On the status of prothetic vowels in the Atlantic French creoles
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1.

The present paper looks into the phonological status of prothetic vowels in several Atlantic French creoles. To do so, I will examine the fate in these languages of /s/ + obstruent onset clusters (where the obstruent is a voiceless stop). This issue is a matter of some debate in the literature since it is frequently alleged that one of the differences between the Atlantic English-based and French-based creoles resides precisely in the treatment of these clusters.

The paper is organized as follows. Section 2 briefly reviews previous discussions of prothetic vowels in the Atlantic French creoles. In 3 I present empirical data from a number of Atlantic French creoles: Haitian, Guadeloupean, Marie-Galantais, Martinican and Guyanais, from both their basilectal and acrolectal varieties. I also briefly look at the situation in early Trinidadian. Section 4 compares anaptyxis in the Atlantic English and French creoles. In section 5 I first evaluate a previous analysis of prothetic vowels in Haitian and then go on to propose an alternative analysis, extending it to cover other Atlantic French creoles as well. Circumstantial evidence from the Indian Ocean creoles is examined in 6. The findings are summarized in section 7.

The analysis suggested is couched in an optimality-theoretic framework (Kager 1999, McCarthy 2002). All examples are quoted in the orthography or in the transcription system used in the sources mentioned.

2.

Neither the treatment of /s/ + obstruent onset consonant clusters nor the issue of prothetic vowels are discussed by authors of comparative studies of French creoles, such as Goodman (1964), Stein (1984) or Corne (2000).

Other creolists, however, claim that the treatment of /s/ + obstruent onset clusters represents a major difference between the Atlantic English and French creoles. As is well known, in the former these clusters are simplified either via deletion of /s/ or by means of anaptyxis into the /s/ + obstruent cluster (see also section 4). On the other hand, Parkvall (1999: 32), for instance, states that “whenever [such clusters] occur in the etyma of F[rench] C[reoles] words, they are normally retained, even if the onset consists of three consonants”. He lists examples such as:

(1) Haitian: 
\textit{strik} (F \textit{strict}) ‘strict’ (Parkvall 1999: 32)

(2) Mauritian: 
\textit{striktir} (F \textit{structure}) ‘structure’ (Parkvall 1999: 32)
Parkvall (1999: 33) further maintains that, unlike their English counterparts, these clusters appear to be retained even in earlier stages of the Atlantic French creoles.

However, a closer examination of data from a number of Atlantic French-based creoles disconfirms such claims. While it is true that /s/ + obstruent onset clusters occur e.g. in Louisianais, St Lucian and Dominican (see Avram 2000 for examples), it is equally true that these clusters are simplified in other varieties.

3.

In several Atlantic French creoles, such as Haitian, Guadeloupean, Marie-Galantois, Martinican, Guyanais, Trinidadian (see also Avram 2000, 2002 and in press), three- and two-consonant onset clusters of the type /s/ + obstruent (+ liquid) are broken up by means of vowel prothesis.

3.1

Three-consonant clusters in onset position, whether word-initially or medially, are said to occur in Haitian. However, Hall & al. (1953: 21) note that in Haitian three-consonant clusters “occur only in French borrowings”, such as:

(3)  
\[
\text{skrib (F scribe) ‘scribe’}
\]

D’Ans (1968: 49) also mentions the occurrence of three-consonant clusters onsets word-medially. Consider the following example, as syllabified by d’Ans:

(4)  
\[
/\text{(e)-sklav/ (F esclave) ‘slave’ (D’Ans 1968: 49)}
\]

I can only quote Cadely (1988: 78) who writes that such forms “simply offer the curious image of a certain perception of syllabification”.

Férère (1974: 78) claims that Haitian has CCCV among its “syllable structures” and illustrates it with:

(5)  
\[
/\text{skrühl/ (F scrupule) ‘scruple’}
\]

However, as the presence of [y] instead of the expected reflex [i] indicates, this appears to be an instance of Frenchified Haitian. As noted by Valdman (1978: 59), the French [-back, +round] vowels, such as /y/, do occur in the Frenchified varieties of creole French frequently used by the urban elite. According to Hazaël-Massieux (1999: 51–52) these “rounded [phonetic] realizations are almost everywhere considered “prestigious”, since they are characteristic of French, hence the Frenchified realizations”.

Valdman (1978: 56) writes that “[Haitian] Creole does not have initial three-consonant clusters, except for those that might be introduced by recent borrowings from French and English, for instance /spl/ or /skr/:

(6)  
\[
/splädid/ (F splendid) ‘splendid’ (Valdman 1978: 56)  
/skrrib/ (F scribe) ‘scribe’ (Valdman 1978: 56)
\]
He adds, however, that “in the speech of creolophone Haitians who use French very little such clusters are eliminated in initial [position] by the addition of the prothetic vowel /å/: /åspl ãdid/ [emphasis added].”

Cadely (1988: 14) does mention the three-consonant clusters in onset position in Haitian as presented by Hall & al. (1953), d’Ans (1968) and Férère (1974). However, he adds that “one finds, indeed, these realisations in the – dialect of bilinguals – of Haitian”. As for the monolingual variety, “such sequences are systematically broken up by the insertion of a prothetic vowel [emphasis added]” (Cadely 1988: 14).

This suggests that not only is the distribution of these three-consonant onset clusters severely restricted in Haitian, they may also be broken up by means of vowel prothesis.

Consider next two-consonant onset clusters. Thus, in Haitian, /sp/, /st/ and /sk/ do occur in onset position, but, again, in “French loan-words” (Hall & al. 1953: 21):

(7)  spésial (F spécial) ‘special’ (Hall & al. 1953: 21)
     stasiô (F station) ‘station’ (Hall & al. 1953: 21)
     skòpiô (F scorpion) ‘scorpion’ (Hall & al. 1953: 21)

Note, however, the occurrence of numerous forms with a prothetic vowel:

(8)  eskandal (F scandal) ‘scandal’ (Bentolila & al. 1976: 147)
     eskapilè (F scapulaire) ‘monk’s tunic’ (Bentolila & al. 1976: 147)
     eskâpyon (F scorpion) ‘scorpion’ (Bentolila & al. 1976: 147)
     épésial (F spécial) ‘special’ (Hall & al. 1953: 232)
     épésialmâ (F spéciallement) ‘especially’ (Hall & al. 1953: 233)
     estat (E start) ‘to start a car’ (Bentolila & al. 1976: 148)
     estati (F stâti) ‘statue’ (Tinelli 1981: 179)
     éstop(é) ‘to stop’ (Hall & al. 1953: 301)

According to Tinelli (1981: 179), the “addition of a prosthetic e” is moreover “regular in Haitian in words with initial s followed by a stop” [emphasis added].

More recently, DeGraff (1999: 367) also mentions, without any further specifications, “dialectal variations in the pronunciation of [...] H[aitian] C[reole] words with the [...] /ste/ sequence”. According to the dialect, the consonant cluster /st/ is either broken up by means of the prothetic vowel, as in the examples under (9), or it may appear as such in the onset, as in (10):

(9)  esteno (F sténo) ‘steno’ (DeGraff 1999: 367)
     estereyo (F stéréo) ‘stereo’ (DeGraff 1999: 367)

(10) steno (F sténo) ‘steno’ (DeGraff 1999: 367)
     stereyo (F stéréo) ‘stereo’ (DeGraff 1999: 367)

Finally, Nikiema (2000: 172) also mentions dialectal variation. In one dialect all the reflexes of etyma with /s/ + obstruent onset clusters evince the prothetic /å:/.
Another dialect however exhibits forms with no initial vowel:

(12)  
\[
\begin{align*}
\text{spèktatè (F spectateur) } & \text{‘spectator’ (Nikiema 2000: 173)} \\
\text{spò (F sport) } & \text{‘sport’ (Nikiema 2000: 173)} \\
\text{steril (F stérile) } & \text{‘sterile’ (Nikiema 2000: 173)}
\end{align*}
\]

According to Nikiema, both dialects are spoken by monolingual speakers of Haitian. This would appear to show, contra Cadely (1988), that the occurrence of the onset clusters at issue is not confined to Frenchified varieties of Haitian.

Whatever the exact status of the dialects, the fact remains that variants without the prothetic vowel are closer to the etymon, that is they are Frenchified forms. Therefore, in optimality theoretic terms, the difference between the basilectal and the Frenchified variants is captured by the different ranking of the well-formedness constraint *ONS/sO, prohibiting /s/ + obstruent onset clusters, and of the faithfulness constraint DEP-IO:

(13)  
\[
\begin{align*}
\text{basilectal forms: } & *\text{ONS/sO >> DEP-IO;} \\
\text{Frenchified forms: } & \text{DEP-IO >> *\text{ONS/sO}}
\end{align*}
\]

The ranking of these constraints is demonstrated by the evaluations in tableaux (14) and (15) respectively:

(14)  
\[
\begin{array}{ccc}
/\text{steril}/ & *\text{ONS/sO} & \text{DEP-IO} \\
\text{steril} & * & ! \\
\text{àsteril} & ! & *
\end{array}
\]

(15)  
\[
\begin{array}{ccc}
/\text{steril}/ & \text{DEP-IO} & *\text{ONS/sO} \\
\text{àsteril} & * & ! \\
\text{steril} & ! & *
\end{array}
\]

The phenomenon of “re-Frenchisation” or “re-Frenchification” (Holm 2000: 148) can thus be accounted for in terms of reranking of constraints. Adapting Oostendorp’s analysis of what he calls “style level” (Oostendorp 1997: 209), I propose the following statement of re-Frenchisation or re-Frenchification:

(16)  
The more Frenchified the speech level, the higher ranked the faithfulness constraints.
In Frenchified forms, the faithfulness constraint DEP-IO is outranks the structural constraint *CONS/sO. The ranking DEP-IO >> *CONS/sO is thus a sociolinguistic marker in Haitian, in the sense of Holm (2000: 148).

3.2

The reduction in the onset of /s/ + obstruent clusters is also attested in Guadeloupean. Thus, Cérol (1994: 192) writes that, in Guadeloupean, “an initial consonant cluster of the type s + stop is broken up by means of a vowel /i/ or /à/ [emphasis added]”. Consider the following forms registered in Germain (1976), Poullet & al. (1984) and Ludwig & al. (1990):

(17) èspéysyal (F spécial) ‘special’ (Poullet & al. 1984: 99)
èspéysyalis (F spécialiste) ‘specialist’ (Ludwig & al 1990: 120)
èspéysyalité (F spécialité) ‘specialty’ (Ludwig & al 1990: 120)
èspéysyalman (F spécialement) ‘especially’ (Ludwig & al 1990: 120)
éspò / ispò (F sport) ‘sport’ (Ludwig & al 1990: 391)
espoutnik (F spoutnik) ‘sputnik’ (Germain 1976: 261)
èspow (F sport) ‘sport’ (Ludwig & al 1990: 120)
ispéyal (F spécial) ‘special’ (Ludwig & al 1990: 149)
ispéysyalman (F spécialement) ‘especially’ (Ludwig & al 1990: 149)
èskandal (F scandale) ‘scandal’ (Ludwig & al 1990: 389)
èskendale(z) (F scandaleux / scandaleuse) ‘uproarious’ (Ludwig & al 1990: 389)
èskélèt (F squelette) ‘skeleton’ (Ludwig & al 1990: 391)
èskolarité (F scolarité) ‘schooling’ (Ludwig & al 1990: 389)
èstab / istab (F stable) ‘stable’ (Ludwig & al 1990: 391)
èstad / istad (F stade) ‘stadium’ (Ludwig & al 1990: 391)
èstasyon (F station) ‘station’ (Ludwig & al 1990: 391)
èstati / istati (F statue) ‘statue’ (Ludwig & al 1990: 391)
estatu (F statue) ‘statue’ (Germain 1976: 261)
èstil / istil (F style) ‘style’ (Ludwig & al 1990: 391)
estopé / istopé (F stopper) ‘to stop’ (Ludwig & al 1990: 391)
istop (F stop) ‘stop’ (Ludwig & al 1990: 391)

Notice the occurrence of vowel prothesis in these examples, even though most of the above words are obviously recent borrowings. Significantly, with one exception, all the Guadeloupean equivalents listed in Ludwig & al (1990) of French etyma with /s/ + obstruent exhibit a prothetic vowel.

3.3

Tourneux & al. (1990)\(^{10}\) and Barbotin (1995) record forms with a prothetic vowel, [à]\(^{11}\) in the creole spoken in Marie-Galante, a variety extremely closely related to Guadeloupean. As seen below, Tourneux & al. (1990) also register variants with a prothetic [i], as in Guadeloupean (see 3.2):
In all the above examples, most of which are clearly recent borrowings from French, the /s/ + obstruent onset cluster is reduced via vowel prothesis.

3.4

Similarly, in Martinican two-consonant onset clusters of the type /s/ + obstruent are simplified, again by means of a prothetic vowel.

Thus, Jourdain (1956: 20) writes that this “creole has a very strong tendency to introduce [sic] an initial e into [sic] the group s + consonant [emphasis added]”. More recently, Pinalie (1992) also lists a number of relevant forms. Consider the examples below:

(19)  
èspéysyal / ispéysyal (F spécial) ‘special’ (Pinalie 1992: 206)  
ispektatè (F spectateur) ‘spectator’ (Pinalie 1992: 206)  
èskandale (F scandale) ‘noise’ (Pinalie 1992: 198)  
èskandalè(z) (F scandaleux / scandaleuse) ‘noisy’ (Pinalie 1992: 41)  
escapulai (F scapulaire) ‘monk’s tunic’ (Jourdain 1956: 20)  
esquelette (F squelette) ‘skeleton’ (Jourdain 1956: 20)  
eskópyon (F scorpion) ‘scorpion’ (Pinalie 1992: 198)  
èstjélèt (F squelette) ‘skeleton’ (Pinalie 1992: 198)  
estad (F stade) ‘stadium’ (Pinalie 1992: 206)  
istaj (F stage) ‘stage’ (Pinalie 1992: 206)  
estati (F statue) ‘statue’ (Pinalie 1992: 206)
Significantly, all the French etyma which begin with the cluster /s/ + voiceless stop – recent borrowings included – have as their only reflex forms with a prothetic vowel. These reflexes also show that, as in Guadeloupean (section 3.2) and in Marie-Galantois (see 3.3 but also [i].

Saint-Jacques Fauquenoy (1972) reports the existence in Guyanais of forms in which the cluster /s/ + voiceless stop is broken up via the prothetic vowel [å]. A larger number of such forms are recorded by Barthelemi (1995).

(F stérilet) ‘intrauterine contraceptive device’ (Barthelemi 1995: 81)
estop (F stop) ‘stop’ (Barthelemi 1995: 81)
estopé (F stopper) ‘to stop’ (Barthelemi 1995: 81)
estilo (F stylo) ‘fountain pen (Saint-Jacques Fauquenoy 1972: 50)
eskandal (F scandale) ‘noise’ (Barthelemi 1995: 80)
eskelet (F squelette) ‘skeleton’ (Barthelemi 1995: 80)
(F scolaire) ‘school-related’ (Barthelemi 1995: 80)
eskor (F score) ‘score’ (Barthelemi 1995: 80)

Notice again that most of the words above are relatively recent borrowings.

3.6

Parkvall’s (1999: 33) claim (see section 2) notwithstanding, early records of Atlantic French creoles show that /s/ + obstruent onset clusters are not retained
in the older stages of these languages. In fact, they are simplified, as in the Atlantic French creoles considered in sections 3.1 through 3.5, by means of vowel prothesis. Here are examples from early Trinidadian, dating from the second half of the 19th century:

(21) escandaler17 (F scandaleux) 'noisy' (Thomas 1869 / 1969: 29) 
estimar (E steamer) 'steamer' (Thomas 1869 / 1969: 79)

Note that vowel prothesis seems to have applied across the board, including in the case of borrowings from other languages, e.g. from English, as the second example in (21) shows. This indicates, given the phonetic differences between French and English, that the exact phonetic realization of the /s/ + obstruent onset cluster in the donor language is not a factor, that such clusters are illicit and that in their resolution early Trinidadian appears to have resorted uniformly to the prothetic vowel [å].

3.7

In at least some Atlantic French creoles, e.g. Guadeloupean (section 3.2), Martinican (section 3.4) and Guyanais (section 3.5), the prothetic vowel occurs even in forms such as [åstay] 'statue', with the [-back, +high, +round] vowel [y] instead of the regular reflex [i] or [u] of French /y/. Now, this shows that the form at issue is a partially Frenchified one (see also the discussion on [y] in Haitian, in 3.1). In fact, “this refrancisation or ‘re-Frenchification’ is a sociolinguistic marker in the francophone Caribbean” (Holm 2000: 148).

In Guadeloupean, Martinicain and Guyanais then, the well-formedness constraint *ONS/sO thus proves in a sense more resistant than the markedness constraint *VFRONT-ROUND militating against the occurrence of [-back, +round] vowels. Incidentally, for Guadeloupean at least, this confirms Hazaël-Massieux’s claim that “even taking into account the most acrolectal varieties of this creole, some syllabic patterns are always excluded” (Hazaël-Massieux 1993: 113).

Leaving out the constraints securing the emergence of a prothetic vowel (for which see 4), the relevant subhierarchies are:

(22) basilectal variety: *ONS/sO, *VFRONT-ROUND >> IDENT [round]-IO 
ationrolectal variety: *ONS/sO, IDENT [round]-IO >> *VFRONT-ROUND

These subhierarchies account for the way the input /stay/ surfaces in the basilectal and in the acrolectal variety respectively. Consider the corresponding evaluations in (23) and (24) below:

(23) /stay/ *ONS/sO *VFRONT-ROUND IDENT [round]-IO
    âs.ta.ty
    ñs.ta.ti
4.

In some Atlantic English pidgins or creoles, e.g. Cameroon Pidgin English, anaptyxis occurs only in the case of two-consonant onset clusters, and involves epenthesis (see Avram 2002). In the Atlantic French creoles, as shown above (sections 3.1 through 3.6), both three- and two-consonant onset clusters are treated uniformly, being broken up by a prothetic vowel, mostly [å], occasionally [i].

Consider, for instance, Guadeloupean in which French *staff* becomes [ås.tad] (where the dot marks a syllabic boundary). Since deletion of a consonant is not an available option, MAX-IO dominates DEP-IO. This suggest the following provisional constraint hierarchy:

(25) \[ *\text{ONS/sO}, \text{MAX-IO} >> \text{DEP-IO} \]

The evaluation of this case of anaptyxis, obtaining from the ranking in (25), is offered in tableau (26):

(26) \[
\begin{array}{|c|c|c|c|}
\hline
/stad/ & \text{*ONS/sO} & \text{MAX-IO} & \text{DEP-IO} \\
\hline
\text{stad} & & *! & \\
\text{tad} & & *! & \\
\text{? se.tad} & & * & \\
\hline
\end{array}
\]

Since this hierarchy yields a tie, new constraints need to be added. One such constraint is CONTIG-IO, violated by the candidate [se.tad]. To ensure its elimination in favour of the correct output [ås.tad] \[\text{CONTIG-IO} \text{ must dominate DEP-IO} \]

(27) \[ *\text{ONS/sO}, \text{MAX-IO, CONTIG-IO} >> \text{DEP-IO} \]

This ranking is supported by the evaluation in tableau (28):

(28) \[
\begin{array}{|c|c|c|c|c|}
\hline
/stad/ & \text{*ONS/sO} & \text{MAX-IO} & \text{CONTIG} & \text{DEP-IO} \\
\hline
\text{stad} & & *! & & \\
\text{tad} & & *! & & \\
\text{se.tad} & & & *! & * \\
\text{ås.tad} & & & & * \\
\hline
\end{array}
\]

Finally, the optimal form [ås.tad] also violates L-ANCHOR. It follows that L-ANCHOR is dominated by CONTIG-IO. The constraint hierarchy is:
(29) \(\text{ONS}/\text{sO}, \text{MAX-IO}, \text{CONTIG-IO} \gg \text{DEP-IO}, \text{L-ANCHOR}\)

Tableau (30) lays out the interaction of these constraints:

(30)

<table>
<thead>
<tr>
<th>/stad/</th>
<th>*ONS/sO</th>
<th>MAX-IO</th>
<th>CONTIG</th>
<th>DEP-IO</th>
<th>L-ANCHOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>stad</td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>tad</td>
<td>*!</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>sad</td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>se.tad</td>
<td></td>
<td>*!</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>âs.tad</td>
<td></td>
<td></td>
<td></td>
<td>*</td>
<td>*</td>
</tr>
</tbody>
</table>

To sum it up then, the site of the anaptyctic vowel in Atlantic English creoles, such as Cameroon PE, and in Atlantic French creoles, e.g. Guadeloupean, is a consequence of the difference in the constraint hierarchies (see Avram 2002):

(31) a. Cameroon Pidgin English:
\[*\text{ONS}/\text{sO}, \text{MAX-IO}, \text{L-ANCHOR} \gg \text{DEP-IO}, \text{CONTIG-IO}\]

b. Guadeloupean:
\[*\text{ONS}/\text{sO}, \text{MAX-IO}, \text{CONTIG-IO} \gg \text{DEP-IO}, \text{L-ANCHOR}\]

The key subhierarchies and their effects are presented below:

(32) a. \text{L-ANCHOR} \gg \text{DEP-IO}, \text{CONTIG-IO}; effect: epenthetic vowels
b. \text{CONTIG-IO} \gg \text{DEP-IO}, \text{L-ANCHOR}; effect: prothetic vowels

A question, not devoid of interest, arises then: why do Atlantic French creoles resort to vowel prothesis whereas their English counterparts, in which anaptyxis occurs, resort to epenthetic vowels?

The influence of substrate languages has been mentioned for Guadeloupean in particular by Hazaël-Massieux (1993), and for the ranking of constraints in any given creole by Singler (1996a and 1996b). Such an explanation is ruled out, however, given the essentially identical substrate of both English and French Atlantic creoles.

In his turn, Holm (1988: 110, and 2000) points to a possible Portuguese influence on Guyanais, but this would anyway leave unaccounted for the occurrence of vocalic prothesis in other Atlantic French creoles.

Dialectal French influence, as suggested by Parkvall (2000b), cannot explain the presence of /s/ + obstruent clusters in the onset in some Atlantic French creoles (e.g. Louisianais, Dominican, St Lucian), in the absence of any detailed evidence on the dialectal differences in the superstratal input.

Finally, the tendency in \textit{français populaire} to add a prothetic vowel, mentioned by Jourdain (1956), cannot explain why this tendency has not manifested itself in those Atlantic French creoles which do allow /s/ + obstruent clusters in the onset as well.
I would like to claim that the issue should be addressed from a different perspective. Epenthetic vowels increase the number of CV syllables, as in e.g. Cameroon Pidgin English [si.pik] (E speak) ‘to speak’. This is then an illustration of a universal tendency in syllable types. CV syllables are the unmarked type and prevail, not surprisingly, in creole languages, as pointed out by Holm (1988: 110, and 2000) and Parkvall (1999 and 2000b). This is the case of Atlantic English creoles. On the other hand, prothetic vowels necessarily yield VC syllables, e.g. Guadeloupean [ .tad], thus running counter to the prevailing syllable type.

However, according to Hock (1991: 126), there is another universal tendency regarding the site of the anaptyctic vowel in the environment /s/ + obstruent: “[...] the different possible approaches [...] , the most popular seems to be [...] prothesis”. This is the case of e.g. Hindi. According to Steriade (1996: 136), “Hindi inserts i before s-obstruents clusters, and schwa between other C sequences”. Hock (1991: 126) further states that “[a]naptyxis into the [s + stop] cluster [...] is less commonly employed”. Consider the adaptation in Panjabi of the English loanword station [steω χn] as [sate: an] (Hock 1991: 126). Not only languages, e.g. Hindi and Panjabi respectively, may differ in the strategy used for the resolution of such illicit clusters, but also different dialects of the same language. Thus, the English loanword station [steω χn] appears in some Hindi dialects (Hyman 1975: 163) as [iste χn] but in others as [sx-te χn].

In onset position then, s + stop clusters are more frequently broken up by anaptyxis in front of rather than into the cluster, i.e. prothetic vowels appear to be cross-linguistically more common than epenthetic ones. This is precisely the tendency illustrated by the Atlantic French creoles discussed in sections 3.1 through 3.6.

On this analysis then, the resolution of illicit /s/ + obstruent onset clusters both in English and in French Atlantic creoles implements universal tendencies, by means of a different ranking of constraints.

5.

Having seen, in sections 3.1 through 3.7, that a number of Atlantic French creoles resort to vowel prothesis in the resolution of illicit onset clusters, a question that needs to be answered is: what is synchronically the phonological status of the prothetic vowel in the languages at issue?

Nikiema (2000) analyzes the phonological status of the initial vowel in Haitian words such as the following:

(33) èspas (F espace) ‘space’ (Nikiema 2000: 172)

(34) èspò (F sport) ‘sport’ (Nukiema 2000: 172)

As can be seen, in (33) the vowel [å] is diachronically a reflex of the vowel in the etymon, whereas (34) illustrates vowel prothesis.

Nikiema (2000) discusses three different theoretical options with respect to the status of these vowels. A first hypothesis would posit that vowels preceding /s/ + obstruent clusters are part of the underlying representation.
According to Nikiema, this analysis would incorrectly suggest that the initial vowel in \textit{èspas} and in \textit{èspò} have the same phonological status. In addition, given that the initial vowel in words such as \textit{èspò} unaccounted for if a lexical vowel /å/ is posited.

In an alternative hypothesis, the absence of /s/ + obstruent clusters would be due to a phonotactic constraint of Haitian, and vowel prothesis a repair strategy to avoid its violation. Nikiema dismisses this second analysis as well on two grounds. It says nothing about the syllable representation of /s/ + obstruent clusters. Moreover, it stipulates the position where the vowel [å] is added, i.e. always before the /s/ + obstruent onset cluster of the etymon, never between /s/ and the obstruent. As anaptyxis never occurs into the /s/ + obstruent onset cluster, forms such as the one below, as a potential reflex of \textit{F sport}'sport', are not attested:

\begin{equation}
\text{(35) *} \text{sèpò}
\end{equation}

Nikiema (2000) opts for a third hypothesis. On this analysis, initial /s/ + obstruent clusters are heterosyllabic in underlying representations. However, some vowels preceding the /s/ + obstruent clusters are lexical, as the [å] in:

\begin{equation}
\text{(36) èspas (F \textit{Espace}) 'space'}
\end{equation}

Prothetic vowels, on the other hand, are inserted on the surface. This would be the case of the [å] in a word such as:

\begin{equation}
\text{(37) èspò (F \textit{sport}) 'sport'}
\end{equation}

In support of his analysis, Nikiema (2000) adduces the following pieces of empirical evidence. His first piece of evidence comes from dialect variation. He notes that forms without a prothetic vowel do occur in the speech of some monolingual speakers of Haitian. Consider, for instance:

\begin{equation}
\text{(38) spò (F \textit{sport}) 'sport'}
\end{equation}

Other variants, however, are not attested, such as the following potential alternative reflex of \textit{F espace}'space':

\begin{equation}
\text{(39) *spas}
\end{equation}

Nikiema interprets the variation \textit{èspò} \textasciitilde \textit{spò} as evidence for an underlying empty nucleus: /_s.pò/ (henceforth an underscore symbolizes an empty nucleus). This would be in line with current phonological theory. Indeed, "a possible function of empty slots is to serve as placeholders within lexical items" (Broselow 1996: 182). Moreover, "[t]hese empty slots may themselves remain unfilled", but "[m]uch more common are cases in which an empty slot is filled"

Nikiema's second piece of evidence is the occurrence or not of amalgamation of the French definite article. Thus, according to him, Haitian
words with lexical initial vowels have variants with an initial /l/. Consider, for example:

(40)  èspas ~ lèspas (F: *espace) 'space'

On the other hand, words with a prothetic [å] do not:

(41)  èspò ~ *lèspò

Amalgamation of the French definite article is also interpreted as evidence for an underlying empty nucleus /_s.pò/. Again this is in line with current phonological thinking, as empty slots may serve to block phonological rules (Broselow 1996: 182).

On the basis of the empirical evidence presented, Nikiema (2000) concludes that in Haitian, in words such as èspò (F: *sport) 'sport' /s/ + obstruent clusters are underlyingly coda + onset sequences, with /s/ preceded by an empty nucleus. That is, the underlying representation of such a word is /_s.pò/. The empty nucleus is filled on the phonetic level with the default epenthetic vowel [å]. Note that the latter assumption also accords well with another tenet of current phonology, according to which "an empty slot is filled at some point in the derivation" (Broselow 1996: 183).

In what follows, I would like to suggest an alternative, non-derivational analysis. In doing so, I will also look at empirical evidence from other French Atlantic creoles.

In a nutshell, the whole issue essentially centers on which of the following competing underlying representations should be posited for e.g. Guadeloupean èstad

(42)  /_s.tad/ vs /ås.tad/

First, I translate into optimality-theoretic terms Nikiema’s assumption that words with prothetic [å] have an underlying empty nucleus which is filled on the surface. I suggest the following undominated constraint which secures the elimination of candidates such as [ _s.tad]:

(43)  *EMPTYNUCLEUS: no initial empty nucleus

The relevant constraint hierarchy is now:

(44)  *ONS/SO, *EMPTYNUCLEUS, MAX-IO, CONTIG-IO >> DEP-IO, LEFT-ANCHOR

I assume the so-called richness of the input, i.e. that no constraints hold at the level of underlying forms (Kager 1999: 19). Accordingly, constraints interact exclusively at the level of the output. One consequence of this assumption is that the underlying representation is irrelevant. The interaction of the constraints in (44) will still secure the selection of [ås.tad] as the optimal output form, regardless of whether we posit /_s.tad/ or /ås.tad/ as the underlying representation. This is shown by the evaluations in tableaux (45) and (46):
To solve the problem of indeterminacy, I further assume lexicon optimization. This principle may be roughly formulated as follows: in the absence of empirical evidence for one input over another, select the input closest to the output. This amounts to selecting either the input that results in the fewest constraint violations or the input which violates the fewest high-ranking constraints (see Kager 1999: 33). This is illustrated by the tableaus des

<table>
<thead>
<tr>
<th>Input</th>
<th>Output</th>
<th>*ONS/SO</th>
<th>*EMPTY N</th>
<th>MAX-IO</th>
<th>CONTIG</th>
<th>DEP-IO</th>
<th>L-ANCHOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>ås.tad</td>
<td>ås.tad</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>/s.tad</td>
<td>/s.tad</td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

On this analysis, /ås.tad/ turns out to be the optimal input, the most faithful to the optimal output form [ås.tad] in Guadeloupean.

This claim accords well with an analysis in Jacobs (1999). According to Jacobs, given lexicon optimization loanwords that are adapted to the native phonology eventually have their input altered. Going back to our example, this means that the original (French) input e.g. /stad/, in (30), becomes in e.g. Guadeloupean /ås.tad/, as in (47).

It might be argued that the analysis outlined above is strictly based on theory-internal arguments. Therefore, in what follows I will turn to an examination of empirical evidence from several Atlantic French creoles. Some circumstantial evidence in support of my analysis is discussed in section 6.

Consider first the issue of variation in the vowel preceding the /s/ + obstruent cluster. Nikiema (2000) claims that only the vowel [ä] occurs in this position. However, the picture that emerges from the empirical data from other
Atlantic French creoles is rather more complex. Thus, there are forms which exhibit only prothetic [ä]:

(48) Guadeloupean:
èskándal (F scandale) ‘scandal’ (Ludwig & al. 1990: 389)
èskélèt (F squelette) ‘skeleton’ (Ludwig & al. 1990: 389)

(49) Marie-Galantois:
èsprennté (F sprinteur) ‘sprinter’ (Tourneux & al. 1990: 122)
èstasyonné (F stationner) ‘to stop a car’ (Barbotin 1995: 86)

(50) Martinican:
èspéyal (F spécial) ‘special’ (Pinalie 1992: 206)
èskòpyon (F scorpion) ‘scorpion’ (Pinalie 1992: 198)

Other lexical items, however, illustrate the alternation [ä] ~ [i]:

(51) Guadeloupean:
èspò ~ ispò (F sport) ‘sport’ (Ludwig & al. 1990: 391)
èstab ~ istab (F stable) ‘stable’ (Ludwig & al. 1990: 391)

(52) Marie-Galantois:
èspéyal ~ ispéyal (F spécial) ‘special’ (Tourneux & al. 1990: 121)
èstaj ~ istaj (F stage) ‘stage’ (Tourneux & al. 1990: 122)

More significantly, still other forms only have a prothetic [i]:

(53) Guadeloupean:
istop (F stop) ‘stop’ (Ludwig & al. 1990: 391)

(54) Martinican:
istaj (F stage) ‘stage’ (Pinalie 1992: 206)
istiilo (F stylo) ‘fountain pen’ (Pinalie 1992: 207)

The obvious question that arises now is the following one. If the initial nucleus is indeed empty in the underlying representation, as claimed by Nikiema (2000), how can this predict the occurrence of [ä] only, in examples such as those in (48)–(50), of either [ä] or [i], as in (51)–(52), and exclusively of [i], in the forms under (53)–(54)? To account for this variation, [ä] and as [i] respectively must be present in the underlying representation, as in e.g. Guadeloupean /åskãdal/ ‘scandal’ or Martinican /istilo/ ‘fountain pen’. On currently available evidence, Guadeloupean, Marie-Galantois and Martinican thus appear to be languages with two epenthetic vowels, both lexical (cf also Steriade 1996: 136).

Next, the site of the anaptyctic vowel is not stipulated, as maintained by Nikiema (2000). It falls out from the constraint hierarchy in (30), repeated for convenience here:
(55) ONS/sO, MAX-IO, CONTIG-IO >> DEP-IO, L-ANCHOR

The crucial subhierarchy in (33b), repeated for convenience here, is:

(56) CONTIG-IO >> DEP-IO, LEFT-ANCHOR

As for forms such as spò (F sport) 'sport', with no prothetic vowel, occurring in the speech of monolingual speakers of Haitian (Nikiema 2000), I would like to claim that this is merely the effect of "Frenchification" (Holm 2000: 148). Even monolingual speakers of creole are exposed to (some) French. They are therefore aware of the "intrusive" vowel in creole forms and delete it, thereby producing more French-like variants. On this view, [a] in e.g. èspas (F espace) 'space' is not deleted, since *spas would not be a more French-like form. The occurrence of competing variants, with and respectively without prothetic [ä] can be accounted for in terms of "multiple storage" in the sense of Jacobs (1999). Accordingly, basilectal varieties store prothetic /ä/, respectively /i/, whereas the underlying representation of Frenchified variants (in acrolectal and urbanized varieties or even in the speech of monolingual speakers of Haitian) does not include the prothetic vowel.

In addition, the account outlined makes the following prediction. It predicts the occurrence of hypercorrect forms in which an [ä], although a reflex of an existing initial vowel in the etymon, is deleted, just like prothetic [ä]. This is indeed what has been reported in the literature. Thus, Jourdain (1956: 21) mentions in Martinican cases of hypercorrection such as the replacement of the sequence /es/ + obstruent:

(57) spadrilles (F espadrilles) ‘espadrilles’ (Jourdain 1956: 21)

Finally, amalgamation of the French definite article does occur even in reflexes exhibiting prothetic [ä]. Consider the following alternative forms:

(58) Guadeloupean:
èstasyon ~ lèstasyon (F station) ‘station’ (Ludwig & al. 1990: 391)

(59) Martinican:
èstati ~ lèstati (F statue) ‘statue’ (Pinalie 1992: 206)

To account for the occurrence of alternative forms, I first suggest the constraint *AMALGAM, defined as follows:

(60) *AMALGAM: no amalgamation of the definite article

The relevant constraint hierarchies are:

(61) *ONS/sO, *AMALGAM, MAX-IO, CONTIG-IO >> DEP-IO, L-ANCHOR
 *ONS/sO, MAX-IO, CONTIG-IO, L-ANCHOR >> DEP-IO,
 *AMALGAM
The evaluations in tableaux (62) and (63) illustrate the interaction of these constraints:
Prothetic [å] thus does not block amalgamation of the French definite article. With respect to amalgamation, prothetic [å] behaves exactly as the first, undoubtedly lexical vowel in e.g. the following Guadeloupean doublets:

\[\text{èspwa} \sim \text{lèspwa} \quad (\text{F espoir}) \quad \text{‘hope’ (Ludwig & al. 1990: 120)}\]

This again suggests that the prothetic vowel [å] too is lexical. In other words, the corresponding underlying representations of e.g. Guadeloupean èstasyon and Martinican èstatið and /åstati/ respectively.

To conclude, the empirical evidence examined in this section from a number of Atlantic French creoles shows that the prothetic vowel, [å] or occasionally [i], should be viewed, contra Nikiema (2000), as lexical.

6.

At this point, I think it would be instructive to look at some comparative circumstantial evidence from other French-based creoles.

Consider first the situation in the Isle de France creoles of the Indian Ocean, primarily Mauritian and Seychelles Creole. The inclusion of these varieties in the Atlantic creoles is controversial and, in addition, subject to a certain inconsistency. Some creolists believe such an affiliation would be warranted on structural grounds. Thus, Holm (1988: 11–12) writes that “[b]ecause of their structural affinities, there may be grounds for also including among the Atlantic creoles the Isle de France creoles of the Indian Ocean”. Holm (2000: 86) states that “there is general agreement that Isle de France creoles are structurally quite similar to those of the New World”. Others look at the substratal input. For Parkvall (1999: 29), for instance, Atlantic creoles
“include restructured languages of European lexifiers and at least partly Niger-20. Consequently, the group of Atlantic creoles “includes the so-called Isle-de-France Creoles”. While Mauritian is included among the Atlantic creoles examined in Parkvall (2000a) as well, in Parkvall (2000b) the Isle-de-France creoles are no longer considered Atlantic creoles21. Still, Mauritian and Seychelles Creole can provide useful comparative evidence, even if only circumstantial.

6.1

With respect to Mauritian, Baker (1972: 45) notes that in “Kreol terms which include syllables with [...] (st)-, (sk)-, (sp)-” these consonant clusters when they “are found word-initially [...] are frequently preceded by prothetic (e)”22:

(65) ⁶sper (E spare) ‘spare part’ (Baker 1972: 45)
⁶spor (F sport) ‘sport’ (Baker 1972: 45)

6.2

The consonant onset clusters permitted in Seychelles Creole are not discussed in Corne (1977, 1979) or in Bollée (1977). Two-consonant onset clusters of the type /s/ + obstruent are attested in a number of lexical items, most of them borrowings from English, occurring e.g. in the texts in Bollée (1977):

(66)  spesjal (F spécial) ‘special’ (Bollée 1977: 98)
    stend (E taxi stand) ‘taxi stand, bus terminal’ (Bollée 1977: 94)

On the other hand, the most comprehensive dictionary of Seychelles Creole at my disposal by D’Offay and Lionnet (1982) includes several instances of vowel prothesis in reflexes of etyma with /s/ + obstruent onset clusters:

(67)  espesyal (F spécial) ‘special’ (D’Offay and Lionnet 1982: 102)
    espesyalis (F spécialiste) ‘specialist’ (D’Offay and Lionnet 1982: 102)
    estati (F statue) ‘statue’ (D’Offay and Lionnet 1982: 103)
    estik (F stuc) ‘stucco’ (D’Offay and Lionnet 1982: 103)
    estike (F stuquer) ‘to put concrete on the ground’ (D’Offay and Lionnet 1982: 103)
    eskandal (F scandale) ‘scandal’ (D’Offay and Lionnet 1982: 102)
    eskapiler (F scapulaire) ‘cloth worn by monks’ (D’Offay and Lionnet 1982: 102)

Note that some of the forms above, i.e. espesyal and espesyalis, must have entered the language rather recently. Moreover, a form such as espesyal appears to compete with spesjal, the only form occurring in Bollée (1977). The existence of alternative forms again suggests that those with a prothetic vowel are more basilectal, whereas those without it are acrolectal variants.
Significantly, as in Guadeloupean (see 3.2) and Martinican (see 3.4), there are also alternative forms exhibiting amalgamation of the definite article. Consider the examples below:

(68)  
\begin{itemize}
  \item \(\text{espatil} \sim \text{lespatil}\) (F \text{spatule}) ‘spatula’ (D’Offay and Lionnet 1982: 102 and 236 respectively)
  \item \(\text{eskandal} \sim \text{lescandal}\) (F \text{scandale}) ‘scandal’ (D’Offay and Lionnet 1982: 102)
\end{itemize}

As can be seen, lexical items with a prothetic vowel can have variants with an initial /l/, i.e. evincing amalgamation of the original French definite article, just like words with unquestionably initial lexical vowels. Since prothetic vowels in Seychelles Creole are not phonologically different from the latter, they should be analyzed as being part of the lexical representation of the respective words.

6.4

Further comparative circumstantial evidence can be adduced from Reunionnais too. As is well known, the status of this variety is a matter of some dispute in the literature. Some creolists, such as Holm (1989: 392) treat it as a semi-creole\textsuperscript{23}. Thus, Holm (1989: 395) writes that “Réunionnais is not a completely creolized variety of French but rather one that has undergone relatively minor structural adjustments in the course of its contacts with other languages”. Others, e.g. Chaudenson (1974) or Corne (1999: 68–73) treat this variety as a creole. Whatever its exact status, I think it is worthwhile examining the situation in Réunionnais as well.

Thus, Chaudenson (1974: 651) notes the occurrence of “several cases of vowel prothesis”. Other instances can be found in Armand (1987) and Baggioni (1990). Consider the examples below:

(69)  
\begin{itemize}
  \item \(\text{êspézial} / \text{êspéyal}\) (F \text{spécial}) ‘special’ (Armand 1987: 90)
  \item \(\text{ësportif}\) (F \text{sportif}) ‘sportsman’ (Armand 1987: 90)
  \item \(\text{éstatu}\) (F \text{statue}) ‘statue’ (Chaudenson 1974: 651)
  \item \(\text{ëstop}\) (F \text{stop}) ‘stop’ (Armand 1987: 90)
  \item \(\text{éskapilèr}\) (F \text{scapulaire}) ‘cloth worn by monks’ (Baggioni 1990: 85)
  \item \(\text{éskilte:\textsuperscript{r}}\) (F \text{sculpteur}) ‘sculptor’ (Chaudenson 1974: 651)
  \item \(\text{eskorpion}\) (F \text{scorpion}) ‘scorpion’ (Baggioni 1990: 301)
\end{itemize}

Note that the prothetic vowel [å] occurs even in a more French-like variant [åstaty], with the [-back, +high, +round] vowel [y], such as \(\text{éstatu}\) [åstaty]\textsuperscript{24}. According to Baggioni (1990: 371), the vowel [y] occurs in acrolectal and urbanised varieties. This is exactly the situation that I noted in Guadeloupean and Guyanais (section 3.7).

As in Martinican (see 3.4), hypercorrect variants have also been recorded:
As in Guadeloupean (section 3.2), Martinican (section 3.4) and Seychelles Creole (6.2) variants exhibiting amalgamation of the definite article:

(71)  
| èstati (Baggioni 1990: 85) ~ lèstati (Armand 1987: 201) | (F statue) ‘statue’ |
| èstatu (Baggioni 1990: 85) ~ lèstatu | (F statue) ‘statue’ |
| èstop ~ lèstop (F stop) | (Armand 1987: 90) ‘stop’ |
| èskorpion ~ lèskorpion (F scorpion) | ‘scorpion’ (Baggioni 1990: 184) |

The doublets in (71) are similar to those in which the vowel [å] is the reflex of the initial vowel in the etymon and is therefore undoubtedly lexical. Consider, for instance, the alternative forms below:

(72)  
| èspès ~ lèspès (F espèce) | ‘sort of’ (Armand 1987: 201) |

Prothetic [å] in the variants with amalgamated definite article in (71) therefore is not phonologically different from the clearly lexical vowel [å] in a form such as that in (72). Consequently, prothetic [å] should be treated as being lexical as well.

Finally, some forms appear to occur only with the amalgamated definite article:

(73)  
| lèspor (F sport) | ‘sport’ (Armand 1987: 201) |

The existence of such forms is strong evidence for the lexical status of the prothetic vowel [å] in Réunionnais.

7.

This paper has examined the status of prothetic vowels in the French Atlantic creoles in the reflexes of etyma with /s/ + obstruent onset clusters. The phenomena analyzed have included variation of the prothetic vowel, Frenchified variants, hypercorrect forms and amalgamation of the French definite article.

The analysis of empirical data from Haitian, Guadeloupean, Marie-Galantois, Martinican, Guyanais and early Trinidadian leads to the conclusion that the prothetic vowel, [å] or [i], is lexical in these six Atlantic French creoles. This conclusion is further supported by circumstantial evidence from three other French-based varieties from the Indian Ocean, i.e. Mauritian, Seychelles Creole and Réunionnais.


**Notes**

1. The bulk of the lexicon of French creoles is of French origin. Therefore, “borrowings” or “loanwords” should be construed as neologisms or words which are not part of the creole lexicon proper.


3. *Francisées* in the original.

4. *Francisante* in the original.

5. Especially so since, according to Cadely (1988: 78), “Haiti is one of the territories called ‘francophone’ where monolingualism is at its strongest”. According to Hazaël-Massieux (1999: 17) “90 % of the Haitian population is monolingual creolophone”.

6. The circumflex accent indicates nasalization.

7. Orthographically è.

8. Orthographically  è.

9. Phonetically [ästaty].

10. This dictionary “concerns essentially the creole of Marie-Galante” (Hazaël-Massieux 1999: 285).

11. Orthographically è. The occurrence of è in two of the examples from Barbotin (1995: 86) is, presumably, a misprint: èskarifyé and èskopyon should read èskarifyé and èskopyon respectively. This has been corrected in (18).

12. Thus, Barbotin (1995: 86) explicitly adds that èskarifyé is a “rairly recent word” while èspörtif, èstaj, èstasyonné, èstilo and èstop are each classified as “new word”.

13. Where è

14. \( t \) = [tšt].

15. Orthographically è.


17. Where the word-initial è stands presumably for [ä].


20. Mauritian and Seychelles Creole are treated as Atlantic varieties in Avram (2000).


23. The term designates varieties that have both creole and non-creole features without having ever been basilectal creoles (Holm 1988: 9–10).

24. The usual reflex of French /y/ is [i] in Réunionnais, as in the alternative form [ästati].

25. Phonetically [ästaty].

26. Chaudenson (1974: 651) mentions only the form with initial prothetic vowel. Both Armand (1987: 90) and Baggioni (1990: 184) list only the form with the amalgamated definite article.