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COMPARATIVE ANALYSIS ON THE BEHAVIOUR OF THE CONSONANTAL ARCHIPHONEMES /N/ (FRENCH) AND /R/ (ENGLISH)

Aldo Luiz Bizzocchi¹

contatos@aldobizzocchi.com.br

ABSTRACT: This paper seeks to typify the consonantal archiphonemes /N/ in French and /R/ in English and to achieve a summary comparative study of their behaviour, trying to show that they present analogous nature and distribution. Both French and English archiphonemes result from the neutralisation between a consonant (/n/ in the case of French; /r/ in the case of English) and a “zero” phoneme (represented by Ø) before consonants or in absolute final position. Both archiphonemes present strikingly similar behaviour, they affect the distribution of the preceding vowels in a quite analogous way and their usage follows analogous patterns in terms of the geographic distribution of these languages (i.e., European vs. non-European varieties of French/English). The reasons of such analogies cannot, yet, be explained in the light of the phonological theory only, requiring thus studies on the own typology of the languages at issue.

KEY WORDS: Functional phonology; neutralisation; archiphoneme; French; English.

1. PRELIMINARIES

According to several authors in structural phonology, including Pais (1981: 127), Akamatsu (1988: 111), and Silva (1999: 158), neutralisation is the phenomenon of annulment of the opposition between two phonemes in a given phonemic context. The phonemic unit that subsumes both neutralised phonemes is called *archiphoneme*, and it is graphically represented by a capital letter between slashes. As a result of these definitions, for neutralisation to take place, it is necessary that both phonemes occur in the same phonemic context. Thus, Brazilian Portuguese presents the neutralisation of phonemes /R/ (uvular vibrant) and /r/ (alveolar tap) at the end of syllable (for example,

¹ Universidade de Santo Amaro – UNISA, São Paulo, Brazil.

carta, ‘letter’, which is indifferently pronounced as /k^larta/ or as /k^larta/) (see Bizzocchi 1993: 492). From this neutralisation results archiphoneme /R/ (/k^larta/). Yet, such phonemes do not neutralise after a consonant, for example. Thus, the Portuguese word *guelra*, ‘gill’, only admits the pronunciation /g^lelra/ and not */g^lelra/, whereas *prata*, ‘silver’, only admits the pronunciation /p^rata/ and not */p^rata/. In these cases, evidently, one cannot speak of neutralisation or archiphoneme.

In certain languages, the commutation of a phoneme with a void (that is, the absence of a phoneme) in given contexts does not alter the meaning of the word. In this case, for a reason of formal simplicity, we can posit the neutralisation of the “full” phoneme and the “empty” phoneme, or zero phoneme (represented by Ø). Thus, for example, in British English every /r/ followed by a consonant or in absolute final position may be pronounced or not. Since the possibility of commutation between /r/ and Ø is systematic in these contexts (for there is no exception), we can perfectly speak of the neutralisation of /r/ and Ø and, consequently, consider the existence of an archiphoneme subsuming both neutralised phonemes.

However, on the basis of the definitions given above, it is necessary to distinguish between neutralisation and allomorphy. If we take the French expressions *vous êtes*, ‘you are’ (transcribed /vuz^let/) and *vous faites*, ‘you do’ (transcribed /vu^lfet/), we could, at first sight, think of the neutralisation of /z/ with zero phoneme, whose result would be an archiphoneme /Z/, whence *vous* would be phonemically transcribed as /vuZ/. Nevertheless, it is necessary to remember that the form /vuz/ only occurs before vowels, whereas /vu/ takes place before consonants only. Thus, /z/ and Ø do not commute in the same context, which is why there is no neutralisation in this case. What we have there in truth are two mutually exclusive allomorphs, /vu/ and /vuz/.

We should therefore bear in mind that neutralisation is due to exclusively phonological (phonetic and phonemic) factors and, in this way, it happens every time such factors are present and only in this condition. Thus, for instance, the neutralisation of /r/ and /R/ in Brazilian Portuguese or the neutralisation of /r/ and Ø in British English take place without exception every time such phonemes occur at the end of syllable. On the other hand, in the case of the English word *usage* (pronounceable as /j^hu:sidz/ or /j^hu:zidz/), we cannot speak of neutralisation between /s/ and /z/, since such phonemes

do not necessarily neutralise every time they find themselves between vowels (cf. plural noun *excuses* /ikskj'ʉ:siz/ and verbal form *excuses* /ikskj'ʉ:ziz/). In this case, /j'ʉ:sidz/ and /j'ʉ:zidz/ are allomorphs.

Now that these preliminary considerations have been made, we are able to discuss the consonantal archiphonemes in French and English, languages where this phenomenon is particularly significant, alongside with the fact that French and English archiphonemes present a great analogy in terms of behaviour.

2. THE FRENCH ARCHIPHONEME /N/

Let us consider the French words *once*, ‘ounce’, *bombe*, ‘bomb’, *onde*, ‘wave’, and *ongle*, ‘nail’. Note that *once* only admits the pronunciation [ʉs], whereas *bombe* can be pronounced as [bʉb] or as [bʉmb], *onde* can be pronounced as [ʉd] or as [ʉnd], and *ongle* can be pronounced as [ʉglə] or as [ʉŋglə].² Hence archiphoneme /M/ is deduced, resulting from the neutralisation of /m/ and Ø before /p/ and /b/, as well as archiphoneme /N/, resulting from the neutralisation of /n/ and Ø before /t/, /d/, /k/ and /g/. We can, for simplicity, blend both archiphonemes in a sole archiphoneme /N/, which neutralises /m/, /n/, and Ø, for /m/ and /n/ present complementary distribution between them, and Ø freely commutes with the other two phonemes. Thus, we have *bombe*, *onde*, and *ongle* respectively transcribed as /bʉNb/, /ʉNd/, and /ʉNglə/. In a generative approach, this phenomenon can be represented as

$$/m/ \rightarrow \emptyset / _p/, /b/, \emptyset \text{ and } /n/ \rightarrow \emptyset / _t/, /d/, /k/, /g/, \emptyset$$

what means that, before /p/, /b/, or in final position, /m/ is “erased”, and the same happens to /n/ before /t/, /d/, /k/, /g/ or in final position. However, it is to be noticed that this erasure is facultative, what gives birth to the process of neutralisation and emergence of the archiphoneme.

It can be observed, in this way, that this archiphoneme is always preceded by a nasal vowel, and in medial position it is always followed by a stop consonant. However, /N/ can also occur in the absolute final position. Let us see how that happens.

Let be the phrases:

- (1) mon ami /mõ̃n am'i/
- (2) mon harnais /mõ̃ arn'ɛ/
- (3) mon tableau /mõ̃ tabl'o/ or /mõ̃n tabl'o/
- (4) mon père /mõ̃ p'ɛr/ or /mõ̃m p'ɛr/
- (5) mon chapeau /mõ̃ ʃap'o/

On the basis of the examples above, we can posit the phonemic form /mõ̃N/. Note in examples (1) and (2) that, before words beginning with a vowel sound, /N/ can manifest as /n/ or as Ø, this distribution being disciplined by linguistic norm.³ Before stops, the occurrence of /m/, /n/, or Ø is facultative; before other consonants only Ø occurs.

Nevertheless, not every French word ending with a nasal vowel has an archiphoneme /N/ in final position. If we take, for example, the phrases

- (6) maison azure /mɛz'ɔ̃ az'yr/
- (7) maison haute /mɛz'ɔ̃ 'ot/
- (8) maison blanche /mɛz'ɔ̃ bl'ɑ̃ʃ/ or / mɛz'ɔ̃m bl'ɑ̃ʃ/
- (9) maison décorée /mɛz'ɔ̃ deko're/ or / mɛz'ɔ̃n deko're/
- (10) maison verte /mɛz'ɔ̃ v'ɛrt/

we will see that /m/ and /n/ can only occur before stops; in the other contexts, we always have Ø. In this case, it is more convenient to assume the inexistence of /N/ in the final

² In fact, the pronunciations [b'ɔ̃mb], [ɔ̃nd], and [ɔ̃ɲglə] are commoner in some regions of France, as well as of French-speaking Canada, not corresponding to the standard Parisian pronunciation, for example, which is [b'ɔ̃b], [ɔ̃d], and [ɔ̃glə].

³ In truth, /N/ manifests as Ø before words that formerly used to begin with an aspirate *h*. This aspirate sound having disappeared in French, such words begin today with a vowel sound.

position. The occurrence of /m/ and /n/ in examples (8) and (9), respectively, can be dealt with in this case as a phenomenon restricted to the phonetic plane, which does not have any repercussion on the phonemic level.⁴

3. THE ENGLISH ARCHIPHONEME /R/

Let us consider the English words *fast* and *part*. Note that, similarly to French, *fast* can only be pronounced /f^ha:st/, whereas *part* can be pronounced as /p^ha:t/ or as /p^ha:rt/.⁵ We can therefrom deduce archiphoneme /R/, resulting from the neutralisation of /r/ and Ø. Thus, *part* is phonemically transcribed as /p^ha:Rt/. This archiphoneme is always preceded by a long vowel or diphthong and it can also occur in the absolute final position. In medial position, it is always followed by a consonant. In a generative approach, this process can be represented as

$$/r/ \rightarrow \emptyset / _C, \emptyset$$

what means that, before consonants (C) or in final position (Ø), /r/ is erased. However, as happens in French, this erasure is facultative, giving birth to neutralisation and originating an archiphoneme.

Then we have:

(11) far away /f^ha:ɹ Δw^hej/

(12) far from /f^ha: from/ or /f^ha:ɹ from/

We can then posit the phonemic form /f^ha:R/. Observe in example (12) that, before words beginning with a consonant, /R/ can manifest as /r/ or as Ø.

⁴ It is convenient to add that, in French, the appearance of a sound [ŋ] at the end of the word, after a nasal vowel, is quite common. Thus, it is not unusual to hear *long* pronounced as [l^hɔ̃ŋ]. Also in this case, there is no archiphoneme /N/.

⁵ The pronunciation /'pa:rt/ is commoner in northern England, Ireland, as well as the United States and Canada, not corresponding to the standard Londoner pronunciation, which is /p^ha:t/.

Notwithstanding, just as in French, not every word ending with a long vowel has an archiphoneme /R/ in the final position. Let be, for instance, the phrases:

(13) I saw him /aj s^lo: him/

(14) I saw it /aj s^lo: it/ or /aj s^lo:ɾ it/

We can see in these examples that /r/ does not occur before consonants; before vowels, its occurrence is facultative. In this case, we do not have archiphoneme /R/, being more convenient to deal with the occurrence of /r/ in example (14) as a strictly phonetic phenomenon, which does not reach the phonemic level.

4. SYSTEMATISATION OF THE ARCHIPHONEMES /N/ AND /R/

In Table 1, a systematic board of consonantal archiphonemes of French and English is presented, showing the simple vowels (nasal, in the case of French; long, in the case of English), and the same vowels followed by the respective archiphonemes. Note that some long vowels of English, as well as diphthong /ej/, undergo phonetic modifications as they find themselves in an isolate position or followed by /R/. It is also interesting to emphasise that, in French, not all oral vowels have nasal correspondents (in fact, only /a/, /ɛ/, and /ɔ/ present nasal counterparts; the same does not happen to /e/, /i/, /o/, /u/, /ø/, and /y/).⁶ Similarly, not all short vowels of English present long correspondents: it is the case of /e/.

⁶ Of course, we can consider that in nasal vowels occurs a neutralisation of the trait open/closed that distinguishes /ɛ/ and /e/ or /ɔ/ and /o/. In this case, the nasal phonemes could equally be represented as /ẽ/, /õ/ or /ē/, /ō/. Another aspect to be considered is that there formerly used to exist a nasal /œ/ (pronounced [cœ]) that is no longer used (except by extremely conservative speakers), being normally replaced with /ẽ/.

FRENCH			ENGLISH		
PHONEME	PRONUNCIATION	EXAMPLE	PHONEME	PRONUNCIATION	EXAMPLE
/ã/	[ã]	<u>dan</u> se	/ɑ:/	[ɑ:]	<u>fa</u> ther
/ɛ̃/	[ɛ̃]	<u>lin</u> ge	/ej/	[eɪ]	<u>da</u> te
			/i:/	[i:]	<u>bea</u> t
/ɔ̃/	[ɔ̃]	<u>son</u> ge	/o:/	[ɔ:]	<u>la</u> w
			/u:/	[u:]	<u>fo</u> od
			/ʌ:/	[ɜ:]	hors-d' <u>œ</u> uvre
/ãN/	[ã], [ãn]	<u>vent</u> re	/ɑ:R/	[ɑ:], [ɑ:ɹ]	<u>pa</u> rk
/ɛ̃N/	[ɛ̃], [ɛ̃n]	<u>pe</u> indre	/ejR/	[e ^ə], [e ^ə ɹ]	<u>thei</u> r
			/i:R/	[i ^ə], [i ^ə ɹ]	<u>bea</u> rd
/ɔ̃N/	[ɔ̃], [ɔ̃n]	<u>on</u> de	/o:R/	[ɔ:], [ɔ:ɹ]	<u>sto</u> re
			/u:R/	[ʊ ^ə], [ʊ ^ə ɹ]	<u>mo</u> or
			/ʌ:R/	[ɜ:], [ɜ:ɹ]	<u>hu</u> rt

Table 1: Systematisation of consonantal archiphonemes of French and English

Another interesting aspect of the behaviour of these archiphonemes is that both modify the sound of the preceding vowel in a similar way. Looking at Table 2, we can observe that, in French, grapheme *an* followed by a stop always corresponds to phoneme /ã/ + /N/, resulting in phonemic sequence /ãN/; in the same context, graphemes *in* and *un* are always pronounced as /ɛ̃N/, grapheme *on* is always pronounced as /ɔ̃N/, and grapheme *en* is sometimes pronounced as /ãN/ and sometimes as /ɛ̃N/.

FRENCH			ENGLISH		
GRAPHEMES	PHONEMES	EXAMPLE	GRAPHEMES	PHONEMES	EXAMPLE
an	/ãN/	<u>ban</u> de	ar	/ɑ:R/	<u>pa</u> rt
en	/ãN/,	<u>ent</u> re,	er	/ɑ:R/,	<u>ser</u> geant,
	/ɛ̃N/	<u>vi</u> endra		/ʌ:R/	<u>mer</u> ge
in	/ɛ̃N/	<u>in</u> direct	ir	/ʌ:R/	<u>bir</u> d
on	/ɔ̃N/	<u>on</u> de	or	/o:R/	<u>sho</u> rt
un	/ɛ̃N/	<u>un</u> gulé	ur	/ʌ:R/	<u>hu</u> rt

Table 2: Equivalence between graphemes and archiphonemes.

Analogously, in English, grapheme *ar* followed by a consonant always corresponds to phonemic sequence /a:R/; in the same context, graphemes *ir* and *ur* are always pronounced as /ɪ:R/, grapheme *or* is always pronounced as /o:R/, and grapheme *er* is sometimes pronounced as /a:R/ and sometimes as /ɪ:R/.

5. CONCLUSION

One can observe that French and English have consonantal archiphonemes that present a strikingly analogous behaviour under all aspects, for both occur in the syllable exclusively in the immediately postvocalic position, both result from the neutralisation of a consonant with zero phoneme, both require to be preceded by a specific type of vowel (in French, nasal vowels, excluded the oral ones; in English, long vowels, excluded the short ones⁷). Moreover, one can notice that, in the preconsonantal position, these archiphonemes are preferably actualised as Ø in the European pronunciation of these languages. In this kind of context, the actualisation of /N/ as /n/ and /R/ as /r/ has a dialectal character in France and England, being, on the contrary, the normal actualisation of these archiphonemes in the overseas varieties of these languages (Canadian, African French, etc.; North-American, Canadian, African English, etc.).

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RESUMO: Este artigo busca tipificar os arquifonemas consonantais /N/ do francês e /R/ do inglês e realizar um estudo comparativo sumário de seu comportamento, procurando mostrar que eles apresentam natureza e distribuição análogas. Tanto o arquifonema francês quanto o inglês resultam da neutralização entre uma consoante (/n/ no caso do francês; /r/ no caso do inglês) e um fonema “zero” (representado por Ø) diante de consoantes ou em posição final absoluta. Ambos os arquifonemas apresentam comportamento espantosamente similar, afetam a distribuição das vogais precedentes de maneira bastante análoga e seu uso segue padrões análogos em termos da distribuição geográfica dessas línguas (isto é, variedades européia vs. não-européia do francês/inglês). As razões de tais analogias não podem, no entanto, ser explicadas apenas à luz da teoria fonológica, exigindo para tanto estudos sobre a própria tipologia das línguas em questão.

PALAVRAS-CHAVE: Fonologia funcional; neutralização; arquifonema; francês; inglês.

ABSTRACT: This paper seeks to typify the consonantal archiphonemes /N/ in French and /R/ in English and to achieve a summary comparative study of their behaviour, trying to show that they present analogous nature and distribution. Both French and English archiphonemes result from the neutralisation between a consonant (/n/ in the case of French; /r/ in the case of English) and a “zero” phoneme (represented by Ø) before consonants or in absolute final position. Both archiphonemes present strikingly similar behaviour, they affect the distribution of the preceding vowels in a quite analogous way and their usage follows analogous patterns in terms of the geographic distribution of these languages (i.e., European vs. non-European varieties of French/English). The reasons of such analogies cannot, yet, be explained in the light of the phonological theory only, requiring thus studies on the own typology of the languages at issue.

KEY WORDS: Functional phonology; neutralisation; archiphoneme; French; English.

⁷ In fact, the only case where archiphoneme /R/ can be preceded by a short vowel is when it is preceded by unstressed /ʌ/ (compare *forward* /fɔ:RwʌRd/ and *foreword* /fɔ:Rwʌ:Rd/).