ˈlɪtɾl, for example, actually stands for either [ˈlɪtrl] (i.e. non-syllabic [r] followed by syllabic [l]) or [ˈlɪtɾl] (i.e. syllabic [ɾ] followed by syllabic [l]), though this latter may not normally occur.

(3) I agree with you that the notation ˈlɪtrl is adequate without a syllabicity mark under [l], according to your notational convention. Do I understand right? Or do you still disagree?

Windsor Lewis replied:

Your understanding is perfectly in accord with mine.

#### VII. The occurrence of [ɾ] in word-medial position according to Mora Bonilla (2003)

Mora Bonilla (2003: 98) also admits the occurrence of [ɾ] in word-medial position and gives examples such as the following. Many of the examples are those that occur in fast or casual speech, examples that are unlikely to be given in *EPD18*, *LPD3* and *CPDBA* which do not set out to record those occurring in fast or casual speech.

[ˈbrabrɪ] *bribery*, [ˈhɪstɪ] *history*, [ˈʃʊɡɪ] *sugary*, [ˈwɒtɪ] *watery*, [ˈvɪɡrəs] *vigorous*, [ˈselɪ] *celery*, [ˈgælɪ] *gallery*, [kɹɛkt] *correct*, [tɹɪfɪk] *terrific*.

Notice that there is no accent mark in the phonetic notations for *correct* and *terrific*, for which Mora Bonilla mentions ‘pre-tonic syllabic consonant’. Should the phonetic notations in question rather be [kɹˈɛkt] and [tɹɪˈfɪk] If so, are they likely to occur in fast or casual speech?

#### VIII. The occurrence of [ɾ] in word-medial position according to Toft (2002)

It is not clear if Toft (2002: 112) recognizes the occurrence of [ɾ] in (southern) BrE in word-medial position, as she says:

In semi-formal registers /n/, /l/ and /t/ may be syllabic, *the latter only in some rhotic dialects* [my italics].

*IX. The occurrence of [r̥] in word-medial position according to Szigetvári (2002: 140, 143)*

Szigetvári acknowledges the occurrence of [r̥] and gives examples such as the following. The phonetic notations are Szigetvári's in which no accent marks are found.

[seprət] *separate*, [næʃr̥əl] *natural*, [selr̥i] *celery*, [si:nr̥i] *scenery*, [kæmfr̥ə] *camera*, [ɑ:bitr̥i] *arbitrary*, [temp̥r̥i] / [temp̥r̥i] *temporary*.

*X. The occurrence of [r̥] in word-final position*

So far I have discussed the occurrence of [r̥] in word-medial position. We now turn our attention to the occurrence of [r̥] in word-final position.

[r̥] is generally not considered to occur in word-final position in BrE. For example, *cadre* is notated as ['kɑ:d ə, -rə] (*LPD3*), ['kɑ:.də̃, -drə] (*EPD18*) and ['kɑdə] (*CPDBA*). *LPD3* and *EPD18* thus indicate two pronunciations for this word.

Note that the downsized superscripted '̃' in ['kɑ:.də̃] in *EPD18* stands for the so-called 'linking r' and not rhotacization of the schwa, i.e. [ə̃], and therefore ['kɑ:.də̃] is equivalent to ['kɑ:d ə] when *cadre* is pronounced preconsonantly or prepausally. The use of the italic schwa 'ə̃' in ['kɑ:drə̃] in *EPD18* is puzzling,<sup>45</sup> apart from the fact that the italic schwa 'ə̃' is not expected to be used in *EPD18* as well as *EPD15*, *EPD16* and *EPD17*. Should we understand 'ə̃' to be 'ə' (as in e.g. *Linda* ['lɪndə] in which the schwa cannot be elided anyway)? Or should we understand that 'ə̃' stands for an optional (i.e. elidable) schwa, in which case we expect to see 'ə' (as in e.g. *button* ['bʌt.ən]) rather than 'ə̃'? If an optional schwa is un-elided, ['kɑ:drə̃] will be interpreted as ['kɑ:drə] but if it is elided, ['kɑ:drə̃] will be interpreted as ['kɑ:dr̥].

It is in *EPD11* that *cadre* is for the first time notated as [kɑ:dr̥] (without an accent mark for the first syllable, which consequently implies a monosyllabic pronunciation) as the primary variant, with ['kɑ:də̃] as the secondary variant and ['kædr̥i] (as the third variant?). In *EPD12*, the order of [kɑ:dr̥] and ['kɑ:də̃] is reversed ([ 'kædr̥i] stays in its former position) and this remains so in *EPD13*, but *EPD14* lists ['kɑ:də̃], ['kɑ:drə̃] (this replaces [kɑ:dr̥]) and ['kædr̥i] in this order. *EPD15* brings in some change, giving ['kɑ:də̃], [kei-], [-drə̃], which *EPD16*, *EPD17* and *EPD18* retain. The occurrence of [dr̥] (as well as [tr̥] in word-final position, is generally not recognized.<sup>46</sup>

<sup>45</sup> See *supra* fn. 27.

<sup>46</sup> See e.g. Gimson (1962<sup>1</sup>: 166, 1979<sup>2</sup>: 171, 1980<sup>3</sup>: 172, 1989<sup>4</sup>: 173) and Gimson (1994<sup>5</sup>: 157, 2001<sup>6</sup>: 172, 2008<sup>7</sup>: 182) where the possibilities of occurrence of various affricates including [tr̥] and [dr̥] in different contexts are presented in a chart. [tr̥] and [dr̥] are shown there as not occurring in word-final position, but both as occurring in word-initial position (as in *tram* and *dram*) and in word-

*CPDBA*, in addition to [ˈkɑdə], indicates [ˈkɑdr̩] with the note ‘with *unsyllabic* [*CPDBA*’s italics] *r*’. It would seem, however, that [r̩] is implicitly acknowledged to occur here (note the accent mark) despite the note ‘with *unsyllabic* *r*’, and that [ˈkɑdr̩] is actually equivalent to [ˈkɑd̩r̩], a disyllabic pronunciation, for, if not, the accent mark ‘ˈ’ would be out of place for a monosyllabic word.

The word *Sartre* is notated as [sɑ:tr̩] or [ˈsɑ:tr̩ ə] in *LPD3*. It is notated [ˈsɑ:tr̩ ə] (notice again the use of the italic schwa ‘ə’ which in my opinion should be ‘ə̃’) in *EPD18*. Does this mean that the word is pronounced [ˈsɑ:tr̩ə] or [ˈsɑ:tr̩]? If so, why not notate [ˈsɑ:tr̩ə̃]? The notation [ˈsɑ:tr̩] would be strange since there is no question of a voiceless [r̩] occurring in [sɑ:tr̩] constituting a syllable and yet the accent mark is present. *CPDBA* does not enter this word.

In notating [ʒɔ̃r̩] for *genre* – the only pronunciation recorded in *CPDBA* for this word – coupled with the note ‘non-syllabic *r*’, *CPDBA* signals a monosyllabic pronunciation in which [r̩] does not occur. For *genre*, *LPD3* notates [ˈʒɔn r̩ə], and *EPD18* [ˈʒɑ̃:n.r̩ə]. For *entendre*, *LPD3* notates [ɔ̃n ˈtɔ̃nd.r̩ə] (in the expression *double entendre*), and *EPD18* [ɑ̃:nˈtɑ̃:ndr̩ə] as a separate entry while *CPDBA* does not record this word, either as a separate entry or in the expression *double entendre*.

It is not impossible to consider that, in AmE, [r̩] occurs in word-final position if [r̩] is seen in terms of [ə̃] (a rhotacized schwa which is syllabic).<sup>47</sup> Kenyon & Knott (1951) enters [ˈkɑ:də̃] *cadre*, but [ˈʒɑnr̩ə̃] *genre*. They do not enter *entendre*.

As will have been clearly seen, the question of a possible occurrence of [r̩] in word-final position concerns the anglicized pronunciation of French words or French loanwords whose spelling ends with *-re*. French loanwords that are fully integrated into English such as *calibre* (*caliber*), *sabre* (*saber*) and *macabre* (*macaber*) are extraneous to the question as *-re* (*-er*) is pronounced with [ə] (or [ə̃] in AmE). The spelling *-re* in such words is English while that with *-er* is American.

This brings almost to a close my lengthy remarks about the question of [r̩] in word-medial position. There will, however, be occasional further references to [r̩] in the following pages.

### Successive occurrence of syllabic consonants

Practically all the words cited and discussed in this paper up to now are such that each word involves a single occurrence of a syllabic consonant.

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medial position (as in *mattress* and *tawdry*, and in *footrest* and *handrail*). No occurrence of [dr̩] as in *cadre*, when pronounced [ˈkɑ:dr̩], is indicated in the chart.

<sup>47</sup> Cf. [st̩r̩r̩] as Bloomfield (1933: 122) notates for *stirrer*, as cited Toft (2002: 112).

Mora Bonilla (2003: 98 fn. 1) cites a few examples (said to occur in fast speech) in which two syllabic consonants occur consecutively, e.g. [<sup>h</sup>dʒɛnɾɿ] *general*, [<sup>h</sup>ɔːdnɾɿ] *ordinary* and [<sup>h</sup>vetɾɿ] *veterinary*, quoting (Brown 1990<sup>2</sup>: 75) and (Roach 1991<sup>2</sup>: 82 [= 2000<sup>3</sup>: 90, 2009<sup>4</sup>: 71]).

Roach (1983<sup>1</sup>: 71, 1991<sup>2</sup>: 82, 2000<sup>3</sup>: 90, 2009<sup>4</sup>: 71) cites a few words in which two successive syllabic consonants occur, word-finally or word-medially.

Word-finally [<sup>h</sup>næʃn̩] *national*, [<sup>h</sup>lɪtɾ̩] *literal*, [<sup>h</sup>vetɾ̩] *veteran*

Word-medially [<sup>h</sup>vɪʒn̩ɾɿ] *visionary*

We recall another notation of *national* earlier presented, viz.

[<sup>h</sup>næʃ<sup>ə</sup>n ə] (*LPD3*) – [<sup>h</sup>næʃ.n.<sup>ə</sup>l, 'næʃ.n.<sup>ə</sup>l] (*EPD18*)

[<sup>h</sup>næʃn̩] corresponds to the pronunciation of *national* when [<sup>ə</sup>n], [ə] and [<sup>ə</sup>l] all turn into [n̩] and [l̩], respectively, except that [<sup>h</sup>næʃ.n.<sup>ə</sup>l] turns not into [<sup>h</sup>næʃn̩] but into [<sup>h</sup>næʃn̩l̩] in which [n̩] occurs and there occurs only one syllabic consonant [l̩].

In connection with [<sup>h</sup>lɪtɾ̩], we recall *CPDBA*'s notation [<sup>h</sup>lɪtɾ̩l̩] which we have discussed at some length. [<sup>h</sup>lɪtɾ̩l̩] is actually equivalent to [<sup>h</sup>lɪtɾ̩]. As for [<sup>h</sup>dʒɛnɾ̩] *general*, *CPDBA* notates [ˈdʒɛnɾ̩l̩].

*EPD18*'s notation of *visionary* is [<sup>h</sup>vɪʒ.<sup>ə</sup>n.<sup>ə</sup>l̩.i], which corresponds to [<sup>h</sup>vɪʒən əɾɪ, 'vɪʒənəɾɪ, 'vɪʒənɾɿ, 'vɪʒn̩ɾɿ]. Roach indicates [<sup>h</sup>vɪʒn̩ɾɿ] (see above).

In connection with [<sup>h</sup>vɪʒn̩ɾɿ], we may recall *LPD3*'s notation of *veterinary* as [<sup>h</sup>vet̩<sup>ə</sup>r ən əɾ̩.i] (primary variant), and [<sup>h</sup>vet̩ in əɾ̩.i] and [<sup>h</sup>vet̩<sup>ə</sup>n əɾ̩.i] (non-primary variants). If [<sup>ə</sup>r] and [<sup>ə</sup>n] both turn into [ɾ̩] and [n̩], respectively, the primary variant will turn into [<sup>h</sup>vet̩ɾ̩ɾɿ] and the two non-primary variants into [<sup>h</sup>vet̩n̩ɾɿ] and [<sup>h</sup>vet̩ɾ̩ɾɿ]. The primary variant will have three successive syllabic consonants ([ɾ̩ɾ̩ɾ̩]) and the two non-primary variants will have one syllabic consonant ([ɾ̩]) and two successive syllabic consonants ([n̩ɾ̩]), respectively.

It is not clear which of the potential syllabic consonants occurring in words such as cited above will turn into actual syllabic consonants. The number of actual syllabic consonants may differ in different speakers' pronunciation of the words.

Let's first consider [<sup>h</sup>vet̩<sup>ə</sup>r ən əɾ̩.i]. There are three potential syllabic consonants in this word, i.e. [əɾ̩], [ən̩] and [əɾ̩]. There are in principle eight different actualizations of the three potential syllabic consonants. They are as follows. Shown within parentheses is the number of actual syllabic consonants in the different pronunciations.

1. [ər], [ən], [ər] (0)
2. [ər], [ən], [r] (1)
3. [ər], [ŋ], [ər] (1)
4. [ər], [ŋ], [r] (2)
5. [r], [ən], [ər] (1)
6. [r], [ən], [r] (2)
7. [r], [ŋ], [ər] (2)
8. [r], [ŋ], [r] (3).

Of the 8 versions indicated above, 4, 7 and 8 represent occurrences of successive syllabic consonants, i.e. two (4, 7) or three (8). Two syllabic consonants occur in 6 but they are not consecutive.

Some of the actual syllabic consonants listed above may or may not occur in different speakers' pronunciation of *veterinary*. It is unpredictable which of such pronunciations shown above may be used by different speakers on different occasions. Nor is it completely clear to listeners which pronunciation a speaker has used on a particular occasion. In this connection Roach (1983<sup>1</sup>: 71, 1991<sup>2</sup>: 82, 2000<sup>3</sup>: 90, 2009<sup>4</sup>: 71) makes interesting remarks as follows. I will quote his words at some length.

It is important to remember that it is often not possible to say with certainty whether a speaker has pronounced a syllabic consonant, a non-syllabic consonant or a non-syllabic consonant plus ə. For example, the word 'veteran' given above could be pronounced in other ways than **vetrŋ**. An RP speaker<sup>48</sup> might instead say **vetrən**, **vetərŋ** or **vetərən**.

*EPD18* notates ['vet.ər.ən, -rən] for *veteran*, which should correspond to ['vetərən, 'vetərən, 'vetrŋ, 'vetərŋ, 'vetrən], though Roach, in his above quoted passage, leaves out ['vetrŋ], a case of two successive syllabic consonants. Note that **vetrən** (= ['vetrən]) that Roach instances in the above quoted passage results from the elision of the schwa between [t] and [r] *without producing* [r] and is therefore a case of 'compression'.

Straight after the above quoted passage, Roach goes on to make interesting remarks about the relation between phonetic notation and varied pronunciations such as he is concerned with here.

The transcription makes it look as if the difference between these words was clear; it is not. In examining colloquial English it is often more or less a matter of arbitrary choice how one transcribes such a word. Transcription has the unfortunate tendency to make things seem simple and more clear-cut than they really are.

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<sup>48</sup> The expression 'An RP speaker' occurs in Roach (1983<sup>1</sup>: 71, 1991<sup>2</sup>: 82) but is replaced by the expression 'A BBC speaker' in Roach (2000<sup>3</sup>: 90, 2009<sup>4</sup>: 71).

### Non-syllabic consonants preceded by a vowel other than the schwa

Words that involve syllabic consonants may have alternative pronunciations in which vowels *other than a schwa* plus a non-syllabic consonant occur, for instance, [ɹ] in e.g. *axil* ['æks ɪl, -ɹl] which has [-ɹl] as well (*LPD3*) or [ʊ] in e.g. *awful* ['ɔ:f ʊl, -ʊl] which has [ʊl] as well (*LPD3*).

I checked the occurrence of [ɹ] in word-final [ɪl] that co-varies with word-final [ʊl]. This is how I went about my investigation. I consulted a rhyming dictionary<sup>49</sup> to obtain a list of all words ending with *-il* (*anvil*, *axil*, *April*, etc.), 66 words in all, which were whittled down to 47 for my investigation.<sup>50</sup> They were then checked for me to see as to how *LPD3* and *EPD18* indicate the alternative pronunciations, i.e. [ɪl, ʊl], of these words. It goes without saying that the syllable [ɪl] or [ʊl] must be preceded by a syllable with an accented vowel, so that words like *fulfil* and *mil* did not qualify for my investigation. The results were as follows.

(i) Words with [ɪl] as the only form (e.g. *anvil*,<sup>51</sup> *apostil*,<sup>52</sup> *codicil*, *daffodil*, *fusil*,<sup>53</sup> *nihil*, *orchil*, *pistil*, *postil*,<sup>54</sup> *strigil*, *tormentil*,<sup>55</sup> *tranquil*<sup>56</sup>).

(ii) Words with [ɪl] as the primary variant and [ʊl] as the other variants (e.g. *anil*, *anvil*,<sup>57</sup> *axil*, *chervil*,<sup>58</sup> *dentil*, *fibril*,<sup>59</sup> *jonquil*,<sup>60</sup> *lentil*,<sup>61</sup> *Tamil*,<sup>62</sup> *tumbril*,<sup>63</sup> *vigil*,<sup>64</sup>).

(iii) Words with [ɪl] as the third variant and [ʊl] as the first and second variants (e.g. *April*, *basil/Basil*, *cavil*, *chervil*,<sup>65</sup> *civil*, *council*, *devil*,<sup>66</sup> *evil*, *fossil*, *imperil*, *lentil*,<sup>67</sup>

<sup>49</sup> Walker (1942). I own a copy of this dictionary in my private collection. I have inherited this copy from the late Peter (Arthur Desmond) MacCarthy who scribbled 'P. MacCarthy Dec 1943' on the flyleaf. It could be any of the four reprints available previous to 1943.

<sup>50</sup> Of the 66 words, 19 are not entered in *LPD3* or *EPD18* or in either. As a result a total of 47 words remained to be checked.

<sup>51</sup> According to *EPD18*. *LPD3* lists [ɪl] and [ʊl], hence three co-variants.

<sup>52</sup> This word is entered in *EPD18* but not in *LPD3*.

<sup>53</sup> This word is entered in *EPD18* but not in *LPD3*.

<sup>54</sup> This word is entered in *EPD18* but not in *LPD3*.

<sup>55</sup> This word is entered in *LPD3* but not in *EPD18*.

<sup>56</sup> This word is entered as being pronounced ['træŋk wɪl, -wəl] in *LPD3* but ['træŋ.kwɪl] in *EPD18*. According to *LPD3*, this word belongs to (ii). According to *EPD18*, this word belongs to (i).

<sup>57</sup> According to *LPD3*. According to *EPD18*, this word belongs to (i).

<sup>58</sup> According to *EPD18*. According to *LPD3*, this word belongs to (iii).

<sup>59</sup> ['faɪb rɪl, -rəl] (*LPD3*). ['faɪ.brɪl, -brəl] (*EPD18*). According to *EPD18*, this word does not involve [ɹ].

<sup>60</sup> This word is entered as being pronounced ['dʒɒŋk wəl, -wəl] in *LPD3* and ['dʒɒŋk.wɪl, -wəl] in *EPD18*.

<sup>61</sup> ['lent ɪl, -ɹl] according to *LPD3*. The order of the two variants is the exact reverse of that in *LPD3* and *EPD18*.

<sup>62</sup> According to *EPD18*, but according to *LPD3* this word belongs to (iii).

<sup>63</sup> Spelled in this way in *EPD18* only, which also enters a variant spelling *tumbrel* for which only [-brəl] is given.

<sup>64</sup> ['vɪdʒ ɪl, -əl] (*LPD3*), ['vɪdʒ. əl, -ɹl] (*EPD18*).

*nostril, pencil, peril, pistil, pupil, stencil, Tamil,*<sup>65</sup> *tendril,*<sup>66</sup> *tonsil, tumbrel/tumbril,*<sup>70</sup> *utensil, until,*<sup>71</sup> *vigil, weevil).*

I also checked the occurrence of [ʊ] in word-final [ʊl] that co-varies with word-final [ɹl]. I again consulted the afore-mentioned rhyming dictionary to obtain a list of all words ending with *-ul* (*armful, artful, etc.*). There were a total of 179 words, which were whittled down to 141 for my investigation.<sup>72</sup> I then checked how *LPD3* and *EPD18* indicate the alternative pronunciations, i.e. [ʊl, ɹl]. All the words ending with *-ful* that I obtained have the suffix *-ful*. The only word among those I checked that does not end with *-ful* is *mogul/Mogul*. The results of my investigation were as follows.

(i) [ʊl] as the only form (e.g. *armful, basinful, bellyful, boxful, brimful(l),*<sup>73</sup> *bucketful, capful, cupful, glassful, handful, mouthful, pailful, panful, plateful, pocketful, potful, prayerful, sackful, shovelful, spadeful, spoonful, thimbleful.*

(ii) Significantly, no words were found with [ʊl] as the first variant and [ɹl] as the other variants.

(iii) [ʊl] as the third variant with [ɹl] as the first and second variants (e.g. *artful, awful,*<sup>74</sup> *bagful, baleful, baneful, bashful, beautiful, boastful, bountiful, changeful,*<sup>75</sup> *careful,*

<sup>65</sup> According to *LPD3*. But according to *EPD18*, this word belongs to (ii).

<sup>66</sup> According to *LPD3*. [-ɪl] is not recorded for this word in *EPD18*, so that this word belongs to none of (i), (ii) and (iii).

<sup>67</sup> According to *EPD18*. According to *LPD3*, this word belongs to (ii).

<sup>68</sup> According to *LPD3*. According to *EPD18*, this word belongs to (ii).

<sup>69</sup> This word is entered as being pronounced [ˈtendr əl, -ɪl] in *LPD3* and [ˈtend.rɪl, -drɪl] in *EPD18*. Therefore this word belongs to (iii) according to both *LPD3* and *EPD18*. Notice that syllable boundary for this word is indicated at different places in the two dictionaries. A short summary of different syllabifications in English words in *EPD18* and *LPD3* is given in ‘Tutorial: THE SYLLABLE’ on the internet at [www.personal.rdg.ac.uk/~llsroach/phon2/mitko/syllable.htm](http://www.personal.rdg.ac.uk/~llsroach/phon2/mitko/syllable.htm), which can alternatively be visited by typing ‘Roach, the syllable’ in the bar.

<sup>70</sup> *LPD3* lists these two variant spellings, *tumbrel* and *tumbril*, in this order as a single conjoined headword and indicates both [brəl] as the first and second variants and [brɪl] as the third variant for both *tumbrel* and *tumbril*, which therefore belong to (iii) according to *LPD3*. On the other hand, *EPD18* enters *tumbrel* and *tumbril* as two separate successive headwords in this order and indicates only [ˈtʌm.brɪl] for *tumbrel* and no third variant with [ɪl] – therefore this word belongs to none of (i), (ii) and (iii) according to *EPD18* – and [ˈtʌm.brɪl, -brɪl] for *tumbril*, which therefore belongs to (ii), according to *EPD18*.

<sup>71</sup> Both *LPD3* and *EPD18* indicate the occurrence of only [ɪl] for this word. For this reason, this word is not involved in any co-variation with [əl] and [ɪ] and belongs to (i). This done, *LPD3* (864) adds the remark: ‘– also occasionally, in STRESS SHIFT ENVIRONMENTS (,until ‘now), ‘ʌn tɪl’. *EPD18* (523) appends a Note to the same effect, saying: ‘There is an occasional form /ˈʌn.tɪl, -tɪl/ in stress-shift environments (e.g. ,until ‘death), but this is rare.’, so in this case this word belongs to (ii).

<sup>72</sup> Of the 179 words, 38 are not entered in *LPD3* or in *EPD18* or in either. As a result the total of 141 words remained to be checked.

<sup>73</sup> This word is pronounced [ˌbrɪmˈfʊl] as indicated in both *LPD3* and *EPD18*.

*cheerful, deceitful, despiteful,<sup>76</sup> direful, disdainful, disgraceful, disrespectful, distasteful, distrustful, delightful, distressful, doleful, doubtful, dreadful, dutiful, easeful, eventful, fateful, faithful, fanciful, fearful, fitful, forceful, forgetful, fretful, frightful, fruitful, gainful, gleeful, graceful, grateful, guileful, harmful, hateful, heedful, healthful, helpful, hopeful, hurtful, ireful, joyful, lawful, lustful, manful, merciful, mindful, mirthful, mistrustful, mogul/Mogul,<sup>77</sup> mournful, needful, neglectful, painful, peaceful, pitiful, playful, plentiful, powerful, pushful, regardful, regretful, remorseful, reproachful, resentful, restful, resourceful, respectful, reposeful, rightful, rueful, scornful, shameful, sinful, skillful, slothful, sorrowful, spiteful, successful, tactful, tasteful, thankful, thoughtful, trustful, truthful, tuneful, useful, vengeful, wakeful, watchful, wasteful, worshipful, willful, wishful, wistful, woeful, wonderful, wrathful, wrongful, youthful.*

(N.B. *prideful, masterful, revengeful, soulful* and *tearful* have only [ɹ], so that these words do not fit in with any of (i), (ii) and (iii). In connection with *vengeful* it is to be noted that *vengeful* falls under (iii).)

One may wonder why words ending with the suffix *-ful* in (i) have single variants with [ʊl] while those in (iii) have [ʊl] as the third variants and [ɹl] as the first and second variants. A possible explanation<sup>78</sup> seems to be that while the suffix *-ful* in words in (i) means ‘as much as will fill’ (in e.g. *spoonful, armful, basinful*), the same suffix in words in (iii) means ‘full of’, ‘characterized by’ (in e.g. *shameful, beautiful, thoughtful*), ‘tending to’ or ‘able to’ (*wakeful, harmful, mistrustful*). Indeed, the stems in words in (i) denote concrete objects observable to the eye like a spoon, a basin, a belly, etc. – with the exception of *prayer* (in *prayerful*) – and as a result a concrete imagery is easily evoked of e.g. a spoon, a basin, a belly, etc. being full of sugar, water, air etc. On the other hand, the stems in words in (iii) denote abstract entities like *shame, beauty, thought*, etc., the sole exception being *bagful*<sup>79</sup>, and *-ful* has the sense of ‘a high degree of abstract quality or entity’. It will be interesting to see if the distinction between (i) and (iii) will subsist in days to come. The fact that the co-variation pattern [ʊl] (first variant) ~ [ɹl] (second variant) ~ [ɹl] (other variants) is totally absent (at least according to the results of my investigation) is significant in that the association of *-ful* with, on the one hand, the sense of ‘as much as will fill’ and, on

<sup>74</sup> This word is pronounced in this way when it means ‘terrible’, but with the literal meaning ‘awe-inspiring’, it is pronounced [ˈɔːfʊl], according to both *LPD3* and *EPD18*.

<sup>75</sup> This word is entered in *EPD18* but not in *LPD3*.

<sup>76</sup> This word too is entered in *EPD18* but not in *LPD3*.

<sup>77</sup> These words should best be considered apart from the rest of the words in this category. They have variant pronunciations with [-ɹl, -ɔl, -Al] in both *LPD3* and *EPD18*.

<sup>78</sup> Drawn from *RHD* (774).

<sup>79</sup> Unlike all the other words which are adjectives, *bagful* is a noun. It should be mentioned that *baleful* which means ‘pernicious’ is an adjective and derives from the now archaic nouns *bale* ‘evil’ and is etymologically distinct from *bale* ‘a large package’. This makes *bagful* an exception which one might expect to belong to (i).

the other, the sense of ‘characterized’ are too distinct in the usage of English speakers for them to be lost.

The occurrence of [ɹ] as the first and second variants and that of [ʊ] as the third variant in (iii) where a large number of words are attested is interesting. It may be conjectured that, as the sense of ‘characterized by’ is progressively diminished in the speaker’s mind, the change occurs in which the quality of a full vowel [ʊ] is weakened to a schwa, which is then elidable, i.e. [ʊ] > [ə] > [ɪ].

I have referred above to the link between just two vowel letters (i.e. *i* and *u*) and the occurrence of [ɹ] and [ʊ], respectively, in words that involve syllabic consonant [ɹ]. I dispense with investigating on similar lines the link between the letters *e*, *a* and *o* and the occurrence of [ɹ], that is, in *el* (e.g. *bushel*, *lintel*, *rondel*) or *le* (e.g. *bottle*, *mettle*, *idle*); in *al* (e.g. *hospital*, *mammal*, *metal*); and in *ol* (e.g. *gambol*, *idol*, *pistol*).<sup>80</sup>

There are a few exceptional cases in which a special relationship exists between vowel letters and syllabic consonants that differs from that indicated above ((i) to (v)).

For example, with the letter *o*, *Capitol* (cf. *Capitol Hill*), for example, is pronounced [ˈkæp ɪ t̬ɹ, -tɹ] (*LPD3*). (Only [ˈkæp.ɪ.t̬ɹ] is given in *EPD18* and [ˈkæpɪtɹ] (= [ˈkæpɪtɹ]) in *CPDBA*.) However, in the case of e.g. *atoll*, which is pronounced [ˈæt ɒl]/[əˈtɒl] (*LPD3*, *EPD18*, *CPDBA*) but not [-ɹ], [ɒl] is the only pronunciation. Similarly, in words like *benzol*, *parasol*, *phenol*, etc. which have [ɒ] (corresponding to the letter *o*) in [ɒl] in the unaccented syllables, [ɒl] does not co-vary with [ɹ].

As for the letter *a*, this corresponds in principle to the schwa in [ɹ] which are the first and second variants with no further variant. However, there are a few exceptions like *Neanderthal* [ni ˈænd ə tɑ:l, -θɑ:l, -ət ɹ] (*LPD3*) or [ni ˈæn.də. tɑ:l, -θɑ:l, -t̬ɹ]<sup>81</sup> (*EPD18*). Thus [ɑ:l] or [ɔ:l] are presented as the first variant while [ɹ] as the second (in *LPD3*) and the third variant (in *EPD18*).

Another example is *Rosenthal* (i) [ˈrəʊz ə n θɔ:l, -ɹ] and (ii) [-tɑ:l] (*LPD3*) or [ˈrəʊ.zən.tɑ:l, -θɔ:l] (*EPD18*). The notations given by *LPD3* and *EPD18* are interestingly different from each other. *LPD3* indicates different pronunciations in respect of two different individuals who bear this name ((i), (ii)). One of the pronunciations is such that [ɔ:l] is the first variant and [ɹ] the second and third variants. Note that [tɑ:l] is not indicated for (i). The other pronunciation is such that [ɑ:l] is the only pronunciation for (ii). On the other hand, *EPD18* indicates [-tɑ:l] and [-θɔ:l] as two alterna-

<sup>80</sup> As already said towards the end of fn. 24, I personally always pronounce all such words with [ɹ], not with [ə].

<sup>81</sup> I believe that [ni ˈæn.də...] in *EPD18* should rather be [ni ˈænd...]. See [ni ˈænd...] in *LPD3*, which is correct.

tive pronunciations of equal status, so that either [-ɑ:l] or [-ɔ:l] is the only pronunciation. [ɹ] which *LPD3* indicates for (i) (but not for (ii)) is not shown in *EPD18*. I conjecture that much the same variety exists for *-thal* in *Lilienthal* (not entered in either *LPD3* or *EPD18*) as it does for *-thal* in *Neanderthal* and *Rosenthal*. The variety in the pronunciations for *-thal* in *Rosenthal* (and most possibly in *Lilienthal*) in English is not surprising since these are German anthonyms. As for *Neanderthal*, it has a somewhat complicated etymology but also derives ultimately from a German anthonym (Joachim Neander). In all these names, *-thal* derives from *Tal* ‘valley’. As *Tal* is pronounced with [a:] in German (not [ɑ:]), the rendition of *-thal* in English with [ɑ:] in these words of German origin is nearest to the autochthonous pronunciation, and the process of anglicization is seen in [ɑ:l] > [ɑ:] > [ɔ:l] > [ɹ]. We also see that [l] along with [ə] is the commonest rendition of *-al* in *-thal* in these words (as in *lethal*, *zenithal*, *betrothal*, *azimuthal*).

In a large number of words there are no vowel letters to correspond to the elidable schwa. Some examples are as follows: *axolotl*<sup>82</sup>, *bos'n/bo's'n*<sup>83</sup>, *logarithm*, *rhythm*, and a large number of words whose spelling ends with *-ism* like *catechism*, *cephalism*, *communism*, *criticism*, *cynicism*, *iodism*, *prism*, *realism*, *scepticism*, *schism*, *syllogism*, *snobbism*, *vocalism*, *witticism*, etc.

### The occurrence of the syllabic consonants in word-initial context

I said earlier that syllabic consonants do not occur in word-initial position. However, such examples as *had a lot* [hæd|ɒt], *had another* [hædɪ|ʌðə] and *good enough* [gʊd ɪ|ʌf] (in this example Wells puts a space between [gʊd] and [ɪʌf]) pronounced with the elision of the schwa are given in Wells's blog (21 December 2011). Note that he happens not to put any accent marks in these examples. In giving these examples, Wells says:

For syllabic consonants in initial position, all I can offer are cases such as *had a lot*, *had another* if pronounced with no schwa...

If Wells had put the accent marks, he would probably have notated the above examples as follows: [hæd'ɒt], [hæd'ɪʌðə] and [gʊd'ɪʌf] (as he was supposed to be exemplifying cases in which the syllabic consonants occur in word-initial position) rather than [hæd|ɒt], [hædɪ|ʌðə] and [gʊd ɪ|ʌf]. If we are to go along with Wells's supposed notation in which we added the accent marks, we would understand that,

<sup>82</sup> In Spanish, *axolotl* is a scientific name for a certain kind of water animal which is normally called *ajolote* [axo'lote] in Spanish. The English word *axolotl* ‘one type of salamander’ (< Sp. *axolotl* < Nāhuatl *āxōlōtl* (singular) or *āxōlōmeh* () ‘water monster’) is pronounced [ˌæks ə 'lɒt ɹ, ' - - - ] (*LPD3*), [ˌæks ə .lɒt. ɹ] (*EPD18*).

<sup>83</sup> This example is somewhat suspect purely from an orthographical point of view, but it is nevertheless listed here. *LPD3* gives [ˈbəʊs ɹn] and *EPD18* [ˈbəʊs.ɹn], that is, the same pronunciation.

unlike any examples of syllabic consonants occurring in word-medial or word-final position (which we have seen up to now), examples of syllabic consonants occurring in word-initial position show that these syllabic consonants occur in *accented* syllables and, as a consequence, it would seem justified to talk about ‘word-initial position’ since ‘[ŋ] = [ən]’ corresponds to e.g. *an-* of *another* and *en-* of *enough*. It would seem that ‘[l] = [əl]’ in [hædʌlʔt]/[.hædʌlʔt] corresponds to a *l-* of *a lot* and may not point to the occurrence of [l] in word-initial position.<sup>84</sup> Actually, Wells’s supposed notation in question is in contradiction with his own notation when, at an earlier date, Wells (1995: 409) gives a few other examples as follows: *get along* [ˈgetlʔŋ], *write another* [ˌraɪtŋʔʌðə] and *better not* [ˌbetŋʔt]. This notation is in keeping with the well-known fact that a syllabic consonant is always preceded by a syllable containing an accented vowel and is uncontroversially acceptable. The syllabic consonants [l] in [ˈgetlʔŋ] and [ŋ] in [ˌraɪtŋʔʌðə], to which we can add [hædʌlʔt], [ˌhædŋʔʌðə] and [ˈgʊdŋʔʌf] (my notation, not Wells’s), do occur in word-initial position. However, [ŋ] in [ˌbetŋʔt] cannot be said to occur in word-initial position as the elided schwa which is the final segment of [ˈbetə] belongs to *better*.

Does a syllabic consonant occur in initial position of an *utterance*? One such example may be [ˈŋ-kjʊ]<sup>85</sup> < [ˈθæŋ kjʊ] *thank you!* when said with a rising tune. In connection with this example, I should perhaps also mention the syllabic consonant [k̩] in [ˈk̩kjʊ]<sup>86</sup> which occurs in one of the variant pronunciations of *thank you!* when said with a rising tune.<sup>87</sup>

<sup>84</sup> I wish to point out, however, that a non-standard single form *alot* (< *a + lot*), pronounced like *allot*, has often been witnessed in our days. Fowler (1996<sup>3</sup>: 45) mentions *alot* occurring in informal correspondence in AmE. I myself have sometimes noticed its occurrence on the internet. If so, [l] in [hædʌlʔt]/[.hædʌlʔt] can be regarded as occurring in word-initial position.

<sup>85</sup> Cf. Jones (§1068 in 1960<sup>9</sup>, 1962<sup>9</sup>, 1964<sup>9</sup>). Curiously, Jones puts [ŋ-kjʊ] in the verbal explanation, i.e. with secondary accent mark against [ŋ], but primary accent mark in the accompanying intonation pattern, thus [ˈŋ-kjʊ]. Previous editions (including 1950<sup>7</sup> and 1956<sup>8</sup>) have [ˈŋ-kjʊ] (with primary accent) in both the verbal explanation and the intonation pattern. Be this as it may, I do not think that this difference between primary accent and secondary accent for [ŋ] in question has any significant auditory effect in [ŋ-kjʊ] (*Thank you!*) said with a rising tune.

<sup>86</sup> Cf. Jones (fn. 27 to §1068 and fn. 1 to §909 in 1960<sup>9</sup>, 1962<sup>9</sup>, 1964<sup>9</sup>). In particular, Jones (fn. 1 to §909 in 1960<sup>9</sup>, 1962<sup>9</sup>, 1964<sup>9</sup>) unambiguously uses the expression ‘a syllabic **k**’ for the first [k] in [ˈk̩kjʊ] and actually adds a syllabicity diacritic, thus [ˈk̩kjʊ]. Exactly the same indication occurs in Jones (1956<sup>8</sup>), though I have been unable to confirm the first occurrence of the indication in (an) earlier edition(s).

<sup>87</sup> *LPD3* (817) says; ‘There are also casual forms such as ‘hæŋk ju, ‘ŋk ju’. Note that a diacritic for the syllabicity for [ŋ] is not specifically employed in ‘ŋk ju’.

### Compression

A few words are in order at this point about what is called ‘syncope’ which corresponds to *one* of the types of ‘compression’.

A syllabic consonant (e.g. [ɹ] as in [ˈmetɹ]) co-varies with ‘[ə] + non-syllabic consonant’ ([əɹ] in [ˈmetəɹ]). However, this may not always be the case. For example, co-variation [ɹ] ~ [əɹ] occurs in *hustle*, but *hustling* may be pronounced in such a way that [ˈhʌsɹɪŋ] (with [ɹ]) may co-vary with [ˈhʌsɪŋ] (with [ɪ]), in other words, [ɹ] ~ [ɪ].<sup>88</sup> In this example, [ˈhʌsɹɪŋ] is trisyllabic, while [ˈhʌsɪŋ] is disyllabic. Compression is said to occur in [ˈhʌsɹɪŋ] > [ˈhʌsɪŋ], in which process the number of the constituent syllables is reduced by one. Thus, the elision of [ə] does not necessarily result in the syllabic consonant. Another example of compression is [səˈpəʊz] (disyllabic) > [ˈspəʊz] (monosyllabic). The compressed form is generally noted [ˈspəʊz] as here, with non-syllabic [s]. Referring to this case, *LPD3* says as follows in the entry for *suppose*.

—but the phrase I suppose is often aɪˈspəʊz

The accent mark here should be taken as an utterance-level accent, not a word-accent as in [səˈpəʊz] when occurring on its own. The point in this example is that [səˈpəʊz] does not change to [ˈspəʊz] with the syllabic [ʃ]. If it did, the phonetic notation would rather be [ʃˈpəʊz] with the first unaccented syllable [ʃ]. The problem of whether [s] or [ʃ:] is supposed to occur in such a case is implicitly suggested in some examples adduced by Beaken (1971) which is quoted by Wells (1982: 321).

[f] as in [fˈgɒʔ] (*forgot*), [ʃ] as in [ʃˈsed] (*she said*), [ŋ] as [ŋˈmatʃ] (*not much*).<sup>89</sup>

Notice that Beaken — and Wells as well — indicates [f], [ʃ] and [ŋ] each of which is either a syllabic consonant or, as Wells somewhat non-committally puts, ‘a kind of syllabic consonant’ (1982: 321). Is it or is it not a syllabic consonant in each such case? If it is, then there cannot be said to occur compression in that the number of the constituent syllables remains the same. If it is not, then [f] not [f], [ʃ] not [ʃ], [ŋ] not [ŋ], should be chosen, and the examples concerned should be notated [fˈgɒʔ], [ʃˈsed] and [ŋˈmatʃ] (cf. [ˈspəʊz] as Wells himself puts for the compressed form for *suppose*).

What happens in the case of [f], [ʃ] and [ŋ] (and in fact in those of any other syllabic consonants) is that the consonants in question are lengthened, thus [f] = [fː],

<sup>88</sup> [ˈhʌsəlɪŋ] also occurs (what Windsor Lewis describes as a fussy pronunciation for ‘General British of our generation’; see *supra* fn. 20. Compare such a case with *metal* which has [əɹ] but where the elision of the schwa always results in [ɹ], not [ɪ], i.e. \*[metɪ].

<sup>89</sup> I have dealt with [ŋ] earlier but what is interesting here is that it occurs in an example like this in word-initial *cum* utterance-initial position.

[ʃ] = [ʃ:], and [ŋ] = [ŋ:], thus forming syllables on their own but without being accented. This is explicitly stated by Laver (1994: 264-5) who writes:

[...] the prolongation of a fricative element, which in effect takes over the role of syllable nucleus.

and gives two relevant examples (*solicitor*, *support*) as follows. The specification of 'formal utterance' and 'informal utterance' is important as being relevant to what I will say further below.

*Orthographic form* No solicitor will ever support that view

*Formal utterance* [nəʊ sə'lısıtə wıl 'evə sə'pət ðət vju]

*Informal utterance* [nəʊ ʃ:'lıstəɪ | 'evə ʃ:'pət ðət vju]

Laver appropriately indicates both the phonetic symbol for the syllabic [ʃ] and the length mark (representing the prolongation of [ʃ]) and does not place an accent mark before [ʃ:]. Laver clearly reckons with 'a syllabic consonant', not 'a kind of syllabic consonant' as Wells says. He says that [ʃ:] of [ʃ:'pət] is longer than [s] in the pronunciation of *sport*. According to Laver, [ʃ:'pət] is disyllabic and [ʃ:] on its own forms a syllable.

Laver's (1994: 147) further example is [ʃ] in *operatic society* is [ɒpəɪətɪk ʃsəɪtɪ] in informal speech style. Notice that in this example Laver does not add a length mark, thus [ʃ] not [ʃ:], in [ʃsəɪtɪ].

We can answer a question at this juncture: is there compression in [sə'lısıtə] (in formal utterance) > [ʃ:'lıstəɪ] (in informal utterance), and in [sə'pət] (in formal utterance) > [ʃ:'pət] (in informal utterance)? One is inclined to answer affirmatively in the former word (4 syllables - 3 syllables) but negatively in the latter (2 syllables - 2 syllables). Reduction of the schwa does not necessarily result in compression.

We may mention here in connection with [ʃ] that Bloch and Trager (1942: 28) cites the interjection *pst*. *LPD3* enters *psst* [ps, pst] (no indication that [ʃ] occurs here) while *EPD18* enters neither *pst* nor *psst*. Hall (1964: 62) cites *pst* whose pronunciation he indicates as [pʃt] with [ʃ]. Pike (1962: 145) cites *pst!*, *sh!*, *mhm*, and what he refers to as 'the isolated unreleased [b]<sup>90</sup>.

One further example I wish to adduce is *police* pronounced [pli:s] in informal speech in which the schwa in [pəli:s] in formal speech style is elided. Should it be notated ['pli:s]? There is no question of a syllabic [p] occurring in what I notate as

<sup>90</sup> In citing these examples, Pike adds: 'All contoids are *syllabic contoids* when they are functioning as syllable crests.' Incidentally, I believe that what Pike mentions as 'the isolated unreleased [b]' occurs in such a pronunciation of *probably* as ['prɒbɪli] which is seen to be equal to ['prɒbbɪli] because [b] = [bb]. The first of the geminate [bb] is unreleased.

[pli:s] or ['pli:s]. This seems to be an instance of compression without resulting in a syllabic consonant.

As is explicitly indicated, syllabic consonants like [ʃ] and [f̥] mentioned above – and other consonants than those I have discussed further above – tend to occur in casual speech or rapid speech, as mentioned by various phoneticians. Laver's specification 'informal utterance' is precisely what it relevantly means. The dissimilar phonetic notations of the same orthographic form, one in respect of 'formal utterance' and the other in respect of 'informal utterance' are appropriate not only in connection with the occurrence of syllabic or non-syllabic consonants but on a few other points.

I earlier mentioned three-way co-variation, '[ə] + non-syllabic consonant' ~ 'syllabic consonant' ~ 'non-syllabic consonant'. Since compression largely tends to happen in informal utterance (in casual speech or in fast speech), the said co-variation may appositely be regarded as taking place not in the same speech style but between two speech styles.

The consonants like [s], [f] and [ʃ] (categorizable as 'obstruents') whose syllabic counterparts [ʃ̩], [f̥̩] and [ʃ̩] I have seen above are unlike [l], [n], [m], [ŋ] and [r] (categorizable as 'sonorants') whose syllabic counterparts [l̩], [n̩], [m̩], [ŋ̩] and [r̩] are much oftener mentioned in phonetics literature in connection with syllabic consonants and which I have dealt with further above. There are more 'obstruent' consonants which can function as syllabics.

Haplology is said to give rise to syllabic consonants, both sonorants and obstruents. Of course I am not here alluding to cases like *haplogy* (< *haplology*), a well-known jocular word known among linguists, *morphonology* (< *morphophonology*) and *Missippi* (< *Mississippi*) which do not result in syllabic consonants we are concerned with here. The following are some well-known examples:

[ˈlaɪbrɪ] ([f̥] occurs) < [ˈlaɪbrəri], [ˈfebɪrɪ] ([f̥] occurs)<sup>91</sup> < [ˈfebruəri], [pəˈtɪkjʊlɪ] ([l̩] occurs)<sup>92</sup> < [pəˈtɪkjʊləli], [ˈprɒblɪ] ([b] occurs)<sup>93</sup> < [ˈprɒbəbli], [ˈregjʊlɪ]<sup>94</sup> < [ˈregjʊləli].

<sup>91</sup> *EPD18* gives, among other variant pronunciations of this word, [ˈ-juːr.i, ˈ-ju.ri, jɪr.i]. The first pronunciation represents haplology whereby [rɒ] is dispensed with, while the last indicates the occurrence of [f̥] which results from the elision of the schwa.

<sup>92</sup> *LPD3* notes in the entry for *particularly*: '—in casual speech sometimes also -ˈtɪk jəl.i'. This effectively points to the possible occurrence of [l̩] which results from the elision of the schwa.

<sup>93</sup> However, *LPD3* notes in the entry for *probably*: '—In casual speech sometimes ˈprɒb li'. From this notation it does seem clear to me that compression occurs with or without resulting in the occurrence of [b].

<sup>94</sup> *LPD3* characterizes this pronunciation as 'considered incorrect'. However, as noted in *LPD3* (xx), such a pronunciation is in widespread use.

A question may be asked concerning the cases of ['prɒblɪ]. Does ['prɒblɪ] result from the elision of [ə] in ['prɒbəblɪ]? If so, ['prɒblɪ] is seen to be equal to ['prɒbbɪ] because [b] = [bb].

The articulation of [b], [k], [ʃ], [f] and [ʒ], etc, is such that the hold stage of a plosive (e.g. [b]) or a fricative (e.g. [ʃ]) is sustained long enough for it to form a syllable ([b], [ʃ]) and that this sustension is continued into the hold stage of the following same plosive ([b]) or fricative ([ʃ]) which is subsequently released. The duration of [b], [k], [ʃ], [f] and [ʒ] would be double that of [b], [k], [s], [f], [ʒ], comparable to what happens elsewhere, at the boundary between words, as in *club bar*, *book case*, *six sails*, *tough fight*, *fish shop*.

#### **The schwa in 'schwa + non-syllabic consonant' that co-varies with a syllabic consonant**

Roach (1983<sup>1</sup>: 68, 1991<sup>2</sup>: 79, 2000<sup>3</sup>: 87, 2009<sup>4</sup>: 69) considers it as 'a mispronunciation [in RP] to insert a vowel between the l and the preceding consonant' in the case of 'common' [Roach's word] words like *bottle*, *muddle* and *struggle*. On the hand, according to him, this injunction against the insertion of a vowel before a non-syllabic consonant does not apply in the case of what he considers as 'less common and more technical' words, and he cites *missal* ['mɪsəl/'mɪsəl] and *acquittal* [ə'kwɪtəl/ə'kwɪtəl]. (I have vicariously added the accent marks.) Roach's recommendation here seems to be the contrary of that made by Wells who notates ['mɪs əl] (not ['mɪs əl]) and [ə 'kwɪt əl] (not [ə 'kwɪt əl]). It is reminded that Roach does not resort to the distinction indicated by Wells with the use of 'ə' and 'ə'.

Roach (1983<sup>1</sup>: 69, 1991<sup>2</sup>: 80) says that 'To pronounce a vowel before the nasal consonant would sound strange (or at best overcareful) in RP'. He replaces 'RP' (1993<sup>1</sup>: 69, 1991<sup>2</sup>: 80) by 'BBC' (2000<sup>3</sup>: 88) and further replaces 'BBC' by 'the BBC accent' in Roach (2009<sup>4</sup>: 69). He thus (strangely to me) disallows the schwa in e.g. *pigeon* and *Christian* (words which he cites as relevant examples). *LPD3*, on the contrary, allows (and recommends) the schwa by notating ['pɪdʒ ən] and ['krɪs tʃən]. Jones (§277 in 1950<sup>3</sup> and 1956<sup>4</sup>) too, contrary to Roach, includes [tʃ] and [dʒ], among other consonants, after which [ŋ] frequently occurs, citing e.g. *merchant* (hence ['mɜ:tʃnt]) and *sergeant* (hence ['sɜ:dʒnt]). On the other hand, no objection will be raised to Roach disallowing [l] + [ŋ] or (implicitly) [l] + [n] as well (e.g. *sullen*) and saying that a schwa must intervene between these two sounds, hence ['sʌl.ən].

## PART II: PHONOLOGICAL ASPECTS OF THE SYLLABIC CONSONANTS IN ENGLISH

The phonological status of the syllabic consonants in English has been discussed and solutions offered by various researchers. The question of the phonological status of syllabic [l], [m] and [n], i.e. [l̥], [m̥], [n̥], in English has drawn the attention of a number of researchers. The researchers' attention has invariably been attracted by the co-variation [ə] ~ [l̥], [ən] ~ [n̥], and [əm] ~ [m̥], that is, that the occurrence of a syllabic consonant [l̥], [n̥] or [m̥] is always matched by that of '[ə] + a non-syllabic consonant' (i.e. [l], [n] or [m]). There are some pairs of words in English such that the members of each pair differ from each other in their pronunciation in that, for instance, one member has [l̥] and the other [l] at a corresponding point, the remaining sounds and the accentual patterns being identical.<sup>95</sup> These pairs are what are commonly known as 'minimal pairs' or 'near-minimal pairs'. Jones (1959: 137-8) gives a number of examples of such pairs of words (as pronounced, as he specifies, by Jones himself). He just enumerates these pairs of words but I will add some details to them where necessary.

*codling* (< *cod* + *ling*) [l̥] vs. *coddling* (*coddle* + *ing*) [l]<sup>96</sup>  
*suckling*<sup>97</sup> (< *suck* + *ling*) [l̥] vs. *suckling* (< *suckle* + *ing*) [l]  
*nestling*<sup>98</sup> (< *nest* + *ling*) [l̥] vs. *nestling* (< *nestle* + *ing*) [l]  
*finely* (< *fine* + *ly*) [l̥] vs. *finally* (< *final* + *ly*) [l]  
*gambling* (< *gamble* + *ing*) [l̥] vs. *gambolling*<sup>99</sup> (< *gambol* + *ing*) [l]

The case of *gambling* vs. *gambolling* may call for a comment. Unlike *suckling* (< *suckle* + *ing*) and *nestling* (< *nestle* + *ing*) which have [l̥], *gambling* (< *gamble* + *ing*) is cited by Jones as having [l] not [l̥], but *gambolling* (< *gambol* + *ing*) also cited by Jones has [l̥]. *LPD3* gives ['gæm b<sup>ə</sup>l] for both *gamble* and *gambol* and, what's more, adds (= *gamble*)<sup>100</sup> in the entry *gambol*. *EPD18* too gives an identical form for both words, i.e. ['gæm.b<sup>ə</sup>l], which is equivalent to ['gæm b<sup>ə</sup>l] in *LPD3*. As for *gambling*, *LPD3* gives ['gæm blɪŋ] only, in agreement with Jones, while for *gambol(l)ing* it gives ['gæm b<sup>ə</sup>lɪŋ]. *EPD18*, for *gambling*, gives ['gæm.b<sup>ə</sup>lɪŋ] and ['gæm.blɪŋ], the

<sup>95</sup> Gimson (2008<sup>7</sup>: 215) points out, quite rightly, that [l̥] in *codling* is the so-called 'clear l' while *coddling* may have [l̥] as well as [l] which is the so-called 'dark l'. Though this difference proves irrelevant to the task of determining the phonological status of [l̥], this valid information is not necessarily given by many others in citing such pairs of words.

<sup>96</sup> According to *LPD3*'s notation, (*coddling* < *coddle* + *ing*) is pronounced ['kɒd<sup>ə</sup>lɪŋ], i.e. ['kɒd<sup>ə</sup>lɪŋ] · ['kɒd<sup>ə</sup>lɪŋ], while (*codling* < *cod* + *ling*) is pronounced ['kɒd<sup>ə</sup>lɪŋ].

<sup>97</sup> 'suckling child'.

<sup>98</sup> 'young bird in the nest'.

<sup>99</sup> The spelling with *-ll-* here is of course British.

<sup>100</sup> The equal symbol '=' here means that the two different words are pronounced in the same way.

latter being definitely in accord with Jones, and for *gambolling* it gives [ˈgæm.bəlɪŋ]. This means that, according to both *LPD3* and *EPD18*, *gambolling* can have not only [l] as Jones notes but also [ɹ] (or [l]) as well.<sup>101</sup> Consequently, the case of *gambling* vs. *gambolling* may not be entirely valid.

Jones notes *finally* with [l] only, but both *LPD3* and *EPD18* notate [ɹ], that is, both [əl] and [l].

Jones cites *Kipling* [l] vs. *crippling* (< *cripple* + *ing*) [l]. This case may appear to show both [l] and [l] occurring at a corresponding point in an identical context, viz. [p - ɪ] and the pair of words here constitutes a near-minimal pair.

Jones also cites *sicklist* [l] vs. *ficklest* [l] (< *fickle* + *st*). This case too may appear to show both [l] and [l] occurring at a corresponding point in an identical context, this time, [ɪk - ɪst], and the pair of words here may appear to constitute a near-minimal pair. However, there is a problem. The prosodic contexts are not the same for *sicklist* and *ficklest* in that a virtual pause is present at the boundary between *sick* and *list* while it is present at the boundary between *fickle* and *est*, so that the two words are not, strictly speaking, even a near-minimal pair, still less a minimal pair.

Jones cites, strangely, *twaddly* (< *twaddle* + *ly*) and *twaddle* as *both* having [l], so that they are not relevant to [l] vs. [l] here.

Jones cites *oddly* (< *odd* + *ly*) as having [l], so this example is irrelevant to [l] vs. [l]. *EPD18* agrees with Jones about *oddly* having [l].

Elsewhere, Jones (§439 in 1950<sup>1</sup>, 1962<sup>2</sup> and 1967<sup>3</sup>) cites *medlar* [-l-] vs. *meddler* [-l-], and *Putney* [-n-] vs. *buttoning* [-n-].

As I already mentioned (162), Roach (1983<sup>1</sup>: 71, 1991<sup>2</sup>: 81-2) cites *Hungary* [-ɹ-] vs. *hungry* [-r-], and *adulterous* [-ɹ-] vs. *adultrous* [-r-], adding that [ɹ] and [ər] are also alternative pronunciations instead of [-ɹ-]. This means that the members of each pair are not necessarily distinguished from each other by virtue of [ɹ] vs. [r] and consequently do not constitute minimal pairs. Roach (2000<sup>3</sup>: 90) retains *Hungary* [-ɹ-] vs. *hungry* [-r-] with the same remark about [ɹ] and [ər] being alternative pronunciations instead of [-ɹ-], but drops the pair *adultrous* vs. *adulterous*, without any accompanying comment. The pair *adultrous* vs. *adulterous* are subsequently definitively absent in Roach (2009<sup>4</sup>: 70). This amounts to Roach himself abandoning these two pairs as minimal pairs.

Meanwhile, in *EPD15*, *EPD16*, *EPD17* and *EPD18*, the notation of *Hungary* and *hungry* is [ˈhʌŋ.gɹi] and [ˈhʌŋ.ɡri], respectively, which again means this pair of words are not necessarily distinguished from each other through [-ɹ-] vs. [-r-] and do

<sup>101</sup> Gimson (2008<sup>7</sup>: 215) notates [ˈgæmbəlɪŋ] ~ [ˈgæmbɪŋ] (*gambolling*) in this order as does *LPD3*, but not [ˈgæmbəlɪŋ] which *LPD3* does.

not form minimal pairs. *EPD15*, *EPD16*, *EPD17* and *EPD18* notate *adultrous* [ə'dʌl.tʁ̩.es, ɪs, -əs] and *adulterous* [ə'dʌl.tʁ̩.əs]. For the same reason as I mentioned for *Hungary* and *hungry*, *adultrous* and *adulterous* are not necessarily minimal pairs.

*LPD3* notates *Hungary* ['hʌŋ gəɹ i] and *hungry* ['hʌŋ |gri], which means that the distinction [-ɹ-] vs. [-ɹ̥-] is not crucial for the two words, as *Hungary* is pronounced with [-ɹ-] as well as [-ɹ̥-].

Of a number of minimal or near-minimal pairs of words in whose pronunciation the difference [l] and [ɭ] occurs at a corresponding point in an identical context, this difference is alleged to be linked to the distinction between the members of each pair. We will retain the following examples for further consideration in an attempt to determine the phonological status of syllabic consonants. We will consider [l] and [ɭ] here.

*codling* (< *cod* + *ling*) [l] vs. *coddling* (< *coddle* + *ing*) [ɭ]  
*suckling* (< *suck* + *ling*) [l] vs. *suckling* (< *suckle* + *ing*) [ɭ]  
*nestling* (< *nest* + *ling*) [l] vs. *nestling* (< *nestle* + *ing*) [ɭ]  
*lightning* [n] vs. *lightening* (< *lighten* + *ing*) [ɳ]  
*medlar* [l] vs. *meddler* (< *meddle* + *er*) [ɭ]  
*Putney* [ˈpʌtɳi] vs. *buttoning* [ˈbʌtɳɪ(ŋ)] (< *button* + *ing*) [ɳ]

Though not a minimal pair like any of the five other pairs, it is perfectly justified to retain *Putney* vs. *buttoning* with practically the same validity as for the others since the difference between [p] in [ˈpʌtɳɪŋ] and [b] in [ˈbʌtɳɪŋ] can in no way be thought to influence the occurrence of [n] rather than [ɳ] in *Putney* or that of [ɳ] rather than [n] in *buttoning*. In other words, the substitution of [p] by [b] (\**Butney*) would be thought to retain [n], and the replacement of [b] by [p] (\**buttoning*) would be thought to retain [ɳ]. The change from voicelessness ([p]) to voicedness ([b]) or vice versa in these words would not affect the occurrence of [n] in the former word and that of [ɳ] in the latter.

Jones's (1950<sup>1</sup>: §31) well-known definition of the phoneme runs as follows.

...A PHONEME IS A FAMILY OF SOUNDS IN A GIVEN LANGUAGE WHICH ARE RELATED IN CHARACTER AND ARE USED IN SUCH A WAY THAT NO ONE MEMBER EVER OCCURS IN A WORD IN THE SAME PHONETIC CONTEXT AS ANY OTHER MEMBER. [Jones's capitals]

A corollary of this definition is that sounds occurring in the same phonetic context belong to different phonemes. As applied to [l] and [ɭ] (related in character and occurring in the same context) as in [ˈkɒdlɪŋ] *codling* and [ˈkɒdɭɪŋ] *coddling*, the two laterals (one of them being non-syllabic and the other syllabic) are to belong to two different phonemes which one may wish to indicate as /l/ and /ɭ/. If so, the two words would be phonologically notated /ˈkɒdlɪŋ/ and /ˈkɒdɭɪŋ/, respectively. Yet

Jones himself would not come out with these phonological identities and I know of no other researchers (myself included) that do.<sup>102</sup> Jones (1950<sup>1</sup>: §301) makes no attempt to offer a solution about the phonological status of [ɹ̥] or any other syllabic consonants in English except to say that e.g. [ɹ̥] differ from [ɹ] by being ‘long’ while [ɹ] is ‘short’ and conjecturably assigning that [ɹ̥] and [ɹ] to a single phoneme, presumably /ɹ/.

In reality, pairs of English words like *codling* (< *cod* + *ling*) and *coddling* (< *coddle* + *ing*), *suckling* (< *suck* + *ling*) and *suckling* (< *suckle* + *ing*), *nestling* (< *nest* + *ling*) and *nestling* (< *nestle* + *ing*), *lightning* and *lightening* (< *lighten* + *ing*), *medlar* and *meddler* (< *meddle* + *er*), and a number of others frequently cited as forming putative minimal pairs, are not really minimal pairs, as I will explain further below.

If [ɹ̥] and [ɹ], or [ŋ̥] and [ŋ], are not to be taken as belonging to two different phonemes, i.e. /ɹ/ and /ɹ̥/, respectively, or /ŋ/ and /ŋ̥/, respectively, are [ɹ̥] and [ɹ], or [ŋ̥] and [ŋ], to be interpreted as ‘allophones’? They freely occur in the same context, i.e. ‘free variants’ of one and the same phoneme,<sup>103</sup> that is, ‘free variants’, whatever it is supposed to be? As it turns out, however, this is a contradiction in terms since, according to Jones (1950<sup>1</sup>: 7 fn.15),

Members of a phoneme have also been termed “conditioned variants.” They are also said to be in “complementary distribution”.

[ɹ̥] and [ɹ] are not conditioned variants and certainly do not occur in complementary distribution.

The only remaining term, if not the concept, that Jones has in his arsenal is ‘variphone’ (see Jones 1950<sup>1</sup>: §628ff.) but this term is totally inapplicable to the case of [ɹ̥] and [ɹ], as one would be convinced when reading Jones’s pertinent passages about a ‘variphone’.

It is evident that a phonological analysis whereby to determine the phonological status of [ɹ̥] is at a deadlock if it is based on the phoneme as a group of phonetically similar and complementarily distributed sounds, as is attributable to Jones and post-Bloomfieldians. We need to look for some other mode of phonological analysis to accomplish our task.

Besides, we need to ask ourselves if it is right to commute e.g. [ˈkɒdɹ̥ɪŋ] and [ˈkɒdɹɪŋ] with each other, since this commutation assumes the difference between [ɹ̥]

<sup>102</sup> I am aware that e.g. Wells (1965: 111) suggests the possibility of setting up /ɹ̥, ŋ̥, m̥, ɹ̥/ as opposed to /ɹ, n, m, ŋ, r/ in English for a minority of speakers for whom there exist such pairs of words as [bat̥d] *battled* vs. [bat̥d] *battened*, but this is outside the scope of my present paper.

<sup>103</sup> However, we cannot use here the term ‘free variant’, whose concept and term is found in Jones (§601 in 1950<sup>1</sup>, 1962<sup>2</sup>, 1967<sup>3</sup>). The meaning of what Jones otherwise calls ‘diaphone’ is inapplicable in our present consideration.

and [ɪ], which in turn should lead us to establish /l/ and \*/l/ in English. I have already said that this will be rejected by all. This analysis, if at all accepted, would lead to /'kɒdlɪŋ/ vs. /'kɒdɪŋ/.

Martinet gives an apposite recommendation to phonological analysts to the effect that commutative items should be such that there is no potential pause (F. *pause virtuelle*, as opposed to actual pause = F. *pause actuelle*) inside them (cf. Martinet 1960<sup>1</sup>: III-5, III-6 and III-7). This is so even if the prosodic feature is identical in the commutative items. We return here to e.g. ['kɒdɪŋ] *coddling* (< *coddle* + *ing*) and ['kɒdlɪŋ] *codling* (< *cod* + *ling*). Potential pauses do occur between *coddle* and *ing* and between *cod* and *ling*. Disregard of Martinet's recommendation would result in establishing two phonemes \*/l/ and /l/ in English, which is unacceptable. I myself referred at some length to Martinet's recommendation (Akamatsu 2000: 50-51), quoting the relevant passages from Martinet (1960<sup>1</sup>: III-5, III-6 and III-7). As well as the above examples, I additionally cited in Akamatsu (2000: 51) the examples of *night-rate* and *night rate* (to which I could have added *Nye trait*) and subsequently also in Akamatsu (1992: 63) in order to explain in detail the infelicitous consequence of phonological analysis of these triplets in which potential pauses occur at different points inside these words. One would end up, wrongly, establishing three phonemes, i.e. /t<sup>h</sup>/ (*Nye trait*), /t<sup>h</sup>/ (*nitrate*) and /t/ (*night-rate*), on account of three degrees of aspiration. As is well known, the example of these triplets have been cited for a long time by post-Bloomfieldians who, instead of the concept and term of 'potential pause', employ those of 'internal open juncture', which they regard as a phoneme.<sup>104</sup>

Writing in a different parlance and without using the term 'potential pause', Jones (1931: 60) cites the example of the pair '*blackened eye* (**blækt ai**)' and '*black tie* (**blæk tai**)', as he presents them, which he says was suggested by E[dith E.] Quick [c. 1902–1947]. He says that, in (**blæk tai**), (t) is aspirated while in (**blækt ai**), (t) is unaspirated, i.e. [t<sup>h</sup>] and [t].<sup>105</sup> Jones (1931: 61-4) gives more relevant examples pertaining not only to [t<sup>h</sup>]/[t] but also to [p<sup>h</sup>]/[p] and [k<sup>h</sup>]/[k]. Jones (1944: 128-9) advises against performing phonological analysis whereby to establish the phonemes of a given language by working on data larger than words and gives the example of the pair, *plump eye* ['p<sup>h</sup>lʌmp 'ai] and *plum pie* ['p<sup>h</sup>lʌmp 'p<sup>h</sup>ai].<sup>106</sup> Disregard of Jones's injunc-

<sup>104</sup> For this reason, the concept of 'potential pause' should not be confused with that of 'internal open juncture'.

<sup>105</sup> Jones (1931: 61) gives a few other relevant examples concerning [t] and [t<sup>h</sup>] such as *missed eight* and *Miss Tate*, *worst act* and *worse tact*, *just able* and *chess table*, and *dressed eye* and *dress tie*.

<sup>106</sup> The example of *plum pie* vs. *plump eye* is subsequently repeated in Gimson (1962<sup>1</sup>: 50, 1970<sup>2</sup>: 50-1, 1980<sup>3</sup>: 55, 1989<sup>4</sup>: 52), but not in Gimson (1994<sup>5</sup>), Gimson (2001<sup>6</sup>) and Gimson (2008<sup>7</sup>) which are editions revised by Alan Cruttenden. I used the example *plum pie* vs. *plump eye* in Akamatsu (1992: 63) to explain the importance of performing the commutation test on minimal or near-minimal multiplets that do not contain potential pauses.

tion would lead to establishing two phonemes /p/ and /p<sup>h</sup>/ in English as, according to Jones, two different sounds occurring in the same context are assigned to different phonemes, a corollary of his definition of the phoneme (unless, of course, they are free variants, members of a variphone or members of a diaphone). Jones (§34 in 1950<sup>1</sup>, 1962<sup>2</sup> and 1967<sup>3</sup>) emphasizes the necessity of defining phonemes by limiting oneself to consideration of stretches not longer than ‘word’ by which he means ‘simplexes’ and refers us back to Jones (1944: 127-32) and to Jones (1956<sup>8</sup>: §1095 [= 1960<sup>9</sup>: §1095]) where he talks about the necessity of indicating where accent falls and cites the pair *black tie* and *blacked eye*, though here without *explicitly* warning against establishing in English two phonemes /t<sup>h</sup>/ (*re black tie*) which is aspirated and /t/ (*re blacked eye*) which is unaspirated. Jones (1956a: 100), returning to this subject, cites ‘*grei’tai* (grey tie) and ‘*greit’ai* (great eye), as he notes them, and makes the same point.

Jones’s injunction concerns confronting syntagms (e.g. *plump eye* and *plum pie*) with each other or two items with each other one of which is a complex (= a compound or a derivative) (e.g. *nitrate* vs. *night-rate*, *lightning* vs. *lightening*) or both of which are complexes (e.g. *coddling* vs. *codling*). On the contrary, he recommends confronting simplexes (which Jones calls ‘words’) with each other. Jones does not mention ‘potential pause’ but, as simplexes do not contain potential pauses, we can safely regard Martinet’s recommendation and Jones’s injunction as being ultimately the same.

Let’s bring back the list of pair of words given earlier on and try to apply Martinet’s and Jones’s recommendations to them. I reproduce the list of words below.

*codling* (< *cod* + *ling*) [l] vs. *coddling* (< *coddle* + *ing*) [l̥]  
*suckling* (< *suck* + *ling*) [l] vs. *suckling* (< *suckle* + *ing*) [l̥]  
*nestling* (< *nest* + *ling*) [l] vs. *nestling* (< *nestle* + *ing*) [l̥]  
*lightning* [n] vs. *lightening* (< *lighten* + *ing*) [n̥]  
*medlar* [l] vs. *meddler* (< *meddle* + *er*) [l̥]  
*Putney* [n] vs. *buttoning* [n̥] (< *button* + *ing*) [n̥]

To consider the first pair of words, the commutable items in *codling* will be [kɒd] *cod* and [lɪŋ] *ing*, but, more importantly for the present purpose, the commutable items in [ˈkɒdɪŋ] *coddling* will be [ˈkɒdɪ] *coddle* and [ɪŋ] *ing*. (We will leave aside [ɪŋ] *ing*.) Confronting [ˈkɒdɪ] with [kɒd] in no way contributes to establishing the phonological status of [l̥].

[l̥] in [ˈkɒdɪ] *coddle* can hardly commute with any consonants simply because they rarely occurs word-finally after [d]. No English words are attestable such as \*[ˈkɒdp], \*[ˈkɒdb], \*[ˈkɒdt], \*[ˈkɒdd], \*[ˈkɒdk], \*[ˈkɒdg], etc. Though no perfect minimal multiplet seems to exist, a possible near-minimal multiplet is available such as [ˈkɔːdŋ] *cordon*. Confronting [ˈkɒdɪ] with [ˈkɔːdŋ] characterizes [l̥] as “lateral”, no

more than that. The occurrence of other consonants after pre-final [d] is also rare in English (but cf. *cods* [-dz]).

Commutation is a matter of examining sounds on the paradigmatic axis with a view to finding out their phonological status. Attempts to identify the phonological status of [ɫ] through commutation clearly fail.

There are situations in which [ɫ] and [l] can be directly confronted with each other in an identical phonetic context and we can ascertain that [ɫ] is syllabic (said to be long by phoneticians) and [l] non-syllabic (said to be short). We fully acknowledge that their direct confrontation does not lead to identifying two phonological entities, i.e. two single phonemes, which one might be tempted to represent as /l/ and /l/, respectively, as the difference between [ɫ] and [l] evidently does not relate to distinguishing two different words. Witness e.g. ['hʌsɫɪŋ] vs. ['hʌslɪŋ] in which [ɫ] and [l] can be directly confronted with each other in an identical phonetic context ['hʌs - ɪŋ], without [ɫ] and [l] being regarded as realizations of two separate phonemes. The same can be said, *mutatis mutandis*, for instance, of [ŋ] and [n], which can be directly confronted with each other in an identical phonetic context ['bʌt - ɪŋ] as in ['bʌtŋɪŋ] vs. ['bʌntɪŋ].

In citing above pairs of pronunciations involving [ɫ] and [l], or [ŋ] and [n], I take this opportunity to re-emphasize the importance of taking note of the occurrence of non-syllabic consonants (where they do occur) in co-variation with 'syllabic consonants' and '[ə] + non-syllabic consonant', that is, what I referred to as 'three-way variation'. The occurrence of non-syllabic consonants in such cases results of course from syncope.

Attempts having failed to determine the phonological status of syllabic consonants (we have seen [ɫ]) by analyzing relevant phonetic data on the paradigmatic axis, we need to seek another strategy, that is, to conduct our analysis on the syntagmatic axis.

The characteristic of syllabic consonants that is traditionally mentioned is their 'extra duration' (when compared with the corresponding non-syllabic consonants). Specifically with regard to [ɫ], it is sometimes mentioned that it is a velarized lateral, the so-called 'dark' [ɫ] in *codling* ['kɒdɫɪŋ], which is inherently longer than a palatalized lateral, the so-called 'clear' [l] in *codling* ['kɒdlɪŋ].

Jones (§ 439 in 1950<sup>1</sup>, 1962<sup>2</sup>, 1973<sup>3</sup>) does emphasize the fact that [ɫ] is much longer than [l], which fact, if taken advantage of, might lend itself in a certain way to determining the phonological identity of [ɫ]. Incidentally, Jones's words 'much longer' is too vague for us to understand 'how long' or 'by what discrete degree of length'. Is [ɫ] to be understood to stand for [l:], [l::], [l:::], etc.?

As [ɫ] co-varies with [əɫ], it would be helpful to note the following remark (McArthur 1996: 927):

...in pronouncing [l̥] the time needed to pronounce the schwa is transferred to the following consonant...

As the schwa in [ə] is transferred to [l], it stands to reason that [ə] which constitutes a syllable on its own confers syllabicity (hence the ‘duration’ associated with syllabicity) on [l], with the result that the syllabic lateral, i.e. [l̥], is created. This means that the phonological status of [l̥] is such that it has both the feature of ‘lateral’ and the syllabicity feature of [ə]. When I say ‘the syllabicity feature of [ə]’ here, I do not allude to *all* the features of [ə], i.e. all the articulatory characteristics traditionally describable in terms of the position of the tongue in the oral cavity, the position of the velum and the state of the glottis.<sup>107</sup> The vocalic resonance in not only [l̥] but also [ŋ], [m̥], [ɲ], [l̥] and [r̥] need not necessarily reflect some determinate quality of [ə]. It is not relevant if these syllabic consonants have differing resonances. [ə] in English enjoys a fairly wide ‘field of dispersion’<sup>108</sup> as is shown by the various highest positions assumed by *the main part of the tongue* and plotted on a quadrilateral diagram (see e.g. Jones §§356-70 in 1949<sup>7</sup>, 1956<sup>8</sup>, 1964<sup>9</sup>; Gimson 2008<sup>7</sup>: 132, Figure 23 (Variants of /ə/)). The differing resonances that [l̥], [ŋ], [m̥], [ɲ] and [r̥] manifest are conditioned not only by the various sub-types of [ə] but also by different contexts in which these syllabic consonants occur. The most noticeable and consequently the most talked about is the resonance of [l̥] (whose resonance is that of the so-called ‘dark l’) in [t̥l̥], [d̥l̥], [n̥l̥], [m̥l̥], etc. occurring before actual pause or before potential pause when preceded by [t], [d], [n], [m], etc. The various resonances of [ŋ], [m̥], [ɲ] and [r̥] occurring in other contexts are different and nearer ‘central’. The critical point is that the actual resonances heard in the syllabic consonants matter less than the fact that syllabicity is transferred to the non-syllabic consonants and change them into the corresponding syllabics.

But how does the transfer of [ə] of [ə] actually happen articulatorily? Let’s first take the examples of [ˈbɒtə] > [ˈbɒt̥l̥]. As is well known, during the process from [tə] to [t̥l̥], the transition from [t] to [l̥] is clear-cut in that there is no scope for [ə] which is to be transferred to [l̥] to intervene between [t] and [l̥] due to the lateral position of [t]. When the transfer of [ə] is achieved, the feature of syllabicity has passed to [l̥], while the articulatory feature of [ə] (*central* vocal quality) cannot be passed on since, in addition to velic closure, complete apico-alveolar closure is formed with simultaneous posterodorsal velarization while unilateral or bilateral aperture is allowed.<sup>109</sup> Therefore only the syllabic characteristic of [ə] coalesces with [l̥], which re-

<sup>107</sup> It will be guessed in advance that, in determining the phonological status of [ʒ], [ʃ] and [ʒ̥], earlier mentioned, it will be necessary to reckon with [ə], i.e. a voiceless schwa.

<sup>108</sup> For the concept of ‘field of dispersion’ (F. ‘champ de dispersion’), see Martinet (1955: 47).

<sup>109</sup> The oral cavity is bilabially closed in the case of [m̥], by dorso-velar closure in the case of [ŋ], by apico-alveolar closure for [n̥], and by close lamino-postalveolar in the case of [r̥]. All this prevents *articulatory* feature of [ə] (*central* vocal quality) from being passed on to the non-syllabic consonants in question.

sults in [l̥] ([t̥l̥] in ['bɒt̥l̥]). Thus the process of the transfer of [ə] to [l̥] results in the fusion of [ə] and [l̥] into [l̥].

The concomitant but separate phonetic characteristics of [l̥] which is a single segment are laterality and syllabicity. It is syllabicity of [l̥] that is traditionally referred to as 'long' as compared with [l], a non-syllabic.

It is now for us to determine the phonological status of [l̥], [ɹ], [ɱ], [ŋ] and [ʃ]. To this end, we first perform the commutation test which is necessary, among other things, to elicit the distinctive units (be they phonemes, archiphonemes) of English in terms of relevant features.<sup>110</sup> I will show below only that part of the commutative series consisting of multiplets, minimal or near-minimal, that are pertinent to eliciting those consonant phonemes that are associated with [l̥], [ɹ], [ɱ], [ŋ] and [ʃ] in which we are particularly interested in this paper.<sup>111</sup> (CS = Commutatives Series)

CS1	CS2	CS3	CS4	CS5	CS6	CS7
[pɹ-]	[-ɹt]	['ʌ-ə]	[sɹ-]	['prɪz-]	[-s-]	[-sə-]
[pɹp]	[pɹt]	['(d)ʌpə]	[sɹp]	—	[-sp]	[-səp]?
[fɪb]	[bɹt]	['(r)ʌbə]	[sɹb]	—	—	[-səb]?
[pɹt]	[tɹt]	['ʌtə]	[sɹt]	—	[-st]	[-sət]?
[pɹd(l)] <sup>112</sup>	[dɹt]	['ʌdə]	[sɹd]	—	—	[-səd]?
[pɹk]	[kɹt]	['(s)ʌkə]	[sɹk]	—	[-sk]	[-sək]?
[pɹg]	[gɹt]	['(s)ʌgə]	[sɹg]	—	—	[-səg]?
[pɹɪm]	[mɹt]	['(s)ʌmə]	[sɹm]	['prɪzm]	[-sm]	[-səm]
[pɹɪn]	[nɹt]	['æɪnə]	[sɹn]	['prɪzn]	[-sn]	[-sən]
[pɹɪŋ]	—	['hæɪŋə]	[sɹŋ]	—	—	[-səŋ]?
[pɹl]	[lɹt]	['kʌlə]	[sɹl]	[frɪzl]	[-sl]	[-səl]
—	[ɹt]	['bʌrə]	—	—	—	—

The commutation test reveals that [l̥]'s that occur in CS1, CS2, CS3, CS4 and CS7 and [l] that occur in CS5 and CS6 are realizations of the phoneme which we define as "lateral" and indicate as /l/.

It might be queried whether it is justified to include consideration of [l̥] in CS5 and CS6 along with [l] in CS1, CS2, CS3, CS4 and CS7 for the establishment of /l/ in

<sup>110</sup> We dispense here with details of this commutation test, for which we refer the reader to Akamatsu (1992: 60-80) or Akamatsu (2000: 41-57).

<sup>111</sup> The first three commutative series are taken, in part, from the three commutative series found in Akamatsu (2000: 54). The multiplets in CS1, CS2 and CS3 were originally presented orthographically, but are presented here in their phonetic forms. CS4, CS5, CS6 and CS7 are newly added here as being relevant to our investigation into the phonological status of the syllabic consonants.

<sup>112</sup> [pɹd(l)] (*pid(d)le*) is a near-minimal multiplet which can validly be included in CS1. The addition of [l] to [pɹd] is thought to cause no change of [d] to any other consonant.

the face of the fact that [ɹ] is syllabic while [l] is non-syllabic. There are two reasons for the justification of my course of action adopted.

(1) In eliciting the distinctive units of the second articulation, i.e. the phonemes and the archiphonemes, of English, what I presented above as [m̩], [n̩] and [l̩] in CS5 and CS6 will normally be presented as [m], [n] and [l], i.e. as non-syllabic consonants, thus ['prɪzm], ['prɪzn] and ['frɪzl]. As has already been seen, [m̩], [n̩] and [l̩] are a concomitant combination of [m] and syllabicity, that of [n] and syllabicity, and that of [l] and syllabicity, respectively. Syllabicity is a prosodic element which can be separated from [m̩], [n̩] and [l̩] in a phonological analysis in performing the commutation test. The commutation test is conducted to elicit the phonematic units (phonemes, archiphonemes) so that, during the course of the commutation test, the identification of [m̩], [n̩] and [l̩] (syllabic consonants) as such is irrelevant to the analyst who would not even suspect that what he notates [m], [n] and [l] in CS5 and CS6 are in fact [m̩], [n̩] and [l̩]. I have deliberately notated [m̩], [n̩] and [l̩] above, instead of [m], [n] and [l], only because of our specific interest in this paper in the subject of syllabic consonants and my foreknowledge that we have these syllabic consonants here. For the reason state above, it is justified to ignore and disregard syllabicity in [m̩], [n̩] and [l̩] in CS5 and CS6.

(2) Syllabicity (which relates to 'duration') which characterizes [m̩], [n̩], [l̩], [r̩] or [ɹ̩] is a feature on a different dimension (as syllabicity is a prosodic element, as already said) from that on which we know relevant features of distinctive units are identified. Syllabicity is a prosodic feature which eludes the framework of double articulation, the second articulation in particular, in the present case. This is why the analyst is justified to notate ['prɪzm], ['prɪzn], ['frɪzl], [sm], [sn], [sl] instead of ['prɪzm̩], ['prɪzn̩], ['frɪzl̩], [sm̩], [sn̩], [sl̩]. There are no similar examples involving [r] or [ɹ] as neither is hardly, if ever, occurrent in word-final position in (British) English. Therefore the analyst will operate with [m], [n], [l] and [ɹ] so far as CS5, and CS6 are concerned.

Faced with the task of seeking the phonological characterization of [m̩], [n̩], [l̩], [r̩] and [ɹ̩], the analyst will concentrate on [m], [n], [l], [ɹ] and [r] by separating syllabicity off and concentrating on the phonological characterization of these segmental elements.

We can establish the phoneme /r/ which is definable as "spirant" and whose realization [r] appears in CS2 and CS3.

Both /l/ “lateral” and /r/ “spirant” in English are non-correlated phonemes, i.e. outside correlations (formed by ‘series’ and ‘orders’<sup>113</sup>) of phonemes, and raise few problems, if any, in seeking the phonological status of [l] and [r].

We now turn to [ŋ]’s in CS1, CS3 and CS4 and regard them as realizations of the phoneme /n/ definable as “apical nasal”. The reason why we leave CS2 out of account here is the fact that, though [m] and [n] occur, [ŋ] does not in CS2.

Next, [m]’s in CS1, CS3 and CS4 are considered as realizations of the phoneme /m/ definable as “labial nasal”.<sup>114</sup>

[ŋ]’s in CS1, CS3 and CS4 are realizations of the phoneme /ŋ/ definable as “dorsal nasal”.

We have elicited above five phonemes, /l/, /n/, /m/ and /ŋ/ and /r/. To summarize:

/l/ “lateral”  
 /n/ “apical nasal”  
 /m/ “labial nasal”  
 /ŋ/ “dorsal nasal”  
 /r/ “spirant”

It is the pairs [-sɱ]/[-səm], [-sŋ]/[-sən] and [-sʃ]/[-səl] (see CS6 and CS7) occurring in alternative pronunciations of one and the same part of the word (e.g. *hand-some* [sɱ]/[-səm]; *Johnson* [-sŋ]/[-sən]; *council* [-sʃ]/[-səl]) that initially alert the analyst to the phonological equivalence of [ɱ] and [əm], [ŋ] and [ən] and [ʃ] and [əl].<sup>115</sup> The analyst will also see that there is in some way a close relationship between [ɱ] and [əm], [ŋ] and [ən], and [ʃ] and [əl], that is, the members of each pair are functioning *syntagmatically* (but not *paradigmatically*) with the same status, that is, they are syntagmatically replaceable with each other. By comparing [ɱ] with [əm], [ŋ] with [ən], and [ʃ] with [əl], the analyst knows that [m] and syllabicity are fused into [ɱ], [n] and syllabicity into [ŋ], and [l] and syllabicity into [ʃ]. The analyst will be aware that, outside the commutative series presented above, a similar case of phonological equivalence seems to exist between e.g. [r] and [ər] as in [kæmɾə]/[ˈkæmərə] for *camera*.

<sup>113</sup> For ‘series’, ‘orders’ and ‘correlation’, see e.g. Martinet (1955: 69-70) and Martinet (1960: III-15).

<sup>114</sup> Note that I define /m/ “labial nasal”, not “bilabial nasal” as, according to my own analysis, /p/, /b/, /f/, /v/ and /m/ in English form a single ‘order’ designated as “labial” order, not as “bilabial” order.

<sup>115</sup> Wells (1965: 111) mentions that, for a minority of RP speakers, there exist pairs like [ˈpætən] *pattern*, [ˈpætŋ] *Patton*, [ˈmɒdən] *modern* and [ˈtrɒdŋ] *trodde*, and [ˈtʃætəli] *Chatterley* and [ˈbætliŋ] *battling*. However, I leave such cases out of account in the present paper.

The analyst cannot be sure whether or not a phonological equivalence<sup>116</sup> exists between [ŋ] (which is non-occurrent in CS5 and CS6) and [əŋ] (which is part of [səŋ] in CS7) as long as he limits himself to operating with just the commutative series presented above, unlike in the case of [m] and [əm], [n] and [ən] and [l] and [əl]. The analyst needs to investigate by working on further commutative series and confirms that [əŋ] never occurs word-finally since [ŋ] does not occur word-finally preceded by any vowels except [i, e, ɒ, æ, ʌ] (cf. Trnka 1966: 39). This confirms that [səŋ] in CS7 is actually non-occurrent, and the analyst can now replace the question mark placed after [səŋ] by an asterisk placed in front of it, thus \*[səŋ]. The analyst also discovers that [ŋ], and hence [əŋ], occur only after [k].<sup>117</sup> Therefore the existence of such a co-variation as [ŋ] ~ [əŋ] can be ascertained as impossible and consequently such a co-variation as [kŋ] ~ [kəŋ] is also impossible. We have seen that [kŋ] (as in ['θɪkŋ] *thicken* ['beɪkŋ] *bacon*)<sup>118</sup> is attested but without it co-varying with [kəŋ]. Such being the case, in order to determine the phonological status of [ŋ], the analyst needs to resort to a specific analytical procedure, that is, to examine the opposability among [m], [n] and [ŋ] prepausally when preceded by [k]. This we will show later.

The phonological status of e.g. [m] can be determined when we understand the transfer of syllabicity to [m] and the resultant fusion of syllabicity and [m] into [m̩]. The incorporation of syllabicity to [m], [n] and [ŋ] leaves the quality of each of these nasal consonants unchanged in that [m̩], [n̩] and [ŋ̩] remain articulatorily the same as [m], [n] and [ŋ]. For analytical and expository facility, therefore, it seems reasonable to consider below [m], [n] and [ŋ], by leaving out of account syllabicity temporarily and where appropriate, instead of [m̩], [n̩] and [ŋ̩]. The phonological status of each of [l] and [r] can likewise be determined, *mutatis mutandis*. However, before proceeding to give the phonological status of [m̩], [n̩], [ŋ̩], [l] and [r], it is essential to discuss first certain points regarding [m̩], [n̩] and [ŋ̩].

In attempting to determine the phonological status of [m̩], [n̩] and [ŋ̩], our attention is drawn to the non-occurrence of [ŋ̩] – see CS5 – in the context ['prɪz-] (that is after [z-] but in fact after any consonant (cf. Trnka 1966: 410) and the non-occurrence of [ŋ̩] – see CS6 – in the context [-s-] while, on the other hand, both [m̩] and [n̩] occur in both CS5 and CS6. This fact is important as the non-occurrence of [ŋ̩] in CS5 and CS6 should be taken into account in determining the phonological status of [n̩] and [m̩] as well as [ŋ̩] itself. We will first determine the phonological status of [m], [n] and [ŋ] which are non-syllabic, by setting aside the feature of syllabicity which characterizes [m̩], [n̩] and [ŋ̩].

<sup>116</sup> Two-way co-variation exemplified by e.g. [əl] ~ [l] is a manifestation of the phonological equivalence.

<sup>117</sup> Trnka (1966: 41) is of the view that [ŋ] (hence we assume [ŋ̩] as well) does not occur after any consonant. However, we take the view that [ŋ] (hence [ŋ̩] as well) does occur after [k], if not after [g]. See *supra* fn. 5 and fn. 6.

<sup>118</sup> See *supra* fn. 4 and fn. 5.

In post-vocalic word-final position (see CS1 and CS4) and in intervocalic word-medial position (CS3) where all of [m], [n] and [ŋ] occur, [m] is regarded as a realization of /m/ “labial nasal”, [n] as a realization of /n/ “labial nasal”, and [ŋ] as a realization of /ŋ/ “dorsal nasal”. However, in word-final position preceded by [z] (CS5) or [s] (CS6), [m] and [n] occurs but [ŋ] does not. (It is reminded that we are legitimately examining [m] and [n] instead of [ṃ] and [ṅ].) We should first wonder whether [m] is a realization of the archiphoneme associated with the neutralization of the opposition /m/ “labial nasal” - /ŋ/ “dorsal nasal”. If so, the archiphoneme /m-ŋ/ is definable as “nasal” which is the common base of /m/ and /ŋ/. We should also wonder whether [n] is a realization of the archiphoneme associated with the neutralization of the opposition /n/ “apical nasal” - /ŋ/ “dorsal nasal”, in which case the archiphoneme /n-ŋ/ is definable, again, as “nasal” which is the common base of /n/ and /ŋ/. However, both of these supposed neutralizations must be rejected for two reasons. First, faced with one and the same archiphoneme, i.e. the same phonological content which is “nasal”, we do not know which phonological opposition, /m/ - /ŋ/ or /n/ - /ŋ/, is neutralizable. Therefore the answer is that neither is neutralizable. Second, a neutralizable opposition is bound to be an exclusive opposition. (By an exclusive opposition is meant a phonological opposition the common base of whose two or more member terms (phonemes or tonemes) is exclusive to these member terms and not found in any other terms (phonemes or tonemes) of the same language.)<sup>119</sup> As “nasal” which is the phonological content of the said archiphoneme /n-ŋ/ is also found in /m/ “labial nasal” and, since “nasal” which is the phonological content of the said archiphoneme /m-ŋ/ is also found in /n/ “apical nasal”, it follows that neither /n/ - /ŋ/ nor /m/ - /ŋ/ can be an exclusion opposition and consequently cannot be a neutralizable opposition. The conclusion of all this is that /n/ and /m/ occurs in word-final position preceded by /z/ or /s/ and that /ŋ/ does not occur in that position. [m] and [n] which occur after [z] or [s] in that position are realizations of /m/ and /n/, respectively.

The phonological status of [ṃ] and [ṅ] when preceded by [z] or [s] is as follows.

[ṃ]: /ə/ + /m/

[ṅ]: /ə/ + /n/

(N.B. The schwa phoneme is realized as a prosodic feature of syllabicity in [ṃ] and [ṅ].)

As a matter of fact, it is not only when preceded by [z] or [s] that the above-mentioned phonological status of [ṃ] and [ṅ] is valid. Various other consonants too can occur in word-pre-final position before [ṃ] or [ṅ], as earlier shown in p. 156 and

<sup>119</sup> For some detailed explanation about ‘exclusive opposition’ (and ‘non-exclusive opposition’), see Akamatsu (1988: 58ff.), Akamatsu (1992: 53-5) Akamatsu (2000: 29), or Akamatsu (2013: 137-70, esp. 150-2).

p. 157, and the above-mentioned phonological status of [m̩] and [n̩] apply in such cases as well, except in the cases of [p] + [m̩], [b] + [m̩], [t] + [n̩], and [d] + [n̩].

What is common to [sm̩], [zm̩], [θm̩], [ðm̩] and [ʃm̩], and to [pn̩], [bn̩], [fn̩], [vn̩], etc. is that there is no homorganicity between the two sounds in each of these consecutive consonants. The labiality of [m] is not determined by the preceding consonant, i.e. [s], [z], [θ], [ð] or [ʃ], and the speaker can choose and does choose [m] as distinct from [n] as necessary, so consequently [m] is a realization of /m/. Likewise, the apicality of [n] not being determined by the preceding consonant, i.e. [p], [b], [f], [v], etc., the speaker can choose and does choose [n], as necessary, distinct from [m], so consequently [n] is a realization of /n/. There is consequently no neutralization of the opposition /m/ - /n/ - /ŋ/ since /m/ or /n/ is chosen by the speaker.

Let's next consider [pn̩], [bn̩], [fn̩], [vn̩], etc. There is no homorganicity between [p], [b], [f], [v], etc. on the one hand and [n̩] on the other. As the apicality of [n̩] is not being determined by [p], [b], [f], [v], etc., the speaker can choose and does choose [n̩] instead of [m] or [ŋ], so consequently [n̩] is a realization of /n/. The phonological status of [n̩] in these cases is again as follows.

[n̩]: /ə/ + /n/

We will now look at cases where homorganicity does exist between certain consonants and [n̩], [m̩] and [ŋ̩], i.e. [tn̩] and [dn̩], [pm̩] and [bm̩], and [kŋ̩].

In the case of [tn̩] (e.g. ['bʌtn̩] *button*) or [dn̩] (e.g. ['sʌdn̩] *sudden*), the apicality of [n̩] is determined by the apicality of [t] or [d] which precedes it. The speaker has no choice about the place of articulation of the nasal consonant following [t] or [d], that is, the choice between labiality, apicality and dorsality. The phonological opposition /m/ - /n/ - /ŋ/ is neutralized, with the result that [n̩] in [tn̩] or [dn̩] is a realization of the archiphoneme /m-n-ŋ/ definable as "nasal" (most writers would prefer to symbolize it as /N/).

There is another way to prove that [n̩] in [tn̩] or [dn̩] should be regarded as a realization of the archiphoneme /m-n-ŋ/ combined with syllabicity (of /ə/). We only need to consider [tn̩] and [dn̩] since the abstraction of syllabicity leaves the [n̩] articulatorily identical with [n]. We take note of the fact that, whilst [n] occurs word-finally preceded by [t] or [d] (i.e. [tn], [dn]), neither [m] nor [ŋ] occurs in the same condition (\*[tm], \*[dm], \*[tŋ], \*[dŋ]). We would not rush to conclude that [n̩] is a realization of /n/ and both /m/ and /ŋ/ are non-occurrent after /t/ or /d/. Instead we know that the difference between [n] and [m] on the one hand, and that between [n] and [ŋ] on the other, is unavailable after [t] or [d]. It may be wondered if [n̩] is a realization of the archiphoneme /n-m/ associated with the neutralization of the opposition /n/ - /m/ and, if so, this archiphoneme is definable as "non-dorsal nasal". It may at the same time be wondered if [n̩] is a realization of a different archiphoneme /n-ŋ/ associated with the neutralization of the opposition /n/ - /ŋ/, in which case this archiphoneme is definable as "non-labial nasal". However, [n̩] cannot be a realization of both archiphonemes and

nor can it be that both neutralizations concomitantly produce [n]. We would not know which of the two phonological oppositions is neutralized. We conclude that [n] is a realization of neither the archiphoneme \*/n-m/ nor \*/n-ŋ/, but a realization of the archiphoneme /m-n-ŋ/ which is definable as “nasal” (no distinction between “labial”, “apical” and “dorsal” being possible) and is associated with the neutralization of the opposition /m/ - /n/ - /ŋ/. Therefore, [n] in [tŋ] or [dŋ] is phonologically as follows.

[n]: /ə/ + /m-n-ŋ/.

The same analytical process can be pursued *mutatis mutandis* in connection with the determination of [m] in [pŋ] and [bŋ] and that of [ŋ] in [kŋ].

Note that we have *earlier* indicated the phonological status of [ŋ] differently as follows.

[ŋ]: /ə/ + /n/ (and not [ŋ]: /ə/ + /m-n-ŋ/)

In the case of [pŋ] (e.g. ['klæpŋ] *Clapham*, ['əʊpŋ] *open*)<sup>120</sup> or [bŋ] (e.g. [rɪbŋ] *ribbon*, [kəbɪnbɔɪ] *cabin boy*), the place of articulation of [ŋ], i.e. labiality, is dictated by that of [p] or [b] that precedes [ŋ]. The speaker is denied the choice of the nasal consonant between labiality, apicality and dorsality after [p] or [b]. This means that [ŋ] is a realization of the archiphoneme /m-n-ŋ/ definable as “nasal”, which is the archiphoneme already seen above, so that [ŋ] is phonologically analyzed as follows.

[ŋ]: /ə/ + /m-n-ŋ/

In the case of [kŋ] (e.g. ['beɪkŋ] *bacon*), the dorsal articulation of [ŋ] is automatically determined by that of [k] which precedes [ŋ]. The speaker is denied the choice between labiality, apicality and dorsality of the nasal following [k]. Therefore, the phonological opposition /m/ - /n/ - /ŋ/ is neutralized after [k], so that [ŋ] is a realization of the same archiphoneme as we saw above.

[ŋ]: /ə/ + /m-n-ŋ/

It is stressed that, although no such co-variation as [əŋ] ~ [ŋ] exists, the justification of postulating /ə/ above is the syllabicity in [ŋ].

We have thus established the phonological status of [m], [n] and [ŋ] everywhere they occur. Here is the final summary.

[m]: /ə/ + /m/

[m]: /ə/ + /m-n-ŋ/

<sup>120</sup> In the case of *open* ['əʊpŋ]) there is a discrepancy between the sound [m] and the letter *n*, but there is none in the case of *Clapham* ['klæpŋ] or *Petersham* ['pi:təʃŋ], i.e. [m] and *m*. In *Clapham* and *Petersham*, [m] is chosen by the speaker either because of the spelling or through knowing the pronunciation of *Clapham* or *Petersham* in daily life even without bothering about the spelling.

[ŋ]: /ə/ + /n/

[ŋ]: /ə/ + /m-n-ŋ/

[ŋ̥]: /ə/ + /m-n-ŋ/

(N.B. 1. As [ŋ̥] always occurs as a realization of the archiphoneme /m-n-ŋ/ and only occurs in [kŋ], no such phonological interpretation as /ə/ + /ŋ/ is possible.)

(N.B. 2. In the presentation of the phonological status of [m], [n] and [ŋ], the sequential order – as seen above – of /ə/ on the one hand and /m/, /n/ and /m-n-ŋ/ on the other hand is completely immaterial, as /ə/ and /m/, /ə/ and /n/ and /ə/ and /m-n-ŋ/ are *unordered* just as, for instance, the relevant features of a phoneme (e.g. “voiceless”, “plosive”, “nasal” of /p/ in English) or an archiphoneme (e.g. “non-dorsal nasal” of /m-n/ also in English) are unordered. I have conveniently chosen the order as seen above that is in conformity of the conventional representation of ‘[ə] + non-syllabic consonant’ in pronouncing dictionaries. One is therefore justified to present e.g. either /ə/ + /m/ as much as /m/ + /ə/, for [m].)

That [m̥] and [n̥] can both have an identical phonological status is a good demonstration of the functionalist principle that there is no necessary correspondence between physical reality and linguistic function.<sup>121</sup>

We finally add to the above list the phonological status of [l̥] and [r̥] which will be determined as follows.

[l̥]: /ə/ + /l/

[r̥]: /ə/ + /r/

My analysis of the phonological status of the syllabic consonants in English as shown above might seem somewhat reminiscent of Martinet’s solution to the phonological status of [j̥] and [nj̥] in French. But there are similarities and differences, as will be seen from Martinet’s lines to be quoted below in connection with the problem of how to characterize the so-called ‘*n mouillé*’ (i.e. “palatal nasal” /ɲ/) of *agneau* (1965: 71). See also in this connection Martinet (1974).

Que le trait pertinent de palatalité soit attribué à un phonème / $\bar{n}$ / [i.e. /ɲ/] ou qu’il apparaisse comme le phonème /y/ [i.e. /j/], cela importe peu. Ce qui importe, c’est qu’il apparaisse dans la description, comme il apparaît à titre distinctif dans la chaîne. ... l’important n’est pas de réaliser des économies sur le plan paradigmatique aux dépens du plan syntagmatique, ou *vice versa*. L’essentiel est de donner une représentation qui rende pleine justice à tous les éléments distinctifs.

The similarities and differences between Martinet’s phonological definition of ‘*n mouillé*’ in French and mine of the syllabic nasals (and for that matter, the other syllabic consonants) in English are as follows.

<sup>121</sup> This principle is succinctly summarized by Martinet (1960: III-3).

(1) The entity that Martinet identifies is a phoneme which is definable in its entirety in terms of relevant features. The entity that I have identified is some sort of unit, not just a phoneme or an archiphoneme, that is only partially definable in terms of relevant features.

(2) The French phonological system has, among others, two phonemes, i.e. /ɲ/ “palatal nasal” and /j/ “palatal”, that are taken into account in establishing the phonological status of [ɲ], whereas the English phonological system has the phonemes /m/, /n/, /ŋ/, /l/ and /r/ but not \*/syllabicity/, this last being not a relevant feature but a prosodic element, which overlays each of [m], [n], [ŋ], [l] and [r].

(3) Martinet takes into account two phonemes, /n/ and /j/, which occur successively in this order, in identifying a single phoneme /ɲ/. I take into account two successive phonetic elements, e.g. [ə] and [l], which occur successively in this order, for me to phonologically identify [ɲ]. The two elements, i.e. /n/ and /j/, and e.g. [ə] and [l], are in both cases elements found on the syntagmatic axis.

(4) Whereas the whole phonological characteristic of /j/ “palatal” is taken into account in defining /ɲ/, only a certain single phonetic characteristic of [ə], i.e. syllabicity, is taken into account in characterizing e.g. [ɲ].

(5) The notion of ‘transfer’ of [ə] to the following e.g. [l] is resorted to, which results in a coalescence of [ə] and [l] and ultimately in a fusion of [ə] and [l]. The notion of ‘transfer’ is extraneous to accounting for “palatality” (which /j/ is) in /ɲ/ in French.

(6) There is no setting up a syllabic phoneme which might be presented as \*/l/ as opposable to a non-syllabic phoneme /l/, whereas /n/ and /j/ are perfectly opposable to each other (cf. /ano/ *anneau* vs. /aɲo/ *agneau*).

The widespread solution known to the problem of the syllabic consonants in English, [ɱ], [ɲ], [ŋ], [l] and [r], is to phonologically envisage e.g. [l] in terms of /ə/ + /l/. Cohen (1965: 63) mentions, in connection with the interpretation of word-final [tɲ] and [tɺ] as /təɲ/ and /təɺ/, Trubetzkoy, Trnka, Martinet, Trager and Bloch, and Swadesh as advocating this solution.

This is the solution advocated by Trubetzkoy (1939: 56)<sup>122</sup> who writes about instances not in English but in e.g. German. Trubetzkoy offers this solution, not in reference to the commutation test (which was still not fully worked out in his days) but on the basis of the relation between a sequence of sounds, ‘vowel + a certain consonant (i.e. [əɱ], [əɲ], [əɺ])’ and a single sound, a syllabic consonant ([ɱ], [ɲ], [ɺ]), to see whether or not a sequence of sounds is to be analyzed as a single phoneme

<sup>122</sup> Originally in Trubetzkoy (1935: 16).

(monophonematic interpretation) or multiple phonemes (polyphonematic interpretation). In Trubetzkoy's own words,

Daher werden die deutschen silbischen *l*, *m*, *n* als Realisation<sup>123</sup> der Phonemverbindungen “*el*”, “*em*”, “*en*” gewertet...

As it happens, the case of [ə] and [l], that of [əm] and [ɱ], and that of [ən] and [ɲ] in German are not quite comparable in details to those in English. Nevertheless, the same conclusion would be drawn, that is, that [l] is a realization of /ə/.<sup>124</sup>

What interests us is that, in his analysis of Polish nasalized vowels, Trubetzkoy offers the formula “Vokal + Nasal” (“vowel + nasal”). Though “Vokal” here refers to various vowels, this formula may, if we like, be utilized in our analysis of the syllabic consonants in English. Besides, to my mind, ‘syllabicity’ and ‘vocalic function’ are the two faces of the same coin. This is patently suggested in Martinet (1947: 49) (= Martinet 1965: 72) and Martinet (1960: III-21) – I will quote his relevant lines further below (211) – and also in Trnka (1966: 33) when he says that ‘...these consonants take over its [i.e. of [ə]] vocalic function and become syllabic.’ Note also in this connection that Trager and Bloch (1941: 232) consider ‘syllabicity’ as an allophone of /ə/.

Cohen (1965: 65 fn. 44) refers to Trnka (1935: 52) which is subsequently reprinted as Trnka (1966: 55) where we read the following lines by Trnka.

... syllabic *l*, *n*, *m* are equivalent to ə+l, ə+n, ə+m (cf. p. 33) ...

Trnka (1966: 33) gives a detailed exposition about his interpretation and adds succinctly (1966: 33 fn. 12),

Syllabic /l, n, m/ must be regarded, therefore, as equivalent to /ə + l/, /ə + n/ and /ə + m/.

Trnka's explanation as to why he reaches this interpretation is given at some length spreading over two pages. Unlike Trubetzkoy, Trnka (1966: 33) talks about the neutralization of the opposition /l/ - /ə/ in non-initial syllables ‘before l, n, and m’ as he puts it. He interestingly goes on to say,

...it is only the retention of syllabicity and non-obstructional articulation which characterizes a vowel *versus* a consonant in this position. The representative phoneme is /ə/, but its articulation here is usually so reduced before *l*, *n*, and sometimes *m*, that these consonants take over its vocalic function and become syllabic.

<sup>123</sup> Trubetzkoy (1935: 16) appropriately writes *Realisierungen* (in the plural). Trubetzkoy (1949: 64) puts *réalisations* (in the plural) and also Trubetzkoy (1969: 61) *realizations* (in the plural). It is possible that this minor error crept into Trubetzkoy (1939:16) during the process of hurried editing by Jakobson in the understandable critical circumstances.

<sup>124</sup> Wells (1965: 111 fn. 3) expresses the same view when he writes: ‘*Grundzüge*, p. 56 with reference to German. His arguments apply, *mutatis mutandis*, to English.’

I disagree with Trnka on four points here, though this has no direct relevance to Trnka's conclusion '/ə/ + /l/ > 'syllabic l'', '/ə/ + /n/ > 'syllabic n'', and '/ə/ + /m/ > 'syllabic m' and to my conclusion 'syllabicity + [l] > [l]', 'syllabicity + [n] > [ŋ]', and 'syllabicity + [m] > [m̥]'.

First, contrary to what Trnka says, the schwa does not necessarily reduce before [l], [n] and [m], as the forms [əl], [əŋ] and [əm] do exist in co-variation with [l], [ŋ] and [m̥].

Second, in my view, /ɪ/ - /ə/ is *not* '...in unstressed syllables...the *only* [my italics] pair of phonemes capable of distinguishing words' (Trnka 1966: 33). Cf. *foreword* [-wɔd] vs. *forward* [-wəd] and *commerce* [-mɜs] vs. *commas* [-mæz].

Third, I find it difficult to see that /ɪ/ - /ə/ is 'neutralized in unstressed syllables', as Trnka puts it.

Fourth, I do not endorse either the notion or the term of 'representative phoneme' consequent on neutralization of a phonological opposition or that /ə/ is the representative phoneme of the alleged neutralization of /ɪ/ - /ə/.

However, my disagreement with Trnka on these four points does not call for any discussion in this paper. It is essential to take note that I agree with Trnka's mention of 'syllabicity' and 'vocalic function' and his idea that the non-syllabic consonants 'take over its [i.e. /ə/] vocalic function (this corresponds to 'transfer of syllabicity' in my expression) and become syllabic (this corresponds to 'coalescence' and 'fusion'). Furthermore, So far as the syllabic consonants are concerned, Trnka's words that 'its [i.e. /ə/] articulation here is usually so reduced...' corresponds to my view that the articulatory features which usually characterize the schwa becomes irrelevant, as I said further above.

Let's turn our attention to Martinet. I am not aware of his phonological interpretation of the syllabic consonants that occur in *English*. However, Cohen (1965: 63 fn. 45) refers to Martinet (1937) as offering a relevant interpretation in connection with Danish. Note that Martinet does not, as Cohen suggests to the contrary, treat of word-final [tŋ] and [tʃ] in English. Martinet discusses what he refers to as 'les sonantes employées avec valeur vocalique' in Danish. What Martinet refers to as 'les sonantes' (or specifically 'les sonantes consonantiques' as I would say) corresponds to 'sonorants' in English terminology.<sup>125</sup> Martinet's expression 'les sonantes employées avec valeur vocalique' would correspond to 'the syllabic consonants'. He interprets such syllabic consonants in Danish phonologically in terms of '/ə/ + sonante'. An example which Martinet (1937: 174) gives is '*enten* [endŋ] ændən'. This is what he writes (1937: §2.24).

<sup>125</sup> Pike (1962: 144): 'The sonorants are nonvocoid resonants and comprise the lateral resonant orals and resonant nasals (e.g. [m], [n], and [l]).'

Devant n et l, [ə] disparaît le plus communément, et la sonante suivante devient voyelle [I would say ‘syllabique’ here rather than ‘voyelle’, i.e. ‘vocalique’] (cf. un mot comme *enten* “ou” qui se prononce [endɨ], et où il est artificiel d’interrompre l’occlusion buccale en passant de [d] à [n]). Ceci ne doit pas empêcher d’interpréter phonologiquement *enten* comme ændən et *Adel* comme ’ādəl.

Though Martinet notates [ɲ] with a diacritic (a small low ring) which in our days generally represents ‘devoiced’, this diacritic should be understood as representing syllabicity here. Though Martinet does not indicate ændən enclosed by oblique bars (as we would in our days), we understand it as a phonological notation.<sup>126</sup> Martinet indicates sounds within square brackets<sup>127</sup> but phonological notations are given by default without the use of oblique bars.

That Martinet interprets not only [ɲ] but other syllabic consonants, i.e. [l] and [r] in Danish, in terms of ‘/ə/ + sonante’ is clear from his statement as the following (1937: §3.29).

Ils [r/, /l/, /m/, /n/]<sup>128</sup> se combinent avec un phonème précédent pour donner des [r], [l], [m] et [n] voyelles. Ces réalisations sont naturellement à interpréter come ər, əl, əm, ən...

Martinet gives a number of examples of Danish words in whose pronunciation syllabic consonants occur and present their phonological notations along the same lines.

<sup>126</sup> According to Makkai (1972: 4), the use of oblique lines for this purpose is said to have occurred for the first time in print in phonological literature as late as 1941, in Trager and Bloch (1941). We do read in Trager and Bloch (1941: 229 fn. 9) as follows: ‘Phonemic symbols are enclosed between diagonals to distinguish them from spellings (cited in italics) and from phonetic symbols (enclosed in square brackets).’

<sup>127</sup> The following information is of historical interest. Collins & Mees (1999: 205) write: ‘It is notable that throughout the book [i.e. *An outline of English phonetics*, 1918<sup>1</sup>], Jones uses square brackets to enclose narrow transcription.’ They then quote from Jones who says that ‘Broad transcription of English is used throughout this book, narrow forms being occasionally added in cases where it might be helpful. Such narrow transcription is in every case enclosed in squares brackets.’ Collins & Mees conclude that ‘This would appear to be the first time that this convention (later applied to phonetic as opposed to phonemic transcription) was ever employed in a published work.’ In point of fact, the attribution of the first use of square brackets in phonetics to Jones (re 1918<sup>1</sup>) would seem to be incorrect. Sweet (1908<sup>1</sup> and 1910<sup>2</sup>, on p. 10) writes as follows nearly a decade before Jones (1918<sup>1</sup>) does. ‘Narrow Romic [Eomic in 1st ed., Romic in 2nd ed.] are distinguished from Broad Romic symbols by being enclosed in [ ].’ I owe this information to Windsor Lewis in a private communication (20 March 2014). I am aware, however, that, at an even earlier date, Viëtor (1887<sup>2</sup>: 26, 37, 53 *et passim*), for instance, employs square brackets for the purpose in question. Specifically on p. 37, we find his expression ‘das Zeichen [ ]’. It is even possible that Viëtor (1884<sup>1</sup>) – to which I have so far not had access – already makes use of square brackets. It is even possible (though not confirmed) that Viëtor may have already used square brackets in phonetics as early as 1884 (Viëtor 1884<sup>1</sup>).

<sup>128</sup> That is, r, l, m, n, in Martinet (1937) where he does not use diagonal bars (/ /) to indicate phonematic units.

We have seen that Martinet proposes the phonological interpretation ‘/ə/ + sonante’ so far as Danish is concerned. It would seem to me to be reasonable to suggest that, in the case of the syllabic consonants in English, i.e. [l], [ŋ], [m], [ŋ] and [r], Martinet would probably *not* propose the interpretation i.e. /ən/, /əm/, /əŋ/ in certain cases (though agreeing with /əl/ and /ər/) in the case of English but rather an interpretation substantially congruous with mine offered above. It would be a highly likely possibility, given Martinet’s acquaintance with and positive attitude towards the concepts of neutralization and the archiphoneme as evidenced already at the time in e.g. Martinet (1933) and Martinet (1936) as well as, of course, Martinet (1937).

I am basically agreeable to such a solution whereby ‘/ə/ + sonante’ for the syllabic consonants is adopted in English as well. In accepting this solution, I wish to re-emphasize (I have already made the point on pp. 198-9) that not the whole of the phonetic features of /ə/ should be taken into account. The only feature of /ə/ to be reckoned with is its syllabicity or vocality (in the sense syllabicity = vocality), the rest of its features being irrelevant. Two segments (e.g. [ə] and [l]) are reduced to ([l]), with the sonorant consonant ([l]) retaining its various attributes (voicedness, non-nasality, laterality, etc.) and acquiring syllabicity.

Martinet (1947: 49), which is reproduced in Martinet (1965: 72), speaking about French, says,

...le caractère vocalique ou syllabique de [y] [i.e. [j]]...caractère consonantique et non syllabique de [t]...

where ‘vocalique’ and ‘syllabique’ are synonymously referred to.

Subsequently, Martinet (1960: III-21) even more directly repeats his synonymous reference to vocality and syllabicity when he says as follows while referring to *abbaye* /abej/ and *abeille* /abej/,

...la vocalité et la syllabicit e ne sont ici qu’un seul et m eme trait.

Trager and Bloch (1941: 232) first cite *gambolling* [l] vs. *gambling* [l], *evening* ‘making even’ [ŋ] vs. *evening* ‘early night’ [n], and *fathoming* [m] vs. *rhythmic* [m]<sup>129</sup>. They then mention the occurrence of what they consider as ‘free variation’ (stylistically determined, they say), ‘syllabic consonant’ ~ ‘[ə] + consonant’, exemplifying this by [l] ~ [əl] for *idol*, and [ŋ] ~ [əŋ] for *mountain*. They do not refer to [m] ~ [əm] as in *rhythm* [ˈrɪðm] ~ [ˈrɪðəm] or *prism* [ˈprɪzm] ~ [ˈprɪzəm], and say that [m] is less common. They point out an appreciable degree of phonetic similarity between [ə] of [əl], [əŋ] and [əm] on the one hand and allophones of /ə/ on the other. They consider /ə/ as having been preliminarily established. They point out that ‘lateral-colored

<sup>129</sup> Trager and Bloch employ, as does Martinet (1937), the phonetic symbols ʎ, ŋ and m without adding square brackets. I have replaced them here by [l], [ŋ] and [m] and will continue to do so below.

syllabicity' or 'nasal-colored syllabicity' (their expressions) are [l̩] and [ŋ̩], which are in complementary distribution with allophones of /ə/ occurring elsewhere. (We note that they do not mean [l] and [l̩], or [ŋ] and [ŋ̩], occurring in complementary distribution.) They conclude that '[l̩, ŋ̩, m̩] are [phonemically] /əl, ən, əm/.' Clearly Trager and Bloch's criteria for analyzing [l̩], [ŋ̩] and [m̩] are phonetic similarity and complementary distribution.

It is very interesting that, among the various allophones of /ə/, Trager and Bloch mention 'syllabicity' which they apparently regard as an *allophone* of /ə/ and which they find in [l̩] (*apple*), [ŋ̩] (*button*) and [m̩] (*rhythm*)<sup>130</sup> in addition to [ʌ] (*îndône*) and [ə] (*sofa*). Their way of looking at 'syllabicity' as an allophone of /ə/ would seem like the idea of 'transfer (of [ə]) to [l], [n] or [m]', resulting in coalescence, and eventually a fusion, of [ə] and [l], [n] or [m].

Trager and Bloch (1941: 232-3) go on to deal with [ɚ] (= [r̩]?) in AmE which they consider as 'the weak-stressed retroflex vowel' and analyze it in terms of 'a combination of /ə/ + consonant', that is, along the same line as for the other above-mentioned syllabic consonants. They again employ the criteria of phonetic similarity and complementary distribution (*re* '[ɚ] and prevocalic [r]) and conclude that '[ɚ] is phonemically /ər/' (1941: 233). This interpretation may be considered to apply to [r̩] in BrE as well.

Trager and Bloch do not mention [ŋ̩] at all in this work, so we do not know how they may analyze it 'phonemically', but possibly [ŋ̩] = /əŋ/.

We now turn to Swadesh (1935: 150). The two points in his article are (i) that he analyzes the syllabic consonants phonologically as '/ə/ + non-syllabic consonant' and (ii) that /ə/ functions mainly as 'syllabicity' in the syllabic consonants. In his own words,

... I should not hesitate to substitute *ər* for Bloomfield's *r* in all cases and similarly *ən* for *ŋ*, *əm* for *m*, *əl* even in those cases where syllabic *r*, *n*, *m*, *l* are normally pronounced, because the vowel discussed above has a range of values that shades off into mere syllabicity in some instances.

It seems that, so far as I can see from my short survey above, there is common agreement among researchers that syllabic consonants, [l̩], [ŋ̩], [m̩], [ŋ̩], and [r̩] in English, are phonologically interpretable in terms of /ə/ + /l/, /ə/ + /n/, /ə/ + /m/, /ə/ + /ŋ/, and /ə/ + /r/, respectively, though my interpretation does not agree with this in some respects, that is, as I fully explained above, they concern the phonological status of [ŋ̩], [m̩] and [ŋ̩] where these are preceded by those consonants (necessarily plosives) which are homorganic with them, viz. [t] and [d] preceding [ŋ̩], [p] and [b] pre-

<sup>130</sup> Although Trager and Bloch do not mention the example of *rhythm* earlier, they do do it here and refer to Swadesh (1935: 150).

ceding [m], and [k] preceding [ŋ]. The commonly agreed formula about the phonological status of the syllabic consonants in English can be succinctly expressed as ‘/ə/ + sonant’. The ‘sonant’ is /l/, /n/, /m/, /ŋ/ or /r/ for the majority of researchers, but /l/ “lateral”, /r/ “spirant”, /n/ “apical nasal”, /m/ “labial nasal” or /m-n-ŋ/ “nasal”, as the case may be, for myself and (it is hoped) for other functionalists. It is to be particularly stressed that the ‘sonant’ in question can never be /ŋ/ “dorsal nasal” according to my phonological analysis of the syllabic consonants in English.

I said that there seems to be common agreement that the syllabic consonants are phonologically interpreted as ‘/ə/ + non-syllabic consonant’ or ‘/ə/ + sonant’. We note, however, at least one dissentient voice attributable to Jones (1950<sup>1</sup>: §301) who objects to such a phonological interpretation and considers that both a syllabic consonant (e.g. [l̩]) and the corresponding non-syllabic consonant ([l]) belong to the same phoneme (/l/), the difference between them being that the former is longer than the latter. Jones thus apprehends the occurrence of a syllabic consonant and a non-syllabic consonant as a paradigmatic phenomenon. If so, the confrontation between [l̩] and [l] occurring in an identical context (e.g. [ˈkɒdl̩ɪŋ] [ˈkɒdlɪŋ]) would in theory lead to establishing two phonemes \*/l/ and /l/ which, however, he does *not*, as he operates with /l/ only. Besides, his principle that two sounds occurring in the same context belong to different phonemes (\*/l/ and /l/) cannot be maintained. This is so as he would not consider the syllabic and non-syllabic consonants occurring in the same context as either free variants or members of a variant.

### Phonological interpretation of syllabic consonants other than [l̩], [ŋ̩], [m̩], [r̩] and [ɹ̩]

We have seen, in addition to those mentioned just above, a few other syllabic consonants that are voiceless (e.g. [ʃ̩], [t̩], [k̩]) or voiced (e.g. [b̩]). All of these are obstruents, unlike [l̩], [ŋ̩], [m̩], [r̩] and [ɹ̩] which are sonorants.

The above-mentioned phonological interpretation ‘/ə/ + consonant’ might be thought to apply to [ʃ̩], [t̩], [k̩] and [b̩] as well. If so, I tentatively suggest the following. (However, for another suggestion of mine, see *infra* 216-7.) Each of [ʃ̩], [t̩], [k̩] and [b̩] is long and syllabic. Its duration and syllabicity are like two sides of the same coin and point to one and the same entity. Syllabicity of /ə/ is transferred to /s/, /ʃ/, /t/, /k/, etc., so that syllabicity and each of these consonant phonemes coalesce and are fused. In this process, /ə/ would be transferred as *syllabic and voiceless* ([ʃ̩]). One should remember that the distinction between ‘voiced’ and ‘voiceless’ is phonologically irrelevant to /ə/ and the voicelessness is caused through regressive assimilation by the phonological characteristic “voiceless” inherent in /s/, /ʃ/, /t/, /k/, etc. In the case of [b̩], /ə/ would be transferred as *syllabic and voiced* to /b/, and there results [b̩].

### How do we indicate syllabic consonants in phonological notation?

The final point that calls for our attention is how to represent syllabic consonants in English in the phonological notation of individual words and in running phonological notation. I will show below a few different ways in which the syllabic consonants may be represented with different degrees of success and validity, not all of which I am ready to favour. I will end with one type of phonological notation of the syllabic consonants that I am inclined to regard as the most appropriate.

Let's first consider e.g. *coddle* ['kɒdɫ], *coddling* ['kɒdɫɪŋ] and *codling* ['kɒdlɪŋ]. Following the common practice (if not my own practice in certain respects) according to which the syllabic consonants are interpreted as /əɫ/, /ən/, /əm/, /ər/ and /əŋ/, the following phonological notations may first be proposed: /'kɒdəl/, /'kɒdəɫɪŋ/, /'kɒdlɪŋ/. The disadvantage of these notations is that /əɫ/ as a unit corresponding to a syllabic consonant does not stand out enough in /'kɒdəl/ and /'kɒdəɫɪŋ/. Besides, the notations /'kɒdəl/ and /'kɒdəɫɪŋ/ might easily be understood to correspond to ['kɒdəl] (instead of ['kɒdɫ]) and ['kɒdəɫɪŋ] (instead of ['kɒdlɪŋ]). They can accordingly be amended as /'kɒd.əl/ and /'kɒd.əl.ɪŋ/.<sup>131</sup> /'kɒdlɪŋ/ which does not involve [ɫ] can be left as it is. If *coddle* and *coddling* are pronounced without involving [ɫ] (as is done by some speakers), the notations /'kɒdəl/ and /'kɒdəɫɪŋ/ can be retained.

We can alternatively, though perhaps less preferentially, propose /'kɒdl/, /'kɒdl.ɪŋ/ and /'kɒdlɪŋ/. In these notations it is assumed that the speaker automatically realizes /dl/ in /'kɒdl/ by [dɫ]. In both /'kɒdl/ and /'kɒdl.ɪŋ/, /l/ occurs syllable-finally. The insertion of a dot in /'kɒdl.ɪŋ/ is to ensure that /l/ occurs syllable-finally and is realized by [ɫ]. On the other hand, /l/ in /'kɒdlɪŋ/ which does not occur syllable-finally is automatically realized by [ɫ].

Our examples of *coddle*, *coddling* and *codling* which constitute a case of three-way co-variation will be phonologically notated as follows. I attach the phonetic notation for each item.

['kɒdɫ]	~	['kɒdɫɪŋ]	~	['kɒdlɪŋ]
/'kɒd.əl/	~	/'kɒd.əl.ɪŋ/	~	/'kɒdlɪŋ/

Here is another example, *bottle*, which involves a case of two-way co-variation.

['bɒtɫ]	~	['bɒtəl]
/'bɒt.əl/	~	/'bɒtəl/

<sup>131</sup> The insertion of dots in the proposed phonological notations is not overtly meant to mark syllabary boundary but ultimately does so. /əɫ/ constitutes a syllable, so that each dot does have the same purpose as a dot used in phonetic notation by MacCarthy (1957: 3) that 'a decimal point [is used] to mark syllable division'.

The following are a few more examples of proposed phonological notations of words whose pronunciation involves [ŋ], [ɱ], [ŋ̥] and [ɾ]. They all constitute cases of two-way co-variation.

['brəʊkŋ]	~	['brəʊkən]
/'brəʊk.ən/	~	/'brəʊkən/
['əʊpŋ]	~	['əʊpən]
/'əʊp.ən/	~	/'əʊpən/
['əʊpŋŋ]	~	['əʊpənŋ]
/'əʊp.ən.ŋ/	~	/'əʊpənŋ/

(N.B. A second dot in /'əʊp.ən.ŋ/ is necessary; its absence may tempt the reader to read /...nɪ.../ with /n/ [n] (non-syllabic)).

['bʌtŋ]	~	['bʌtən]
/'bʌt.ə m-n-ŋ/ ('bʌt.əN/)	~	/bʌtən/
['sʌdŋ]	~	['sʌdən]
/'sʌd.ə m-n-ŋ/ ('sʌd.əN/)	~	/'sʌdən/
['rɪðŋ]	~	['rɪðəm]
/'rɪð.əm/	~	/'rɪðəm/
['əʊpŋ]	~	['əʊpən]
/'əʊp.ə m-n-ŋ/ ('əʊp.əN/)	~	/'əʊpən/

(N.B. 1. The space is placed between ə and m-n-ŋ in order that the latter (the archiphoneme /m-n-ŋ/) may the better visually stand out; the presence of the space prevents us from reading [əm].)

(N.B. 2. The alternative symbol, N (for m-n-ŋ), is for convenience sake in that the single symbol is used and no space need be placed between ə and N in the phonological notation.)

(N.B. 3. Words involving [ɱ] of [pɱ] do not co-vary with [əm].)

['beɪkɱ]
/'beɪk.ə m-n-ŋ/ ('beɪk.əN/)

(N.B. Words involving [ŋ̥] of [kŋ̥] do not co-vary with [əŋ].)

['kæmɾə]	~	['kæmərə]
/'kæm.ər.ə/	~	/'kæmərə/

Here is a made-up utterance in which all five syllabic consonants, [l], [ŋ], [ɱ], [ŋ̥] and [ɾ], occur. I indicate the syllabic consonants in boldface in the phonetic notation.

[maɪ 'ʌŋkɪ z 'brəʊkɪŋ 'kæmɾə wəz 'sʌdŋlɪ 'faʊndɪn 'klæpŋ]

/maɪ 'ʌm-n-ŋk.əl z 'brʊk.əm-n-ŋ 'kæm.ər.ə wəz 'sʌ.d.əm-n-ŋlɪ 'fəʊm-n-ŋdɪn  
'klæp.əm-n-ŋ./

(or /maɪ 'ʌNk.əl z 'brʊk.N 'kæm.ər.ə wəz 'sʌ.d.əNlɪ 'fəʊNdɪn 'klæp.əN/.)

(N.B. /N/ in /... 'brʊk.N 'kæm.ər.ə.../ is deliberately meant here (cf. progressive assimilation [k] + [n] > [k] + [ŋ]) to correspond to [ŋ] but, in the absence of this progressive assimilation, corresponds to [ŋ] ('ə/ + /n/').)

What about phonological notations for syllabic consonants like [ʃ], [ʒ], [k̚], [b̚], etc.? Will it be reasonable to use for these syllabic consonants the same type of phonological notation as for [l], [ŋ], [m], [ŋ̚] and [r̚]? If it is judged to be so, is one to notate e.g. /əs. 'pɔ:t/, /əs. 'lɪstə/, /əs. 'sɑ:tɪ/? This type of phonological notation would be quite unacceptable.

The occurrence of [ʃ], [ʒ], [k̚], [b̚], etc., unlike that of [l], [ŋ], [m], [ŋ̚] and [r̚], is incidental and infrequent and is not of the sort that is regularly indicated in pronouncing dictionaries. Characteristic co-variation like [ə] ~ [l] (two-way co-variation) or [ə] ~ [l] ~ [l̚] (three-way co-variation) is extraneous to [ʃ], [ʒ], [k̚], [b̚], etc. We recall at this juncture my tentative suggestion offered (*supra* 214) that [ʃ], [ʒ], [k̚], [b̚], etc. result from the transfer of the schwa (devoiced) to [s], [ʒ], [k], [b], etc. However, the essential feature of these syllabic consonants is above all their augmented duration,<sup>132</sup> which is generally a geminate, e.g. [bb], [ss] rather than, say, [bbb], [sss], and this feature need to be shown in the relevant phonological notations.

Probably an appropriate type of phonological notation for these syllabic consonants would be to double the given symbol for each of them, so that [ʃ], [ʒ], [k̚], [b̚], etc. will be phonologically represented as /ss/, /ʒʒ/, /kk/, /bb/, etc. Some such examples would be [ʃ: 'pɔ:t] /ss 'pɔ:t/, [ʃ: 'lɪstə] /ss 'lɪstə/, [ʃ: 'sɑ:tɪ]<sup>133</sup> /ss 'sɑ:tɪ/, [ʃ: 'sed] /ʃʃ 'sed/, [ 'kk jʊ] /'kk jʊ/, [ 'ŋ-kjʊ] /'ŋŋkjʊ/, [ 'prɒb̚lɪ] /'prɒbb̚lɪ/, [pə 'tɪkjʊlɪ] /pə 'tɪkkjʊlɪ/, [ 'regjʊlɪ] /'regjʊlɪ/, [ 'feb̚rɪ] /'febr̚rɪ/. I also add here [ 'ŋ-kjʊ] (or [ 'ŋ-kjʊ̚]) /'ŋŋkjʊ̚/, which does not belong to the category of the syllabic consonants here for the reason that the notation with the doubling of the symbol, /ŋŋ/, is convenient and desirable.

A few, if not all, of the examples of phonological notation of the syllabic consonants shown above which resort to doubling symbols for phonemes present problems to functionalists, if not to non-functionalists. For instance, /ss 'p-b ɔ:t/ should be

<sup>132</sup> This fact is mentioned by all phoneticians and is well known. Its importance seems to be particularly emphasized by Laver (1994: 265) when he expressly adds a length mark in his examples [ʃ: 'lɪstə] and [ʃ: 'pɔ:t] in [nəʊ ʃ: 'lɪstəɪ | 'ɛvə ʃ: 'pɔ:t ðæt vju] and writes (*op. cit. loc. cit.*) that '...the informal pronunciation of the word *support* continues to represent two syllables, with the first syllable being manifested solely by [ʃ:].'

<sup>133</sup> Notice the absence of a length mark in this example, [ʃ: 'sɑ:tɪ] not [ʃ: 'sɑ:tɪ:] as one might expect from Laver's (1994: 265) writing.

preferred over /ss'pɒt/, /'k k-g j u-ʊ/<sup>134</sup> over /'kk jʊ/, and /'ŋ m-n-ŋ kj u-ʊ/ over /'ŋŋkjʊ/.

Finally, how do we phonologically represent interjections like [ʃ] (variously spelt *sh*, *ssh*, *shh*) and [m̩] *mmm*? [ʃ] and [m̩] are alleged to be long and form the crests of syllables, that is, provided such interjections occur surrounded by troughs in utterances. It is true that they are long but they cannot form the crests of syllables if there is nothing in the immediate environment that can be said to be troughs. Some might suggest that [ʃ] and [m̩] be notated /əʃ/ and /ə̃m/. However, prior to considering or suggesting how to phonologically notate such interjections, there is a fundamentally important question to consider, that is, whether such interjections can be regarded as syllabic consonants at all. I have two main reasons why [ʃ] and [m̩] may not be treated like all five syllabic consonants of English. First, neither [ʃ] nor [m̩] is preceded by an accented vowel on most occasions on which they are uttered, and second, these interjections do not have the variant form [əʃ], [ə̃m] with which [ʃ] and [m̩] could co-vary. Consequently, it would seem that the only way [ʃ] or [m̩] might be phonologically notated is in the form of /ʃ:/ and /m:/. A length mark might be accorded a flexible implication that [ʃ] or [m̩] actually varies in its length ([ʃ], [ʃʃ], [ʃʃʃ], etc. or [m], [mm], [mmm], etc.), as the actual length of [ʃ] or [m̩] is dependent on how long the articulation of [ʃ] or [m̩] is sustained by the speaker. However, phonological notations like /ʃ:/ and /m:/ which involve /:/ (length as a 'phonematic' unit?) in English phonology would be problematical and unacceptable for functionalists. Besides the problem of whether or not to regard interjections such as cited above to form syllabic consonants proper, attempts at devising phonological notations of interjections like them would most likely fail.

## CONCLUDING REMARKS

Various phonetic aspects of the syllabic consonants [l], [ŋ], [m̩], [ŋ̩] and [r̩] in English were described and discussed in Part I. In dealing with generalities of their occurrences, questions concerning the occurrence of [r̩] occupied some considerable space. In addition to the above-mentioned five syllabic consonants, I have looked at a few marginal syllabic consonants whose occurrences are incidental such as [ʃ], [ʃ], [k], [b], etc.

The phonological aspects of the syllabic consonants were treated in Part II. I concentrated on the determination of the phonological status of the syllabic consonants from a functionalist point of view. I then referred to previous investigations by a few other researchers into the phonological solution of the syllabic consonants. We

<sup>134</sup> /u-ʊ/, which is a single distinctive unit of the second articulation is the archiphoneme /u-ʊ/ associated with the neutralization of the opposition /u/-ʊ/.

are all agreed that syllabicity or vocality (two sides of the same coin) should be attributed to the schwa phoneme. Lastly I gave some thoughts to possible phonological notation of the syllabic consonants.

As I have amply shown, a syllabic consonant in English is both phonetically and phonologically a syntagmatic phenomenon in which the schwa and a non-syllabic consonant are involved as they occur successively or are fused. A syllabic consonant results from a fusion of the schwa (in terms of its intrinsic feature, syllabicity) and the non-syllabic consonant. A syllabic consonant may be part of two-way co-variation as in e.g. [ɪ] ~ [əɪ] (*bottle*) or of three-way co-variation as in [ɪ] ~ [əɪ] ~ [ɪ] (*hustling*). Phonologically, a syllabic consonant is analyzed as ‘schwa + a consonant (phoneme, archiphoneme)’, e.g. /ə/ + /l/, or ‘/ə/ + /m-n-ŋ/’. The identification of the phonological status of [ɱ], [ŋ] and [ŋ̥] calls for special care from a functional point of view: [ɱ] may be analyzed as either ‘/ə/ + /m/’ or ‘/ə/ + /m-n-ŋ/’ as the case may be; likewise, [ŋ] may be analyzed as ‘/ə/ + /n/’ or ‘/ə/ + /m-n-ŋ/’ as the case may be, while [ŋ̥] is always analyzed as ‘/ə/ + /m-n-ŋ/’.

Most phoneticians hold the view that a pair like *coddling* (< *coddle* + *-ing*) and *codling* (< *cod* + *-ling*) is a putative minimal pair whose members are differentiated from each other since [ɪ] and [ɪ] occur at a corresponding point in an identical phonetic context and are in a paradigmatic relation. I reject such a view as it would lead to establishing phonematic units, \*/ɪ/ and /ɪ/ in English, an analysis that no-one would endorse. The fact is that [ɪ] and [ɪ] cannot be said to be phonologically in a paradigmatic relation, as no such minimal or near-minimal multiplets are found that enable the commutation between [ɪ] and [ɪ] to be performed. The commutation should only be conducted on the basis of minimal or near-minimal multiplets that contain no potential pause, so that a pair like [ˈkɒdɪŋ] (< [ˈkɒdɪ] + [ŋ]) and [ˈkɒdɪŋ] (< [ˈkɒd] + [ɪŋ]) do not qualify as minimal or near-minimal multiplets for the commutation test.

There is common agreement among researchers that the phonological interpretation of a syllabic consonant is such that it consists of two phonematic units in succession, not in a single phonematic unit. However, at least one researcher to my knowledge sees it otherwise and regards a syllabic consonant as a variant of a single consonant phoneme.

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