The emergence of productive morphology in creole languages:
The case of Haitian Creole*

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0. Introduction

The most intriguing question about creole languages is without doubt that of how they come about. This paper addresses the problem of the emergence of productive morphology in these languages on the basis of the case study of Haitian Creole (henceforth HC). The aim of this paper is threefold: 1) propose methodologies that need to be developed in order to study the morphology of creole languages; 2) present a scenario of the emergence of productive morphology in these languages within the framework of what has come to be known as the relexification account of creole genesis (Lefebvre 1998 and the references therein)[1]; and 3), address the current issues bearing on the study of the derivational morphology of creole languages on the basis of the data discussed in this paper.

 The paper is organised in the following way. Section 1 addresses the problem of identifying affixes that are potentionally native (that is productive) to a given creole and proposes tests designed to identify this potentionally productive morphology. Section 2 addresses the issue of the productivity of the affixes identified as potentionally native to a

[1] This account of creole genesis is based on 25 years of funded (mainly by SSHRCC and FCAR) research that I conducted at UQAM and that involved various teams including colleagues and graduate students. For a history of this research, see the Preface to Lefebvre (1998).

given creole, since some forms that can be identified as potentially native to a creole on the basis of specific criteria may turn out to be unproductive when tokens of occurrence are taken into account. Section 3 is dedicated to developing methodologies for evaluating the productivity of forms that have been proposed to be productive affixes in the literature. The analyses presented in sections 2 and 3 provide us with a fairly accurate inventory of the productive morphology of HC. Section 4 addresses the question of the emergence of this morphology within the relexification account of creole genesis. Section 5 concludes the paper in addressing the issues that are currently at stake regarding the morphology of creole languages on the basis of the data discussed in the first four sections of the paper.

The research underlying this paper was conducted within the theoretical framework of generative grammar. Accordingly, affixes are assumed to have syntactic features, selectional properties and semantic features. Following di!Sciullo and Williams (1987), the morphological head is assumed to determine the syntactic category of a derived word; this head can either be its base or an affix that it contains. Other theoretical assumptions will be introduced in the text whenever necessary.

1.   Identifying affixes that are potentially native to a creole language

The discrepancy in the numbers of productive derivational affixes proposed by different authors for HC reflects the problem posed by the study of the morphology of creole languages. For example, while d'Ans (1968) claims no derivational affixes at all, Hall (1953) presents a list of over 70. Other authors present an inventory of about ten productive affixes (e.g. Filipovich 1987; Tinelli 1970; Valdman 1978; etc.), and still others an inventory of a lot more affixes (e.g. DeGraff 2001). It is a well known fact that creole languages derive the bulk of their vocabulary from their superstratum language. A word having internal structure in this language may, however, not have internal structure in the creole corresponding word. Consequently, an affix that is native to the superstratum language of a given creole may not have a similar status in the creole. Several authors point out the problem of treating the internal structure of Haitian words on a par with that of French ones (e.g. Brousseau, Filipovich and Lefebvre (henceforth BFL) 1989; Filipovich 1987; Tinelli 1970; Valdman 1978; etc.). Furthermore, how do we know whether the following Haitian words have internal structure: *wangatè* 'magician', *chichadò* 'stingy person', *avidèyman* 'visibly', *batisman* 'boat, ship', *bòlèt* 'lotery', *poulèt* 'pullet', etc.? Given this situation, tests are needed in order to determine whether a creole word has internal structure and what affixes are potentially native to a creole. In the paragraphs that follow, I review the tests that have been proposed by BFL (1989) on the basis of HC to identify affixes that are potentially native to a given creole.

3

First, a form is a potential native affix in HC if it is found affixed to a base that is foreign to French. For example, the verbalising suffix *-e* is such an affix, since it attaches to the noun *djòb* 'job' (borrowed from English) forming the verb *djòb-e* 'to work'. The attributive affix *-è* is also an affix of this type since it attaches to the noun *wanga* 'fetish' (of West African origin) to derive *wanga-t-è* 'magician' (where *-t-* is an epenthetic consonant).

Second, a form is a potential native affix in HC if it is used with a base that is derived from a French word that does not take the equivalent affix. For example, while the French inversive prefix *dé-* only attaches to transitive dynamic verbs, HC *de-* can attach to both transitive and intransitive verbs, whether dynamic or stative. Thus, HC has *de-pasyante* 'to get impatient' derived from *pasyante* 'to be patient', whereas French has *im-patienter* 'to get impatient'. Similarly, the HC nominalising affix *-ay* attaches to the base *kontre* 'to oppose' to form the noun *kontr-ay* 'opposition'. In French, there is no nominal derived from the verb *contrer*. Furthermore, the suffixes *-wa* and *-yen* in HC, which derive nouns referring to one's place of origin, are used on bases where we do not find them in French. For example, while in Haitian we find *Soudan-n-wa* 'Sudanese' and *Ougand-yen* 'Ugandan', in French we find *Soudan-ais* and *Ougand-ais*, respectively. Similarly, the attributive suffix *-è* (from French *-eur*) derives *langaj-è* 'chatterbox' from *langaj* 'language'. There is no French word derived from *langage* 'language' using *-eur*. Finally, the adverbial suffix *-man* (from French *-ment*) can attach to a base that is not a word in French; for example, it attaches to the adjective *alekout* (<French *à l'écoute*) 'attentive' to derive the adverb *alekout-man* 'attentively', or to *avidèy* (<French *à vue d'oeil*) 'visible' to derive the adverb *avidèy-man* 'visibly'.

Third, a form is a potential native affix in HC if it appears in a different position from the corresponding affix in French. For example, the diminutive affix in HC is the prefix *ti-* (e.g. *ti-moun* 'child'), whereas all diminutive affixes in French are suffixes (e.g. *garçon-n-et* 'little boy').

Fourth, a form is a potential native affix in HC if the semantic and syntactic properties of a word that it derives are different from those of the corresponding word in French. For example, the Haitian verb *bwa-z-e* 'to take to the woods' (where *-z-* is an epenthetic consonant) is derived from the noun *bwa* 'wood(s)' by means of the verbalising suffix *-e*. The corresponding verb in French, derived from *bois* 'wood(s)', is *bois-er*. The meaning of this verb, however, is 'to plant a forest', not 'to take to the woods'.

Fifth, if a morphological process in HC has no French counterpart, this argues that the process is potentially native to HC. The process of morphological conversion which derives nouns from verbal bases (e.g. *ale* 'to go' > *ale* 'action or result of going') and adjectives from verbal bases (e.g. *chire* 'to tear, rip' > *chire* 'torn, ripped') is one such example. As will

be shown in 4.1, while this process is very productive in HC, it had ceased to be productive in French by the 16th/17th centuries in favor of overt affixes (e.g. Haase 1975).

These tests help identify affixes that are potentially native to a given creole. They do not provide absolute results, however, for it could be the case that an affix has to be identified as being native to a given creole without any test identifying it. As will be shown in section 2.10, this is the case of the Haitian ordinal suffix.

The affixes identified as potentially native to a given creole further need to be argued to be productive, for two words that appear to be morphologically related may turn out to be the sole example of its kind. For example, as has been pointed by Crowley (ms:!11), in rural Bislama, the existence of the pair *flot* 'to float' and *flota* 'flotation device on fishing net' could suggest that Bislama has a suffix *-a* phonologically derived from English *-er*. Crowley remarks that in Bislama "this affix is still only marginal, as any number of logically possible nouns derived on the same pattern are simply not attested."

2. Evaluating the productivity of the affixes identified as potentially native to HC

Although there is no consensus in the literature as to how to define and measure morphological productivity (e.g. Aronoff 1976, 1980, 1983; Aronoff and Schvaneveldt 1978; Bauer 2001; Corbin 1987; Hay 2001; Plag 1999; etc.), the most important and rather uncontroversial criterion is that, for a process to be called productive, it must be available to speakers to form new words with sufficient frequency in a predictable manner. The frequency problem has received much attention in the recent literature (e.g. Bauer 2001, Hay 2001, Plag 1999, etc.), and a number of methodological tools have been proposed to solve and objectivise it, such as counting neologisms, counting hapaxes in large corpora, etc. At the time the research on HC morphology was conducted (between 1985 and 1993), large corpora were not available.[2] So we had to resort to counting, on the basis of data drawn from dictionaries and from elicitation sessions with native speakers, the number of morphological types supplemented by the number of neologisms involving a given form. A few tokens of a given morphological rule were considered not to be enough for it to qualify as productive. Furthermore, since we were interested in the mental lexicon, that is in the speaker's competence in using the lexical entries of his/her lexicon (including affixes) and of combining them to form words, we wanted to make sure that affixes that were identified as productive were in fact available to speakers to form new words. As for predictability, the following set of criteria were used. First, particular instances of a given form must share

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[2] Note that Jeff Allen is currently creating Haitian corpora that could eventually constitute basic tools for morphological frequency analyses.

meaning and syntactic features. Second, particular instances of a given form must share a coherent set of selectional properties. Third, the output resulting from the concatenation of a given form with a particular base must be predictable.

In this section, each affix identified as potentially native to HC in section 1 will be discussed in light of these criteria. The discussion builds mainly on work by Brousseau (1994), BFL (1989), Filipovich (1987) and Lefebvre (1998). The data are basically drawn from these author's fieldwork, from Valdman *et al*.' (1981) HC dictionary, from Védrine's (1992) dictionary of HC verbs, and from Freeman's (1988) inverse dictionary of HC.[3] Due to space limitation, only a few examples of words derived by means of the affixes discussed in this section will be provided. Additional data are easily accessible in the references cited for each affix.

2.1. The agentive suffix -*è*

The suffix -*è* derives agentive nouns from dynamic verbs. The output of this concatenation is a noun with the meaning 'one who VERBs'.

(1)   Agentive suffix -*è*: [V-*è*]$_N$

dechouk-è	'insurgent'	*dechouke*	'to uproot'
konsey-è	'counsellor'	*konseye*	'to counsel'
rans-è	'joker'	*ranse*	'to joke'
vant-è	'braggart'	*vante*	'to brag'

(=(2) in BFL 1989)

A sample of Haitian words derived by means of the agentive suffix -*è*, for which the corresponding French word has a different meaning from the Haitian, or for which there is no corresponding French word, is provided in Lefebvre (1998:!403). Words derived by means of this affix are numerous (e.g. Freeman 1988; Valdman *et al*. 1981).

2.2. The attributive suffix -*è*

There is another suffix -*è* which is attributive. As is pointed out in BFL (1989), this affix is distinct from the preceding one not only in meaning but also because it attaches to a nominal rather than a verbal base. The derived meaning is 'one who possesses or uses NOUN'.

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[3] More recent dictionaries such as Freeman and Laguerre (1996) were not available at the time the morphological data were gathered. Although no dictionary will ever be absolutely complete, Valdman *et al*. (1981) is an extremely reliable source of data. Using this source as our main source has no consequence on the global results of this research. For the sake of completeness, however, more dictionaries could be consulted. I leave this task for future research.

(2)   Attributive suffix -è: [N-è]$_N$

odyans-è	'joker'	*odyans*	'joke'
langaj-è	'chatterbox'	*langaj*	'language'
tafya-t-è	'alcoholic'	*tafya*	'alcoholic beverage'
wanga-t-è	'magician'	*wanga*	'charm'

(=(3) in BFL 1989)

A sample of Haitian words derived by means of the attributive suffix -è for which there is no French counterpart is available in Lefebvre (1998:!403–4) and in Valdman (1978: 140). There are numerous Haitian words that are derived by means of this affix (e.g. Freeman 1988; Valdman *et al.* 1981).

2.3. The verbalising suffix *-e*

The suffix *-e* derives verbs from nominal bases, as shown in (3).

(3)   Verbalising suffix *-e*: [N-*e*]$_V$

betiz-e	'to talk nonsense'	*betiz*	'nonsense'
kle-t-e	'to lock up'	*kle*	'key'
madison-n-e	'to cast a spell'	*madison*	'spell'
makak-e	'to hit with a stick'	*makak*	'stick'

(from Brousseau 1994; BFL 1989)

A large sample of Haitian verbs derived by means of the verbalising suffix *-e* for which there is no French counterpart or for which the French counterpart has a different meaning may be found in Lefebvre (1998:!404) and in Valdman (1978: 132). Again, several words derived by means of this affix are listed in Freeman (1988) and in Valdman *et al.* (1981).

2.4. Inversive and privative *de-*

The prefix *de-* is very productive in HC. It may derive new verbs that have a meaning opposite to that of the base form. A few examples are provided in (4).

(4)   The prefix *de-*: [*de-*V]$_V$: inversive meaning

deboutonnen	'to unbutton'	*boutonnen*	'to button'
dechaje	'to unload, to ejaculate'	*chaje*	'to load'
defèt	'to undo, to disconcert, to get rid of'	*fè*	'to do, to make, to produce'
defòme	'to deform'	*fòme*	'to form'
degonfle	'to deflate, to scatter, to make room for'	*gonfle*	'to blow up'
derespekte	'to be disrespectful'	*respekte*	'to respect'

(from Valdman *et al.* 1981)

Note that, as is pointed out by Damoiseau (1991: 33), affixation of *de-* to a verbal base may modify the aspectual properties of the verbal base. For example, while *respekte* 'to respect' is stative, *de-respekte* is dynamic. The prefix *de-* may also derive new verbs that are semantically ambiguous between an inversive and a privative interpretation. For example, *debare* in (5) can be interpreted either as having an inversive 'to unblock' or a privative 'to remove the blocking material' interpretation. Likewise, *debouche* 'to open' can be assigned an inversive interpretation with respect to *bouche* 'to stop up', or it can be assigned a privative interpretation: 'to uncork' versus *bouche* 'to cork'. In a similar way, and as is discussed in Chaudenson (1996: 27), the verb *degrese* is ambiguous between an inversive reading 'to loose weight', and a privative one 'to remove fat'; and so on and so forth.

(5)   The prefix *de-*: [*de-*V]_V: inversive/privative meaning

debare	'to clean (remove obstacles)'	*bare*	'to block off, to fence in'
debouche	'to uncork, to open (bottle)'	*bouche*	'to stop up, to cork'
degrese	'to loose weight, to remove fat'	*grese*	'to grease, ot oil'
dekloure	'to remove nails'	*kloure*	'to nail'

(from Valdman *et al.* 1981)

The prefix *de-* may also participate in the derivation of new verbs that have a privative meaning. These cases involve a nominal base and the verbalising suffix *-e*, discussed above. The examples in (6) show the verb containing *de-*, the corresponding nominal base; they also show that the denominal verb (without *de-*) formed by affixation of *-e* is unattested.

(6)   The prefix *de-*: privative meaning

debagaje	'to move (change residence)'	*bagay*	'thing'	**bagaje*	
dechouke	'to uproot, to get someone fired, to remove from office, to plow'	*chouk*	'stump'	**chouke*	
degagannen	'to cut the throat of, to overcharge'	*gagann*	'throat'	**gaganne*	
degouse	'to shell, to husk'	*gous*	'pod, clove'	**gouse*	
dekreta	'to remove the crest'	*krèt*	'cockcomb'	**kreta*[4]	
dekwennen	'to skin'	*kwenn*	'rind'	**kwennen*	
demachwele	'to smash one's face in'	*machwè*	'jaw'	**machwèle*	
demwèle	'to remove the marrow'	*mwèl*	'marrow'	**mwèle*	

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[4] **kreta* is also discussed in DeGraff (2001:!80).

depaye	'to take apart a woven straw object'	*pay*	'straw, chaff'	**paye*
deplancheye	'to remove the floor boards'	*planche*	'wooden floor'	**plancheye*
devantre	'to disembowel'	*vant*	'belly, stomach'	**vantre*
dezose	'to debone'	*zo*	'bone'	**zose*

Derived words of the type of those in (6) are known as parasynthetics.[5] With Brousseau (1994), I assume that the inversive or privative interpretation of words containing the prefix *de-* follows from the semantics of the verbs it attaches to.

2.5. The diminutive prefix *ti-*

The Haitian noun *pitit* 'child' (Valdman *et al.* 1981) has a reduced form *ti* 'kid' (Valdman 1996). The adjective *piti* 'small' has a reduced form *ti* 'small, little' (Valdman *et al.* 1981). The short form of both words serves as a prefix that attaches to nominal bases. Its meaning with animate bases is 'a young NOUN', as is illustrated in (8) and (9).

(8)	*ti-chat*	'kitten'	*chat*	'cat'
	ti-chen	'puppy'	*chen*	'dog'
	ti-towo	'calf'	*towo*	'bull'
				(from Valdman *et al.* 1981)
(9)	*ti-nèg*	'young man'	*nèg*	'man'
	ti-moun	'child'	*moun*	'person'
	ti-bèt	'insect, bug'	*bèt*	'animal'
	ti-gason	'boy'	*gason*	'male (man, boy), waiter'
	ti-medam	'young ladies, girls'	*medam*	'women, ladies'
				(from Valdman 1996; Valdman *et al.* 1981)

With inanimate nominal bases, the prefix *ti-* has the meaning 'a small NOUN' (e.g. Filipovich 1987: 34–5; Sylvain 1936: 32; Valdman *et al.* 1981). This is illustrated in (10).

(10)	a.	*ti-flè*	'small flower'	*flè*	'flower'
		ti-chante	'small song'	*chante*	'song'
					(from Sylvain 1936: 32)
	b.	*ti-wòch*	'pebble'	*wòch*	'stone'
		ti-pyebwa	'bush'	*pyebwa*	'tree'
					(from Filipovich 1987: 34–5)
	c.	*ti-kiyè*	'teaspoon'	*kiyè*	'spoon'
		ti-van	'breeze'	*van*	'wind'

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[5] Various analyses of parasynthetics have been proposed in the literature. Due to limitation of space, the possible derivations are not discussed here.

Many Haitian words that are derived by means of the prefix *ti-* have no corresponding French words. A sample of these can be found in Lefebvre (1998:!403–4).

Since the prefix *ti-* is homophonous with the noun *ti* and the reduced form of the adjective *ti*, are there arguments in favor of the affixal status of *ti-* in the above examples? Filipovich (1987:!33–4) argues against an Adj + N analysis of the forms in (10) on the following grounds. First, the position of *ti-* contrasts with that of *piti*. While *ti-* always precedes the noun (a fact also mentioned in Valdman *et al.* 1981), *piti* never occurs in this position, as is shown in (11a). While *piti* always occurs as a stative predicate, *ti* never occurs with this function, as is shown in (11b).

(11)   a.   *piti   machin   yo   b.   *Machin   yo   piti/*ti*
           small   car   PL   car   PL   be-small
           [Lit.: 'the small cars']   'The cars are small.'

The complementary distribution of *ti* and *piti* argues against the adjectival status of *ti* in the examples in (10). Second, the nouns in (10) may be modified by the adjective *gran*'big', as in *se youn gran ti-wòch* 'It is a big pebble.' If *ti* were an adjective in the examples in (10), we would not expect the modifier *gran* to occur with it. If *ti* is an affix, however, the word that contains it can be modified by an adjective meaning 'big' yielding the interpretation 'for a small x, it is big', without there being any semantic contradiction. This argues in favor of the affixal status of *ti-* in (10). As for the nouns in (8), they can also be modified by an adjective meaning 'big', as in *yon gran ti-moun* 'a big child', thus arguing against an adjectival analysis of *ti-* in these cases as well.

Furthermore, on the basis of tests that distinguish between derivation and compounding, *ti-* can be argued to be an affix rather than part of a compound. First, in contrast to compound words, affixed words show more productivity and more semantic regularity (e.g. Allen 1978; Aronoff 1976; di!Sciullo and Williams 1987). Whereas the meaning of a compound cannot always be derived from its compositional meaning, the meaning of a productively derived word is predictable from the meaning of its affix. As is shown in (8) and (9), the meaning of the words containing *ti-* is predictable from the meaning of the affix. Although there are words containing *ti-* that manifest idiosyncrasies, as will be seen in section 5.4, the properties of *ti-* in (8) and (9), are those of a productive affix. Second, while it is not always possible to predict the actual combinations of words into compounds, an affix systematically attaches to all words that meet its subcategorization requirements. As we

saw above, *ti-* attaches in a regular way to nominal bases. I thus conclude that words containing *ti-* result from morphological derivation rather than from compounding.[6]

2.6. The nominalising suffix *-ay*

The suffix *-ay* derives nouns from two-place verbal predicates. The nouns so derived refer either to the action or to the result of the action denoted by the verbs.

(12)   Nominalising suffix *-ay*: [V-*ay*]$_N$

kontr-ay	'opposition'	*kontre*	'to oppose'
bwòt-ay	'moving'	*bwòte*	'to move'
dechouk-ay	'overthrow'	*dechouke*	'to uproot'
kapon-ay	'intimidation'	*kapone*	'to intimidate'

(=(6) in BFL 1989)

Although there is variation between speakers as to the properties of *-ay* (see Lefebvre 1998: 306–7), none of the speakers consulted accept a nominal structure where both arguments are realised in the syntax. Hence **dechoukay presidan pèp ayisyen an* with the reading 'the overthrow of the president by the Haitian population' is ruled out by both groups of speakers. The following two structures are found: *dechouk-ay presidan an* 'the overthrow of the president' or *dechouk-ay pèp ayisyen an* 'the overthrow by the Haitian population'.

A sample of Haitian words derived by means of the suffix *-ay* for which there are no French corresponding words is provided in Lefebvre (1998: 406) and in Valdman (1978: 136). Numerous Haitian words containing the nominalising suffix *-ay* are found in the inverse dictionary (Freeman 1988), and in Valdman *et al.* (1981).

2.7. Morphological conversion

Morphological conversion, a process that has been extensively discussed in the literature on Haitian (see Fauchois 1983; Filipovich 1987; Hall 1966; Sylvain 1936; Tinelli 1970; etc.), derives nouns and adjectives/participles from verbs.

Nouns that are derived from verbs by conversion refer either to the action or to the result of the action denoted by the verbal base. Some examples are provided in (13).

(13)   Nominalising conversion: [V]$_N$

ale	'action or result of going'	*ale*	'to go'
sòti	'action or result of going out'	*sòti*	'to exit'
vini	'action or result of coming'	*vini*	'to come'
rive	'action or result of arriving'	*rive*	'to arrive'
tonbe	'action or result of falling'	*tonbe*	'to fall'
desann	'action or result of descending'	*desan*	'to descend'

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[6] For a compounding analysis of the data in (8) and (9), see Valdman (1978: 155).

(from BFL 1989)

As is shown in BFL (1989), this process applies only to verbal bases having only one argument: unaccusative verbs (e.g. *ale* 'to go'), unergative verbs (e.g. *krache* 'to spit') and the intransitive versions of verbs which show a transitive/intransitive alternation (e.g. *bwòte* 'to move'). The derived noun has the predicate argument structure of the verbal base. In all cases, the single argument of the verb may be expressed in the syntax, as is illustrated in (14).

(14) a. *ale*   *Jan*   *an*   b. *bwòte*   *Mari*   *a*

 departure John   DET   moving Mary DET

 'John's leaving'   'Mary's moving'

(=(8a) in Lefebvre 1998:!308)

Nominal conversion is very productive in Haitian. Lefebvre (1998:!406) provides a sample of nouns derived by conversion and shows that only a few of them have a corresponding French noun derived by this process, even when 17th/18th century French data are considered. Védrine (1992) lists no less than sixty verbs that may be nominalised by means of this process. This process is in complementary distribution with the derivational process involving the suffix *-ay* (see (12)). (For a discussion of the pertinent facts, see BFL 1989: 15).[7]

Morphological conversion also derives adjectival and participial forms from a verbal base.[8] Védrine (1992: 167–8) lists 254 verbs that can be used as attributives. A few examples are reproduced in (15).

(15) Adjectival/participial conversion: $[[V]]_{A/PA}$

 abandonnen   'abandoned'   *abandonnen*   'to abandon'

 chire   'torn/ripped'   *chire*   'to tear/rip'

 boure   'stuffed'   *boure*   'to stuff'

 kwit   'cooked'   *kwit*   'to cook'

These derived forms are found in verbal and adjectival passive clauses, as illustrated in (16a), or in noun phrases, as in (16b).

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[7] Conversion is a process that manifests the properties of affixes. It is different from lexical entries created by relisting where each relisted entry needs to be specified for semantic and morphosyntactic properties because these are not always predictable (for discussion see Lieber 1992). In HC there are a few nouns that are created by relisting, *antre* (<Fr. *entrée* 'entrance') (as in 'the entrance to the house'), homophonous with the verb *antre* 'to enter'.

[8] Adjectival conversion in English is assumed to derive adjectives from the participial form of the verbs (e.g. Levin and Rappaport 1986). Brousseau (1994) argues that in HC deverbal adjectives and participial forms are both derived from the base form of verbs.

(16) a. *Vyann nan kwit.*   b. *vyann kwit la*

       meat DET cooked   meat cooked DET

       'The meat is cooked.' or   'the cooked meat'

       'The meat has been cooked.'   (=(9) in Brousseau 1994)

This derivational process applies to all verbs involving a change of state (e.g. (15)). It does not apply to verbs involving a change of location such as *ale* 'go', *pouse* 'push', *tire* 'pull', nor to verbs of movement such as *tonbe* 'fall', *sote* 'jump', *naje* 'swim'.

      I will assume without further discussion that both cases of morphological conversion can be represented in a unified way as $[[V]]_{N/A}$.

2.8. The adverbial suffix *-man*

The adverbial suffix *-man* selects adjectival bases as is examplified in (17).

(17) Adverbial suffix *-man*: $[A\text{-}man]_{Adv}$

    a. *mal-man* 'not as well, rather badly' *mal* 'badly'

       menm-man 'equally, the same' *menm* 'same'

       fini-man 'completely, quite' *fini* 'completed'

                 (from Freeman and Laguerre 1996)

    b. *angran-man* 'haughtily, imperiously' *angran* 'arrogant, haughty'

       mal-man 'not so well, rather badly' *mal* 'badly'

       menm-man 'equally, the same' *menm* 'same'

                 (from Valdman *et al.* 1981)

       banda-man 'elegantly' *banda* 'elegant'

       fin-man 'completely' *fin* 'complete'

                 (from Valdman 1978: 142)

    c. *avidèy-man* 'visibly' *avidèy* 'visible'

       alekout-man 'attentively' *alekout* 'attentive'

       bosal-man 'wildly' *bosal* 'wild'

       alèz-man 'comfortably' *alèz* 'comfortable'

       bòzò-man 'elegantly' *bòzò* 'elegant'

                 (A.-M. Brousseau's field notes)

There are no French adverbs corresponding to the Haitian examples in (17).[9]

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[9] Orjala (1970:!155) also notes what he refers to as 'hypercorrected' forms, where the adverbial suffix *-man* is attached to bases that are already adverbial:

(i) *toujou-man* (<Fr. *toujours* 'still, always') 'still, always'

    davans-man (<Fr. *d'avance* 'in advance') 'in advance'

2.9. The place of origin/residence suffixes *-wa* and *-yen*

The suffixes *-wa* and *-yen* derive nouns from nouns. The input noun is the name of a place and the output noun refers to a person who comes from that place, as in (18).

(18)   a.   Place of origin/residence suffix *-wa*: [N-*wa*]$_N$

Kap-wa	'from the Cape'	*Kap*	'Cape'
Petyonvil-wa	'from Pétionville'	*Petyonvil*	'Pétionville'
Senmak-wa	'from Saint-Marc'	*Senmak*	'Saint-Marc'
Soudan-n-wa	'from Sudan'	*Soudan*	'Sudan'
Tchad-wa	'from Chad'	*Tchad*	'Chad'

(A.-M. Brousseau's field notes)

   b.   Place of origin/residence suffix *-yen*: [N-*yen*]$_N$

Jakmèl-yen	'from Jacmel'	*Jakmèl*	'Jacmel'
Tibè-yen	'from Tibet'	*Tibè*	'Tibet'
Gan-yen	'from Ghana'	*Gana*	'Ghana'
Ougand-yen	'from Uganda'	*Ouganda*	'Uganda'
Pakistan-n-yen	'from Pakistan'	*Pakistan*	'Pakistan'
Ka-yen	'from Les Cailles'	*Okay*	'Les Cailles'

(A.-M. Brousseau's field notes)

The principles governing the choice between the two affixes *-wa* and *-yen* appear to be as obscure as those governing the choice between the French affixes which perform the same function. The question of how stable these derivations are across Haitian speakers is a question for future research.

2.10.   The ordinal suffix *-yèm*

This affix *-yèm* derives ordinal numbers from cardinal ones.

(19)   *santyèm*   'hundredth'

            katriyèm   'fourth'

            twazyèm   'third'   (from Valdman *et al.* 1981)

Although the morphophonemics of the Haitian examples in (19) is parallel to that of the corresponding French forms (/santyèm/, /katriyèm/, /trazyèm/), Brousseau (p.c.) remarks that it is unlikely that the creators of Haitian learned the ordinal numbers of French one by one. Brousseau thus proposes that, by virtue of its productivity, *-yèm* should be analysed as part of the inventory of Haitian affixes, even though it has not been identified as potentially native to Haitian on the basis of the criteria discussed in section 1. An argument supporting her claim is provided by data that she collected, which bear on the morphophonemics of the formation of cardinal numbers out of ordinal ones for some Haitian speakers. Brousseau's informants

have the forms in (20), where the morphophonemics of the Haitian derived forms differs from that of the French corresponding ones. Compare the forms in (20) with those in (19).

(20)   Ordinal suffix -*yèm*: [cardinal number -*yèm*]

san-yèm	'hundredth'	*san*	'hundred'
mil-yèm	'thousandth'	*mil*	'thousand'
kat-yèm	'fourth'	*kat*	'four'
twa-yèm	'third'	*twa*	'three'

<div align="right">(A.-M. Brousseau's field notes)</div>

2.11.   Summary

All the forms discussed in this section have the properties of productive affixes. Particular instances of each form share meaning, syntactic features and selectional restrictions. The outputs resulting from the morphological rules are predictable. The forms discussed in this section all occur with some frequency. Finally, a careful examination of Valdman *et al.*'s (1981) dictionary provides quite a large number of Haitian derived words which do not correspond to French derived ones, as well as Haitian derived words which have a different meaning than their French counterparts. On all these criteria, the affixes identified in section 1 as potentially native to HC turn out to indeed be genuine productive affixes in this language. The inventory of the productive affixes of Haitian, based on the analyses presented in this section, comprises eleven affixes. These are listed in Table 1.

Table 1: The inventory of HC productive affixes

Agentive suffix	-*è*	Nominalising suffix	-*ay*
base	V	base	V
output	N	output	N
Attributive suffix	-*è*	Conversion	–
base	N	base	V
output	N	output	N/A
Verbalising suffix	-*e*	Adverbial suffix	-*man*
base	N	base	A
output	V	output	Adv
Inversive/privative prefix	*de-*	Place of origin/residence suffixes	-*wa*/-*yen*
base	V	base	N
output	V	output	N
Diminutive prefix	*ti-*	Ordinal suffix	-*yèm*
base	N	base	Q
output	N	output	A

<div align="right">(adapted from Lefebvre 1998:!312)</div>

The morphological forms discussed in this section exhaust the list of derivational affixes identified as native to, and productive in, HC within the context of the UQAM HC projects.

3.   Evaluating other proposals in the literature

DeGraff (2001) claims that there are at least eight additional derivational affixes that are productive in HC. He identifies the prefix *en-*, and the suffixes *-ab*, *-adò*, *-èt*, *-man*, *-syon*, *-es* and *-te*. In this section, I discuss in detail the properties and the distribution of three of these forms: *en-*, *-èt*, and *-man*. (Given space limitations, the remaining five forms will be discussed elsewhere.[10]) It is shown that these forms do not present the characteristics of productive affixes. Therefore, the words that these forms are part of are best analysed as being listed in the mental lexicon rather than as being productively derived.

3.1.   The hypothesised inversive prefix *en-*

On the basis of the existence of the word *enkoutab* 'foolhardy' that he relates to *koute* 'to listen', DeGraff (2001:!59) concludes that *en-* is a productive prefix in HC. The properties of *en-* are not specified. Furthermore, according to the principles of morphological analysis, *en-koutab* cannot be claimed to be derived directly from *koute*. It should be derived from the unattested form **koutab*, itself derived from *koute*. So, the sole example presented by DeGraff to support his proposal that *en-* is a productive affix in Haitian is not well chosen.

In order to test the productivity of this hypothesised affix, a corpus of words containing *en-* was constituted. In a first step, all the words beginning with *en-* in Valdman *et al*. (1981) were considered. From this preliminary list, words in which *en-* is clearly not separable from the rest, such as *endistri* 'industry' or *endyen* 'indian', were removed. This left us with the 20 lexical items that are listed in (21), (22) and (23). Possible bases from which the words beginning in *en-* could be derived from are provided in the right column. Unless otherwise specified, the data in (21)–(23) are from Valdman *et al*. (1981). Other authors were consulted when the possible base word was not listed in Valdman *et al*. Potential bases that are not listed anywhere in available sources are identified by an asterisk. Lexical items cited from Freeman (1988) in (21) appear without glosses because this dictionary does not provide translations.

Out of the 20 pairs of *en-* derivatives and their bases, 13 correspond to pairs that are also found in French (e.g. H. *depandans*/*endepandans*; Fr. *dépendance*/ *indépendance*). These pairs, listed in (21), do not argue for or against the productivity of the form *en-* in HC.

(21)   *endepandans*   'independence'   *depandans* (Freeman 1988)

       endesan   'immodest, lewd'   *desan*   'decent'

       endijesyon   'indigestion'   *dijesyon* (Faine 1974) 'digestion'

       enjis   'unfair'   *jis*   'fair'

---

[10] Denis (in preparation) discusses *-syon*, *-es* and *-te*, and Lefebvre (in preparation) discusses *-ado* and *-ab*.

enjistis	'unjust action'	*jistis*	'justice'
enkapab	'incompetent'	*kapab*	'to be able, can'
enkonsyan	'unprincipled'	*konsyan* (Freeman 1988)	
enkredil	'incredulous (sceptical)'	*kredil* (Faine 1974)	'credulous'
enkwayan	'unbeliever'	*kwayan*	'believer'
enposib	'impossible'	*posib*	'possible'
enpridan	'imprudent'	*pridan*	'prudent'
enpridans	'imprudence'	*pridans*	'prudence'
enpasyans	'impatience'	*pasyans*	'patience'

In three cases the semantic relationship between the hypothesized derived word and its possible base is not straightforward, as is shown in (22).

(22)
endispoze	'to faint, to make nauseous'	*dispoze*	'disposed (inclined)'
endispozisyon	'fainting spell, nausea'	*dispozisyon*	'disposition (temperament)'
envizib	'celestial beings (voodoo), invisible'	*vizib*	'visible'

<div align="right">(from Valdman et al. 1981)</div>

As we saw earlier, productive affixes derive words whose semantics is predictable from the meaning of its parts. This is not the case of the words in (22). In the last four cases, there is no base onto which the hypothesized affix *en-* can be shown to attach to. These are listed in (23).

(23)
enkoutab	'stubborn, headstrong' (attributive) 'stubbornness' (noun)	**koutab*
enkwayab	'unbelievable'	**kwayab*
ensipotab	'unbearable'	**sipotab*
ensiyifyan	'stupid, foolish'	**siyifyan*

<div align="right">(from Valdman et al. 1981)</div>

Moreover, note that *enkoutab* in (23) is not semantically related to *koute* 'to listen' since, as an attributive, Haitian *enkoutab* means 'stubborn, headstrong', and as a nominal, 'stubbornness'. This contrasts with its French counterpart *inécoutable* which means 'impossible to listen to'. It thus appears that *en-* is not a productive affix of HC.

3.2. The hypothesised suffix -*èt*

On the basis of the pair of words *bòl/bòlèt*, DeGraff (2001:!59–61) concludes that there is a derivational process in HC that involves a suffix -*èt*. No other examples are provided. The selectional properties of this alledged suffix are not specified, nor are its semantic properties.

Let us look at the Haitian words ending in -*èt* on the basis of a corpus constituted in the following way. As a first step, all the words ending in -*èt* were pulled out of the inverse Haitian dictionary (Freeman 1988). From this list, all the words that are not in Valdman *et*

al.'s dictionary were eliminated, due to the fact that the inverse dictionary does not provide translations. Hypothesised derived words for which no possible bases could be found in Valdman *et al.*'s (1981) were removed from the remaining list. The verbal idiosyncrasy *chatouyet* 'to tickle', and the nominal *sirèt* 'hard candy' both examplify this situation. The remaining list of lexical items ending in *-èt* was then divided in terms of the syntactic features of the base: nominal and verbal. I begin the discussion with words ending in *-èt* that have a potential nominal base.

Consider the nouns in (24). There is no semantic relationship between the potential bases and the presumed derived words. This indicates that the form *-èt* in the words in (24) does not have a meaning of its own.

(24)   *bichèt*   'winnowing tray'   *bich*   'chunk'

   klochèt   'kind of flower'   *kloch*   'bell'

   kouchèt   'diaper'   *kouch*   'layer'

   kwochèt   'hook', 'tripping'   *kwoche* 'coachman'/*kòche* 'scratch'

(from Valdman *et al.* 1981)

Since *-èt* does not appear to have a meaning of its own in the words in (24), it cannot be claimed to be a productive affix on the basis of these words. In (25), there is some semantic relationship between the base and the hypothesised derived word. This relationship is, however, not straightforward nor regular.

(25) *tèt bòchèt*   'thin short hair'   *bwòs*   'brush'
   [hair cut in form of a brush]

   choukèt   'short section of tree   *chouk*   'stump'
      (used as stool),
      short person'

   bòlèt   'lotery'   *bòl*   'lotery number formed by two
         identical digits (DeGraff, 2001:
         60, and Peleman 1986: 45)

   poulèt   'pullet'   *poul*   'chicken'

   kamyonèt   'pick-up truck, van,   *kamyon*   'truck'
      station wagon (used
      for public transportation'

   chemizet   'undershirt, t-shirt'   *chemiz*   'shirt'

   boulèt   'ball' (meatball,   *boul*   'ball (sphere, toy)'
      fishball, cannonball)

   salopèt   'slovenly woman'   *salòp*   'immoral person, coward,
         slovenly'

   gòjèt   'swallow (sip)'   *gòj*   'throat'

   rakèt   'type of cactus'   *rak*   'scrub'

   kaskèt   'cap'   *kas*   'hardhat, helmet'

pantalèt	'(women's) underpants'	*pantalon*	'trousers'
fiyèt (*lalo*)	'folk character (witch/powerful armed Duvalier partisan (female))'	*fi*	'woman'
malèt	'suitcase'	*mal*	'trunck'
langèt	'clitoris'	*lang*	'tongue'
grandèt	'adolescent'	*grand*	'old'

(from Valdman *et al.* 1981)

Recall from the introduction to section 2 that the output resulting from the concatenation of a given form with a particular base must be predictable. This is because productive affixes have a specific meaning that manifests itself in most instances where they occur. So, the question arises as to whether a meaning can be identified for *-èt* in the words listed in (25). On the basis of a pair like *poul/poulèt*, one can hypothesise that *-èt* would have a 'diminutive' interpretation. However, *tèt bòchèt* is not a small *bwòs*, *choukèt* is not a small *chouk*, *bòlèt* is not a small *bòl*, and so on and so forth. Even *poulèt* is not just a small or baby *poul*; rather it is a 'FEMALE baby *poul*'. Likewise, *kamyonèt* means more than 'a small *kamyon*'. The hypothesised derived words *chemizèt* and *boulèt* also have more meaning than the combination of their base and *-èt* would predict. The word *salopèt* refers to a woman that has the property of the hypothesised base. A *gòjèt* is not a small *gòj*, nor a type of *gòj*. The remaining examples in (25) all present some idiosyncrasy. On the basis of this discussion, I conclude that the form *-èt* in the words in (25) is not a diminutive suffix. It does not seem possible to associate to it any other meaning that would predict the meaning of the words it is part of, either. I thus conclude that the form *-èt* occurring in (25) does not qualify as a productive affix. The examples in (26) consist of pairs where the words ending with *-èt* and those without *-èt* are synonymous.

(26)	*gòdèt*	'mug, cup'	*gòde*	'mug, cup'
	kòlèt	'collar'	*kòl*(*e*)	'collar'

(from Valdman *et al.* 1981)

Thus, again, the form *-èt* occurring in (26) does not qualify as a productive affix. The words in (27) present cases where the hypothesised morphological derivation is either morphologically or phonologically not straighforward. For example, in the first example, affixation of *-èt* to *kòk* yields the unattested word **kòk-èt*. Likewise, affixation of *-èt* to *kokoye* yields the unattested word **kokoyèt*. Instead, we find *kokonèt*, possibly derived from *koko* 'genitals (female)/cocoon' (see Valdman *et al.* 1981) and *-èt*, (and the epenthetic consonant *-n-*). If this derivation were the correct one, the semantics of *koko* 'female genitals, cocoon' and that of *kokonèt* 'coconut cookie' would be related. From their translation, these two words do not appear to be semantically related. As for the second example, affixation of -

èt predicts the unattested form **kasèt*. The observed form is *kaskèt* [kaskɛt]. If this word has simply been incorporated into HC directly from French *casquette* (pronounced [kaskɛt]), the observed Haitian phonological form follows in a straightforward way. Finally, the last word, *pantalèt* is idiosyncratic for, if it were derived from *pantalon*, it would have the unattested form **pantalonèt*, rather than the attested one *pantalèt*.

(27)   *kokonèt*   'coconut cookie'   *kòk*   'coconut'
                                              short form of *kokoye* 'coconut'

          kaskèt   'cap'   *kas*   'hardhat, helmet'

          pantalèt   '(women's) underpants'   *pantalon*   'trousers'

                                        (from Valdman *et al*. 1981)

The form *-èt* occurring in (27) thus does not qualify as a productive affix. Finally, *chofrèt* in (28a) is not derived from the unattested base **chofr-* plus *-èt*. Rather, it consists of a combination of *cho* 'hot' + *frèt* 'cold', yielding *chofrèt* 'chill'. Likewise, *bwatèt* 'skull' in (28b) is a frozen compound comprised of *bwat* 'box' and *tèt* 'head' (A.-M. Brousseau p.c.).

(28)   a.   *chofrèt*   'chill' **chofr-èt*

        b.   *bwatèt*   'skull'   **bwat-èt*   (from Valdman *et al*. 1981)

It thus appears that the form *-èt* occurring with nominal bases does not have the properties of a productive affix in HC.

    I now turn to the discussion of words ending in *-èt*, for which the hypothesised base is verbal. These are presented in (29) and (30). In (29), there is no semantic relationship between the available verbal base and the hypothesised derived noun.

(29)   *k(w)ochèt*   1. 'hook'   *kòche*   1. 'to butcher'
                                2. 'tripping'   2. 'to scratch'
                                                            3. 'to cut oneself'
                                                            4. 'to beat (in a game)'
                                                          (from Valdman *et al*. 1981)

This piece of data does not argue in favor of the morphological productivity of the form *-èt*. In (30), there is a semantic relationship between the verbal base and the corresponding noun ending in *-èt*. In all cases, the noun containing *-èt* is a cognate object of the verbal base.

(30)   *digèt*   'stick/goad'   *dige*   'to goad'

              devinèt   'riddle'   *devine*   'to guess'

              sousèt   'sucking, pacifier'   *souse*   'to suck'

              pikèt   'peg, stake'   *pike*   'to sting, to prick, to stab'

              souflèt   'whistle'   *soufle*   'to whistle'

                                              (from Valdman *et al*. 1981)

Except for the pair *digèt*/*dige*, the pairs of words in (30) all correspond to pairs that are also found in French. This state of affairs raises the question of whether the nouns ending in *-èt* in (30) are productively derived by means of *-èt* or whether they have been incorporated as such

into the Haitian lexicon. If the Haitian words in (30) do have internal structure, it should be possible to find other words so formed that meet at least one of the criteria discussed in section 1. Having gone through all the Haitian words ending in *-èt* in Freeman's (1988) inverse dictionary, I did not find any such pairs, except for the pair *digèt*/*dige*. Finally, for *-èt* to be analysable as a productive affix of Haitian, it should be possible to identify the type of verbs that are selected by this affix. Since the nouns in (30) are all cognate objects, a possible class of verbs to look for would be cognate object verbs. However, verbs that typically take a cognate object in related languages are intranitive in HC. These are listed in (31).

(31)   *tete*   'to suckle'   *kwè*   'to believe'

         pise   'to pee'   *sifle*   'to whistle'

         touse   'to cough'   *genyen*   'to win'   (from Lefebvre 1998: 281)

It thus appears that the form *-èt* occurring in (30) does not have the properties of a productive affix.

On the basis of the above discussion, I conclude that the proof has not been made yet that *-èt* is a productive affix of Haitian.

3.3. The hypothesised nominalising suffix *-man*

On the basis of the pair of words *koze* 'to talk' and *kozman* 'talk, gossip', DeGraff (2001:!60) concludes that there is a productive nominalising suffix *-man* in HC that derives nouns from verbs. The content of this section further investigates this claim.

The Haitian form *-man* (from French *-ment*) is found in a number of nouns that can be related to verbs. For example, the noun *rannman* or *randman* 'yield' can be related to the verb *rann* 'to produce, to give off' (from Valdman *et al.* 1981). The form *-man* thus appears to combine with verbs to form deverbal nouns. There are Haitian nouns containing *-man* that have no counterpart in French. Two examples are provided in (32).

(32)   HAITIAN   FRENCH

         pledman 'discussion, quarrel, competition'   **plèdement*/OK *plaidoirie*

         kozman   'chat'   **causement*/OK *causette*

As is shown in (33), there is an available verbal base for each of these nouns.

(33)   *pledman* 'discussion, quarrel, competition'   *plede*   'to argue (a case)'

         kozman   'chat'   *koze*   'to chat'

                                                      (from Valdman *et al.* 1981)

As per the tests in section 1, data of the type of those in (32) and (33) suggest that nominalising *-man* is a potential affix of HC, deriving nouns from verbal bases. What about its productivity?

The list of words ending in *-man* (with the exception of those involving adverbial *-man*, discussed in section 2.8) was copied from Freeman's inverse dictionary. Since

Freeman's does not provide translations, words that are not listed in Valdman *et al.*'s (1981) were eliminated from the list. Words ending in nominal -*man* for which no base could be found were also excluded from the list. A sample of such nouns is provided in (34).

(34)   Noun

		Base			Base
tanperaman	'temperament'	*	*ekoulman*	'gonorrhea'	*
atachman	'attachment'	*	*abònman*	'subscription'	*
dezagreman	'unpleasantness'	*	*anplasman*	'building site' (Fr: emplacement)	*
etoufman	'suffocation'	*	*anpresman*	'haste'	*
abiman	'dress clothes'	*	*trètman*	'treatment'	*
chatiman	'punishment'	*	*mekontantman*	'dissatisfaction'	*
alejman	'alleviation'	*	*apwentman*	'salary, wages'	*
aranjman	1. 'agreement' 2. 'border, trimming'	*	*antèman*	'funeral, burial'	*
pikotman	'itch'	*	*ransèyman*	'information'	*

(from Valdman *et al.* 1981)

At this point, there remained 46 nouns in the list. Each noun was paired with a potential base. From this list, all the idiosyncrasies were eliminated. Idiosyncrasies are of various types. A first type involves lexical items ending in -*man*, where -*man* attaches to a base that is not verbal (recall that -*man* is claimed to derive nouns from verbs). The lexical items removed from the list on the basis of this criterion are listed in (35). In *afreman*, -*man* is presumably attached to a nominal base that can also be used as an adjective. In *fèman*, -*man* is presumably attached to a nominal base. In *balonnman* and *anbarasman*, -*man* is presumably attached to attributive adjectives.

(35)

afreman	'gluttony'	*afre*	'gluttonous' (N/A)
fèman	'machete'	*fè*	'iron'
balonnman	'bloated stomach'	*balonnen*	'bloated'
anbarasman	'financial difficulties'	*ambarase*	'broke, without money'
gonfleman	'indigestion'	*gonfle*	'bloated'
egareman	'foolishness'	*egare*	'dumbfourded'

Even though there are no French words corresponding to the alleged derived Haitian ones in the first two cases in (35), the latter must be analysed as idiosyncrasies. For example, in the case of *fèman*, it is difficult to construct the meaning 'machete' from the hypothesised internal structure of this word. Furthermore, the available base for the nouns in (35) is either nominal or adjectival. If the nouns in (35) were analysed as morphologically derived, they would be the only lexical items containing -*man* that would be derived from a non-verbal

base. I thus conclude that the few lexical items in (35) do not argue in favor of the productivity of *-man*. Having removed these lexical items from the list, we are left only with lexical items made up of a potential verbal base and *-man*. In these cases, there is no or only partial semantic relationship between the potential verbal base and the presumed derived words. Such cases are listed in (36). For example, there is no semantic relationship between *anpeche* 'to prevent' and *anpèchman* 'financial difficulties'. In the case of *deranje* 'to disturb' and *deranjman* 'aching, intestinal desorder', there is only but a remote semantic relationship (as one can see *deranjman* as involving a 'disturbed digestive system'), but no direct one, where *deranjman* would refer to any kind of disturbance.

(36) *anpèchman* 'financial difficulties' *anpeche* 'to prevent'

   sakreman 'sacrament'   *sakre* 'tonsured'

   angajman 'pact with the devil' *angaje* 'to commit (oneself)'

   deranjman 'aching, intestinal disorder' *deranje* 'to disturb'

   batisman 'mansion'   *bati* 'to build'

   rejetman 'vomiting'   *rejete* 'to renounce voodoo'

                (from Valdman *et al.* 1981)

Since the meaning of the hypothesised derived words cannot be (fully) predicted from the meaning of their parts, the form *-man* in (36) cannot be argued to be productive. Another type of idiosyncrasies involves cases where the morphophonemics of the hypothesized derived words is not straightforward. Regular cases proceed as in (37).

(37) *koz-man* < *koze*

   antann-man < *antann*

On the basis of this model, we would expect *-man* to regularly attach to verb stems. As is shown in (38), however, the resulting structures are not always attested.

(38) **anbel-man* < *anbeli* 'to grow more beautiful'

   *avil-man < *avili* 'to degrade, to debase'

   etc.

Instead, in such cases, the hypothesised derived words contain the sequence *-is-* between the base and the suffix *-man*, as is shown in (39).

(39) *anbelisman* 'beautification' *anbeli* 'to grow more beautiful'

   avilisman 'debasement'   *avili* 'to degrade, to debase'

   vomisman 'vomiting'   *vomi* 'to vomit'

   rafrechisman 'refreshment' *rafrechi* 'to refresh'

   refwadisman 'chill'   *refwadi* 'to cool, cool'

   toudisman 'dizziness'   *toudi* 'to stun, to daze, stunned, dazed'

avètisman	'warning'	*avèti*	'to warn, to notify'
sezisman	'shock (emotional)'	*sezi*	'astonished, surprized'

The data show that the hypothesised derived nouns in (39) are not morphologically derivable in a straightforward way from the corresponding Haitian verbs. When we look at the nouns in (39) in light of the superstratum data, we find that these Haitian nouns correspond exactly to French nouns. These pairs of Haitian and French nouns are listed in (40). Note that the pronunciation of the Haitian and French words in (40) is almost identical; this fact may be obscured by the different orthographic conventions.

(40)   HAITIAN   FRENCH

       anbelisman   *embellissement*

       avilisman   *avilissement*

       vomisman   *vomissement*

       rafrechisman   *rafraichissement*

       refwadisman   *refroidissement*

       toudisman   *étourdissement*

       avètisman   *avertissement*

       sezisman   *saisissement*

Given the straightforward correspondances between the HC and the French nouns in (40), in addition to the fact that the HC nouns are not derivable in a straightforward way from their corresponding HC verbal bases, it is likely that the nouns in (40) have been incorporated into HC wholesale from French. In any case, they do not argue for the productivity of *-man*.

Consider the Haitian nouns and their potential verbal bases in (41).

(41)   *batisman*   'construction (action)'   *bati*   'to build'

      finisman   'end'   *fini*   'to finish'

      remèsisman   'thank'   *remèsi/remèsye* 'to thank'

The nouns in (41) cannot be claimed to be derived by means of the addition of *-man* to the verbal base. Such a rule would yield the unattested forms in (42).

(42)   **bati-man*

      *fini-man

      *remèsi-man

Unlike the nouns in (40), however, the nouns in (41) are not like the French corresponding ones, as is shown in (43).

(43)   HAITIAN   FRENCH

      batisman   'construction (action)'   **batissement*/OK *bâtiment*
              'mansion'

      finisman   'end'   **finissement*/OK *fin*

> *remèsisman* 'giving of thanks'   **remercissement*/OK *remerciement*

The Haitian nouns in (43) have thus not been imported wholesale from French. As was pointed out in Orjala (1970:!154), these Haitian nouns appear to have been formed by analogy with the words in (40).[11] Thus, they too have to be considered as idiosyncratic simplexes, and as such, they must be listed in the mental lexicon.

Whence all the idiosyncrasies discussed so far have been removed from the list of 46 nouns, we are left with 23 nouns involving the nominalising form *-man*. These naturally divide into two groups which I will discuss in turn. The first group contains 18 nouns that appear to be made up of a verbal base and of *-man*. The hypothesised deverbal nouns denote the action referred to by the verb or the result of this action. In all cases, the hypothesised derivation appears to be straightforward from a semantic, a morphological and a phonological point of view. These words are listed in (44).

(44)   *randman*   'yield'   *rann*   'to produce, to give off'
        ankadreman   'frame'   *ankadre*   'to frame'
        santiman   'feeling'   *santi*   'to feel'
        chajman   'cargo, load'   *chaje*   'to load, loaded'
        soulaj(a)man   'relief'   *soulaje*   'to relieve
        ankourajman   'encouragement'   *ankouraje*   'to encourage, encouraged'
        jijman   'judgement'   *jije*   'to judge'
        chanjman   'change'   *chanje*   'to change'
        gouvè(n)man   'gouvernment'   *gouvènen*   'to govern'
        kòmansman   'beginning'   *kòmanse*   'to begin, begun, started'
        pansman   'bandage'   *panse*   'to bandage'
        konsantman   'approval, consent'   *konsanti*   'to consent'
        derayman   'derailment'   *deraye*   'to derail'
        anmizman   'entertainment'   *anmize*   'to entertain'
        regleman   'settlement'   *regle*   'to settle, settled'
        debòdman   'overflowing'   *debòde*   'to overflow'
        tranbleman   'trembling'   *tranble*   'to tremble'
        pèman   'payment'   *peye*   'to pay'
        antrénman   'practice'   *antrene*   'to practice, to train'
        antannman   'understanding'   *antann*   'to get along'

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[11] Orjala (1970: 154) considers the forms in (43) as Gallicisms. He notes: "In morphology, Gallicism seldom involves the adding of French inflection; but it does involve the employment of French derivational patterns in the creation by analogy of new words […]."

Strikingly enough, however, all the pairs of nouns and verbs in (44) are also found in French (e.g. *rendement* 'productivity/yield', *rendre* 'to produce/to yield'; etc.). The Haitian data in (44) thus have nothing to contribute to the question of whether *-man* is native to HC. We are now left with the second group of nouns which contains 5 items that are listed in (45). These appear to be derived in a straightforward way from a verbal base by means of *-man*.

(45)　　*ankonbreman* 'crowd, throng'　　*ankonbre* 'to crowd, crowded'

　　　　frapman　　'knocking'　　　　*frape*　　'to hit, to bump, to strike'

　　　　vesman　　'vomit'　　　　　*vese*　　'to vomit'

　　　　pledman　　'discussion, quarrel'　*plede*　'to argue (a case)'

　　　　kozman　　'chat'　　　　　*koze*　　'to chat'

Unlike the pairs of deverbal nouns and verbs in (44), the pairs of deverbal nouns and verbs in (45) all have something that distinguish them from French. The first pair in (45) differs semantically from the French corresponding one. In French, the verb *encombrer* means 'to congest, to encumber' and the deverbal noun *encombrement* means 'litter, congestion, traffic jam'. The second pair in (45) also differs from the corresponding French one. The French verb *frapper* 'to knock' cannot be nominalised, as *frappement is not attested. The third pair in (45) has a corresponding one in French, but both the deverbal noun and the verb have a meaning that differs from the Haitian words. The French verb *verser* means 'to pour', and the French noun *versement* means 'pouring out'. The same observation carries over to the fourth pair in (45). The French deverbal nouns of the verb *plaider* 'to argue (a case)' are *playdoyer* 'speech for the defense' or *plaidoirie* 'pleading' rather than *plaidement. Finally, the French word corresponding to Haitian *kozman* 'chat' is *causette* 'chat', rather than the non-attested *causement. So, the five deverbal nouns in (45) can be argued to have internal structure and to be derived by means of *-man*. Two additional deverbal nouns found in Sylvain (1936:!32) can be added to this short list. They figure in (46).[12]

(46)　*degrès-man* 'removing fat'　　　　*degrese* 'to remove fat, to loose weight'

　　defrip-man 'action of smoothing out'　*defripe* 'to smooth out'

The conclusion to this exercise is that there are seven lexical items that appear to be derived by affixation of *-man*. Does this argue for the productivity of *-man*?

Recall from section 2 that deverbal nouns can be created by means of morphological conversion and of suffixation with *-ay*. Morphological conversion was shown to apply to verbal bases that have only one argument, whereas affixation with *-ay* was shown to apply to verbal bases that have two arguments (where *-ay* absorbs one of the two). On the hypothesis

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[12] Sylvain (1936:!32) mentions that *-man*, as well as other potential affixal forms that she discusses have very limited use.

that *-man* selects verbal bases, what are the properties of these bases in terms of their argument structure. The verbs that combine with *-man* are listed in (47) with their respective argument structure (based on Valdman *et al*. 1981).

(47)   *ankonbre* 'to crowd' two arguments   *koze*   'to chat'   one argument

        frape   'to hit'   two arguments   *degrese* 'to loose weight' one argument

        vese   'to vomit' one argument   *defripe* 'to smooth out'   two arguments

        plede   'to argue' one argument

It appears that the hypothesised suffix *-man* selects bases that have either one or two arguments. In contrast to the two other nominalysing processes, it is thus not possible to characterise in a predictable way which verbal bases will be selected by *-man*. This sheds doubt on the productivity of this potential affix.

        Another dimension that can be examined is the interaction between the hypothesised deverbal nouns ending in *-man* and those that occur as a result of conversion or of affixation with *-ay*. In Valdman *et al*. (1981), the verb *koze* 'to chat' in (47) can be nominalised by means of either conversion or affixation of *-man*, yielding *koze* 'chat' and *kozman* 'chat', respectively. According to Valdman *et al*. (1981), these two nouns are synonymous. There is yet another similar pair: *tranbleman*/*tranble* 'trembling', both derived from the verb *tranble* 'to tremble', and also specified as being synonymous in Valdman *et al*. (1981). In the literature on morphology, 'blocking' has been proposed to explain the non-existence of a complex form due to the existence of a synonymous competing one. Hence, in English, **gloriosity* is not part of the lexicon because *glory* already exists. The fact that we find *koze*/*kozman* as synonyms in Haitian suggests that the two morphological processes, that is nominal conversion and *-man* affixation may have been competing at some point. Clearly, conversion has won the competition in terms of the number of tokens (see Lefebvre 1998). The three other one-argument verbs in (47), that is *vese*, *plede* and *degrese* can only be nominalised by *-man*. Possibly, blocking prevents nominal conversion in these cases because of the existence of *vesman*, *pledman* and *degrèsman*.

        In this case again, my conclusion is that the proof has not been made that *-man* should be analysed as a productive affix of HC.

3.4. Summary

The detailed investigation of the properties and distribution of the forms *en-*, *-èt* and *-man* sheds doubt on their affixal status. On the one hand, in many cases, the words they are part of do not present the characteristics of words that have an internal structure. On the other hand, these forms are involved in a variety of idiosyncrasies including the category of the base, the semantics of the hypothesised base or of the hypothesised affix itself, and the properties of the words that they are part of. The forms *en-* and *-èt* were shown to not be productive at all.

As for *-man*, our conclusion was that it has not as yet been demonstrated to be productive. For reasons of space, I have not discussed five other affixes that were claimed to be productive (i.e. *-ado*, *-ab*, *-syon*, *-es* and *-te*). An investigation of these affixes shows, however, that similar arguments can be made: *-ado*, *-ab*, *-es* and *-te* are unproductive, while the status of *-syon* is still under investigation (Denis, in preparation). My conclusion is thus that, modulo a clear conclusion on *-syon*, the size of the inventory of the productive affixes in HC is limited to the affixes argued for in section 2.[13]

4.   The emergence of the morphological inventory of a HC

The inventory of the productive derivational affixes of HC in Table 1 comprises eleven affixes. Why is the morphological inventory of this particular size? Why does the inventory comprise this particular set of morphemes? How can the emergence of the HC morphological system be explained? This section addresses these questions within the framework of the relexification account of creole genesis. It summarises the scenario extensively discussed in Lefebvre (1998: 303–33). In section 4.1, a comparison of the HC morphological inventory with those of its source languages shows that, although the forms of the HC affixes are derived from French, the size of the inventory as well as the properties of its affixes parallel those of its West African substratum languages. In section 4.2 the question of how this situation must have come about is addressed.

4.1.   The inventory of the productive derivational affixes of HC as compared with those of its contributing languages

As is shown in Lefebvre (1998), the Haitian derivational affixes all derive their phonological representations from French forms. The Agentive suffix *-è* is derived from the phonetic matrix of the French agentive suffix *-eur*, as in *travaill-eur* 'worker'.[14] The attributive suffix *-è* is derived from the French attributive suffix *-eur*, as in *farc-eur* 'someone who makes jokes'. The verbalising suffix *-e* derives its phonological representation from the French suffix *-er* (pronounced [e]) as in *fêt-er* 'to celebrate'. The Haitian inversive/privative prefix *de-* is phonologically identical to the French inversive prefix *dé-* occurring in verbs such as

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[13] Valdman (1978) also considers the form *-mann* (<English *man* 'man') as a productive suffix of Haitian. I do not consider this form productive for the same reasons that I do not consider *en-*, *-èt* and *-man* productive. Due to space limitations, the discussion supporting my claim will be presented elsewhere.

[14] Albert Valdman points out that additional support of *-è* as a reflex of French *-eur* is provided by the existence of the variant *-ò* as in *mantè/mantò* (e.g. Freeman and Laguerre 1996).

dé-placer 'to displace'. The Haitian prefix *ti-* is derived from Haitian *pitit* itself derived from the French prenominal adjective *petit* (pronounced [pə ti]/[pti]/[ti]). The nominalising suffix *-ay* derives its phonological representation from the French suffix *-age* occurring in words such as *chauff-age* 'heating'. The adverbial suffix *-man* is derived from the French suffix *-ment* (pronounced [mã]): as in *admirable-ment* 'admirably'. Similarly, the Haitian suffixes *-wa* and *-yen* derive their phonological representations from the French suffixes *-ois* pronounced [-wa], as in *village-ois* 'from the village', and *-ien* as in *paris-ien* 'from Paris', respectively. Finally, the ordinal suffix *-yèm* derives its phonological representation from the corresponding French suffix *-ième*. When we compare the Haitian affixes with their French counterparts, however, a more complex picture arises.

The productive Haitian affixes with their closest French corresponding forms are presented in Table 2 (along the lines of Brousseau 1994). The French forms that are not in parentheses are those hypothesised to have provided the phonetic matrices from which the phonological representations of the Haitian affixes were assigned; those in parentheses are forms that are synonymous (though they may differ as to subcategorisation and morphophonemic properties).

Table 2: The HC affixes and their closest French corresponding forms

	HAITIAN	FRENCH
Agentive suffix	*-è*	*-eur*
base	V	V
output	N	N
Attributive suffix	*-è*	*-eur* (*-ard, -ier, -ien*)
base	N	N
output	N	N
Verbalising suffix	*-e*	*-er, -é* (*-ir, -ifier, -iser*)
base	N	N/A
output	V	V
Inversive/privative prefix	*de-*	*dé-* (*é-, in-, ir-*)
base	V	V/A
output	V	V
Diminutive prefix	*ti-*	adjective *petit* [ti] (*-et, -ot, -on*)
base	N	N/A
output	N	N
Nominalising suffix	*-ay*	*-age* (*-ion, -ment, -ance, -ure*)
base	V	V
output	N	N
Conversion	–	– (*-i, -é, -ert, -u*)
base	V	V
output	N/A	N

Adverbial suffix	*-man*	*-ment*
base	A	A
output	Adv	Adv

Place of origin/residence suffixes	*-wa*/*-yen*	*-ois*/*-ien* (*-ais, -al, -and, -ain, -an*)
base	N	N
output	N	N
Ordinal suffix	*-yèm*	*-ième*
base	Q	Q
output	A	A

<div align="right">(adapted from Lefebvre 1998: 313–4)</div>

The data in Table 2 show that the derivational affixes of HC all have at least one phonetically similar corresponding affix in French. The most striking fact about the distribution in Table 2 is that, in all cases, except for the agentive suffix, there are several French affixes corresponding to a single Haitian form (see BFL 1989:!18). For example, while French has several overt affixes converting verbs into nouns, Haitian has only one. Likewise, while French has several affixes designating a place of origin, Haitian has only two. Furthermore, it is notable that, as we saw in section 2.7, while Haitian has adjectival conversion, French does not. As is noted in Levin and Rappaport (1986), French derives adjectives from the past participial form of verbs rather than from the verbs themselves (e.g. *La viande est cuite* 'the meat is cooked'; *la viande cuite* 'the cooked meat').

Lefebvre (1998:!314–8) provides a detailed comparison of the properties of the HC affixes and of their French corresponding forms showing discrepencies of various kinds between them: selectional properties, semantics of the derived words, relative productivity, position of the affix with respect to the base, etc. The conclusion of the comparison is that, while the phonological forms of the HC derivational affixes are derived from French forms, the properties of these affixes do not match those of the French. Finally, a most striking difference between the two inventories is their size. While the inventory of HC affixes in Table 2 exhausts the list of derivational affixes in this language, the inventory of French affixes in Table 2 is far from complete. For example, according to Dubois (1962), French has over 80 derivational suffixes (excluding Greek and Latin affixes involved in the vocabulary of the natural sciences, as well as all prefixes). Some authors claim an inventory of French productive affixes that is smaller than Dubois'. For example, Brousseau and Nikiema (2001: 289) estimate this inventory to comprise between 61 and 75 affixes, depending on one's analysis (see also Thiele 1987). Even on these analyses, however, the inventory of French affixes far outnumbers that of HC. A comparison of the list of HC affixes in Table 2 with any list of French affixes immediately leads to the conclusion that the majority of the derivational affixes of French have no counterpart in HC.

Lefebvre (1998: 317) addresses the issue of whether this discrepency could be attributable to the possibility that the inventory of French affixes was smaller at the time HC was formed, that is in 17th/18th century? A survey of the literature available on derivational affixes in 17th and 18th century French (see Julliand 1965; Nyrop 1936; Rey 1992)[15] and additional work by Tardif (ms) reveal that most of the affixes listed by Dubois were already in use at the time HC was formed. According to Tardif's survey, the major difference between classical and modern French lies in the productivity of specific affixes rather than in the size of the inventory of productive affixes. Thus, whatever the exact number of French productive affixes at the time HC was formed, we can safely conclude that they far outnumbered Haitian affixes. In the case of nominal conversion, 17th/18th century French still presented a few cases of deverbal nouns formed by this process. But, as is shown in Lefebvre (1998: 314) this process is far more productive in HC than in the variety of French of the time. This is because, while nominal conversion was very productive in Middle French, its productivity had started to decline during the 16th and 17th centuries in favour of the use of overt affixes, as is stated by Haase (1975: 197–8) (our translation):

> The old language made frequent use of the infinitive with the sense of a noun, but this usage became rarer in the 17th century. … in this period the nouns formed from infinitives were essentially the same as those still used in the language today: in addition to the very frequently used ones like *le souvenir* ['memory'], *le lever* ['rising'], *le coucher* ['bed' or 'setting'], *le boire* ['drink' or 'drinking'], *le manger* ['food'], etc., there are some rarer ones such as *le marcher* ['walking'], *le pleurer* ['crying'], *le vivre* ['living' or 'food'], *le vouloir* ['will'], etc.

So, although French contributed the phonetic matrices of the Haitian affixes and, in most cases, their position with respect to the base they attach to, the comparison between the derivational affixes of Haitian and French leaves us with a number of questions: Why has Haitian developed this particular set of affixes? Why is the inventory so small compared with that of French? Why has Haitian developed adjectival conversion from verbs while French does it another way? Should the discrepancies between a significant number of Haitian and French derived words be considered as independent developments in Haitian? With these

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[15] Variation in the pronunciation of some derivational affixes between classical and modern French is discussed in Juneau (1972).

questions in mind, I now turn to the comparison of the inventory of Haitian affixes with that of one of its substratum language: Fongbe.[16]

Detailed descriptions of the productive derivational affixes of Fongbe can be found in Lefebvre (1998:!312–8) and in Lefebvre and Brousseau (2002).[17] Here, I only provide the comparison of the Haitian and Fongbe inventories based on these detailed descriptions. The comparative data are presented in Table 3. Note that the inventories in Table 3 are exhaustive for both languages. In the table, the term 'copy prefix' stands for the affix formed by partial reduplication of the base in Fongbe.[18]

Table 3: The HC affixes and their Fongbe corresponding forms

	HAITIAN	FONGBE
Agentive suffix	*-è*	*-tɔ́*[19]
base	V	V
output	N	N
Attributive suffix	*-è*	*-nɔ̀*
base	N	N
output	N	N
Verbalising suffix	*-e*	–
base	N	
output	V	
Inversive prefix	*de-*	*mà-*
base	V	V/A
output	V	V/A
Diminutive affix	*tí-*	*-ví*
base	N	N
output	N	N

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[16] Although there were several African languages spoken in Haiti in the late 17th century, the Gbe languages, among which Fongbe, have been identified as being predominent in Haiti at the time the creole was formed, that is at the end of the 17th century and beginning of the 18th century (see Singler 1996). See Lefebvre (1998:!58–62) for a discussion of the typological features of the source languages of Haitian.

[17] This description presents in a unified way information scattered in the literature on the morphology of Fongbe. Major sources cited are Brousseau (1990, 1993, 1994).

[18] With Marantz (1982), we assume that reduplication is a kind of affixation and that the affix involved in reduplication is different from other affixes only in that it is phonologically underspecified, that is, it is only specified for a skeletal template. The segmental content of the template is determined by the phonological form of the base.

[19] Note that the suffixes *-tɔ́* and *-nɔ̀* can also attach to synthetic compounds (see Lefebvre and Brousseau 2002: 230–1).

Nominalising suffix	*-ay*	copy prefix
base	V	V
output	N	N
Conversion	–	copy prefix
base	V	V
output	N/A	N/A
Adverbial suffix	*-man*	–
base	A	
output	Adv	
Place of origin/residence suffixes	*-wa/-yen*	*-tɔ́/-nù*
base	N	N
output	N	N
Ordinal suffix	*-yèm*	*-gɔ́ɔ́*
base	Q	Q
output	A	A

(adapted from Lefebvre 1998: 320–1)

The Haitian and Fongbe derivational affixes in Table 3 differ in their phonological representation and they may also differ in their position with respect to the base they attach to. As we saw above, these properties of the Haitian affixes appear to have been largely provided by the superstratum language. In spite of these differences, however, there is a striking resemblance between the two inventories: in most cases, there is a one-to-one correspondence between the Haitian and Fongbe affixes. In both languages, there is one agentive, one attributive, one inversive, one diminutive and one ordinal affix. It is a remarkable fact that, in both Haitian and Fongbe, there are exactly two suffixes referring to a place of origin/residence. Furthermore, conversion in HC results in either nouns or adjectives; this corresponds to the output of the Fongbe derivations achieved by means of the copy prefix. The rather regular correspondence between the Haitian/Fongbe affixes contrasts with the rather irregular correspondance between the Haitian/French affixes in Table 2.

In spite of these similarities between the two inventories there are some differences between them. While the formation of deverbal nouns in HC involves two morphological processes, affixation of *-ay* and conversion, which are in complementary distribution, the formation of deverbal nouns in Fongbe involves only one affix: the copy prefix. This mismatch is explained in the following way in Lefebvre (1998, section 10.4). While reduplication is widely used among Kwa languages to derive adjectives from verbs (see Westerman and Bryan 1970), its use to derive nouns from verbs is restricted to a subset of the Kwa languages. Fongbe is part of this subset. Other Kwa languages such as Twi, Ewe, Yoruba and Nupe use another affix. This is illustrated in (48).

(48) a. *a-dɔw* 'hoeing' *<dɔw* 'hoe' TWI

   b. *o-gblo* 'breadth' *<gblo* 'be broad' EWE

| c. | *ɛ-da* | 'creature' | *<da* | 'create' | YORUBA |
| d. | *i-bi* | 'wickedness' | *<bi* | 'be bad' | NUPE |

(from Westerman and Bryan 1970:!91)

So, in this case, HC would reflect the morphological division of a subset of its substratum languages that excludes some Gbe languages such as Fongbe. A second mismatch concerns the verbalising affix *-e* and the adverbial affix *-man*, which have no counterparts in Fongbe. In Lefebvre (1998, section 10.4) these mismatches are considered as cases of innovations from within the creole, made possible by the availability of French forms.

Derived words in Haitian and Fongbe can also be contrasted from the point of view of their semantics. As is shown in Lefebvre (1998, section 10.2 and Appendix 3), there is quite a large number of Haitian derived words which do not correspond to derived words in French. Lefebvre (1998, section 10.3) further shows that, in most such cases, there is a Fongbe counterpart to the Haitian word. For example, while there is no French derived word corresponding to Haitian *eskandal-è* 'loud, rowdy', there is a corresponding Fongbe word derived by means of the attributive suffix *-nɔ*: *zígídi-nɔ* 'loud, rowdy'. Likewise, while cases of nominal conversion in Haitian do not all have a corresponding lexical item so derived in 17th/18th century French (see Lefebvre 1998, section 10.2), all the Haitian deverbal nouns have a corresponding Fongbe deverbal noun derived by means of the copy prefix, showing that nominal conversion in Haitian and the 'copy prefix' in Fongbe have a similar function. Likewise, while Haitian nouns derived by means of the nominalising suffix *-ay* often do not have a French corresponding noun derived in this way, in most cases, there is a Fongbe deverbal noun derived by means of the copy prefix that corresponds to the Haitian noun with *-ay* (see Lefebvre 1998 for a detailed discussion of these facts and for data illustrating each case). These facts strongly support the claim that the concatenation of particular affixes with particular bases in Haitian follows the pattern of the substratum languages, and that the mismatches between Haitian and French can, to a large extent, be explained by the claim that the creators of Haitian used the properties of their own lexicons in concatenating affixes and bases in the language that they were creating.

Finally, although the correspondences between the two inventories in Table 3 are not perfect, the striking fact about them is that they are of comparable size. Indeed, the lists of productive affixes in Table 3 exhausts the number of productive affixes in both Haitian and Fongbe. This strongly suggests that the size of the HC inventory of productive derivational affixes has, to a large extent, been determined by that of the substratum lexicons.

From the discussion in this section, it appears that, while French has contributed the forms, and in most cases the position, of the HC productive derivational affixes, the substratum languages have, to a large extent, contributed the semantics of these Haitian

affixes, the principles which govern their concatenation with their bases and the extent of the inventory. How can such a division of properties be accounted for?

4.2. The relexification account of the emergence of the HC morphological inventory

Relexification is a cognitive process that consists in the relabelling of a lexical entry of a given language on the basis of a phonetic string taken from another language.[20] In Lefebvre (1998 and the references therein), it is extensively argued that the bulk of the HC lexicon has been created by this process. On this view, the creators of HC, speakers of West African languages, relabelled the lexical entries of their respective lexicons on the basis of French phonetic matrices. The relexified lexicons constituted the incipient creole. This theory of creole genesis, supported by a large body of HC data, explains why the creole lexicon mani-fests the properties of its contributing languages in the way it does: while the phonological representations of the creole lexical entries are derived from phonetic matrices in its super-stratum language, the bulk of its other properties are derived from its substratum languages.

Since derivational affixes are lexical categories that are listed in the lexicon, they are assumed to undergo relexification in the same way as other lexical categories do. In Lefebvre (1998, chapter 10), it is thus argued that the creators of HC have relabelled the affixes of their own lexicons on the basis of French phonetic matrices. On this scenario, the creators of Haitian would have identified phonetic matrices of French which had an appropriate meaning to relabel the derivational affixes' lexical entries of their own lexicons on the basis of pairs of French words such as *faire* 'to do' and *dé-faire* 'to undo', or *travaill-er* 'to work' and *travaill-eur* 'worker'. Hence, a Fongbe speaker relexifying his/her lexicon on the basis of data from French would have identified French *dé-* as sharing with *mà-* the meaning 'inversive' and (s)he would have assigned the Haitian lexical entry corresponding to *mà-* the phonological form *dé-*. Similarly, the agentive affix *-tɔ́* would have been relabelled as *-è* on the basis of the French agentive affix *-eur*, and so on.

This scenario accounts for the fact that there is a one-to-one correspondence between the HC and Fongbe agentive, attributive, inversive, diminutive, ordinal and place of origin affixes. Since by definition, the copy prefix does not have an independent phonological representation, it cannot be claimed to have been relexified. The word formation rule involving the copy prefix in Fongbe, however, systematically corresponds to cases of morphological conversion in HC. In both cases the morphological process produces nouns and adjectives. The fact that morphological conversion in HC produces adjectives as well as nouns thus finds a straightforward explanation in the substratum languages. Finally, the

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[20] From the point of view of second language acquisition, the process of relexification thus constitutes an extreme case of interference.

relexification account explains in a simple way why the extra French affixes, a subset of which being listed in Table 2, did not make their way into HC: there were no such lexical entries in the original lexicon to be relexified. (The two Haitian innovations *-man* and *-e* and the presence of the additional suffix *-ay* were discussed in section 4.1.)

As has been pointed out in Lefebvre and Lumsden (1989), the relexification account of creole genesis constitutes a further development of the second language acquisition theory of creole genesis (e.g. Alleyne 1980; Andersen 1980; Schumann 1978; Thomason and Kaufman 1991; Valdman 1980; etc.). Relexification is seen as a tool for acquiring a second language in a context where there is reduced access to the second language. The role of relexification in the formation of creoles was hypothesised to be central on the basis of the fact that, in situations where creoles emerge, there is reduced access to the superstratum language. In the case of HC, the hypothesis was supported by both linguistic and historical data. On the one hand, Lefebvre (1998, 1999 and the references therein) extensively shows that the bulk of the HC vocabulary can be argued to have been created by means of relexification. On the other hand, Singler (1996) establishes that HC was formed between 1680 and 1740; he shows that the beginning of this period was marked by a shift from a tobacco and cotton to a sugar economy, and that this shift provoked a radical change in the configuration of the early Haitian population: "the large land owners drove the small ones, the practive of importing *engagés* ceased, and the number of slaves exploded" (Singler 1996: 193). As is observed by Singler (1996), this shift in the composition of the early Haitian population had the effect of modifying the slave population's exposure to French. Indeed, under the first type of economy, the slave population was in frequent contact with French through the landowners, *engagés* and people of mixed race. In the shift to a sugar economy, the *engagés* disappeared from the Haitian population and the enslaved population increased dramatically such that day-to-day contacts between French speakers and the bulk of the Haitian African population were greatly reduced.

In view of this historical information, the reason why only a small portion of the French morphology made its way into HC finds further explanation. It is hypothesised that, because they did not have enough access to French, the creators of HC generally did not have access to the internal structure of French words. By hypothesis, in the French material that they were presented with, they were looking for phonetic matrices that corresponded to the productive morphemes that they had in their own lexicons. Thus, on the basis of a few pairs of words, they could identify morphemes that corresponded to the productive ones in their respective lexicons. The great majority of the French affixes had no corresponding ones in the West African lexicons and thus they were not identified as such. The French words

containing affixes that had no equivalents in the substratum languages, were incorporated wholesale in the new lexicon.

A final point needs to be considered for this scenario to be complete. Recall from section 3 that there are morphological forms that could be identified as potentially native to Haitian but that turned out to be unproductive. How do these data fit into the relexification account summarised above? In section 4.1, we saw that the superstratum may offer several forms corresponding to only one or two in the substratum languages. For example, while French has various inversive prefixes such as *dé-*, *é-*, *in-*, *ir-*, there is only one such prefix in Fongbe, *mà-* (see Table 3). Likewise, while French has several nominalising affixes: *-age*, *-ion*, *-ment*, *-ance*, *-ure,* Fongbe has only one, used to nominalise all the verbs, and Ewe has two (see the above discussion and the example in (48)). In the same fashion, Fongbe has two suffixes encoding the place of origin/residence, but French has many more: *-ois*, *-ien*, *-ais*, *-al*, *-and*, *-ain*, *-an*, and so on and so forth. Thus, at the time relexification took place, there were several available forms in the superstratum language to relexify each substratum form. The comparisons of Haitian and French forms in Table 2 and of Haitian and Fongbe ones in Table 3 show, however, that, out of the available French forms, the creators of Haitian selected the number of forms that they already had in their own inventory. I suggest to explain these facts in the following way. Before the creole's inventory got to be the way it is, there has probably been an unstable period where there were more forms that were potentially native to Haitian than those that can be argued to be productive in the contemporary language. The existance of forms identified in section 3 as potentially native to HC on the basis of one of the tests in section 1, but that turned out to be unproductive on closer scrutiny, supports the hypothesis of an early unstable period in the development of the morphology of the creole. This period would be characterised by the presence, in the creole, of several forms competing for the same lexical (morphological) entry. For example, in section 3.3 we saw that the form *-man* was competing with *-ay* and with morphological conversion. The few words ending in *-man* that appear to have internal structure in (45) and (46) are possibly leftovers from this period. Furthermore, pairs such as those in (49) probably also reflect the intermediary unstable period hypothesised here. In (49), the pairs of deverbal nouns have two different derivations but exactly the same meaning (they are considered as synonyms in Valdman *et al*. 1981). The first deverbal nouns in (a) and (b) are derived by conversion yielding nouns that have the same form as the corresponding verbs; the second deverbal nouns in (a) and (b) are apparently derived by affixation of *-man*.

(49) a. *koze* 'chat' *kozman* 'chat'

  b. *trenble* 'trambling' *trenbleman* 'trambling'

The hypothesis according to which the apparent derivations in *-man* in (49) would constitute leftovers from the hypothesised unstable period under discussion is congruent with the fact that blocking precludes the derivation of *kozman* and of *tranbleman* because of the existence of the deverbal nouns *koze* and *tremble* produced by morphological conversion.

4.3. Summary

The comparison of the derivational affixes of Haitian, French and Fongbe presented in this section shows that, while the Haitian derivational affixes derive their phonological representations from French phonetic matrices, they derive most of their other properties from their substratum languages. The principled division of properties of the HC affixes between its source languages was shown to follow from the relexification account of creole genesis, as formulated and argued for in Lefebvre (1998 and the references therein).

5. Conclusion: Issues on the morphology of creole languages in light of the HC data

There is a long standing belief that pidgin and creole languages have poor morphology, if at all. For example, d'Ans (1968:!26) writes: "One of the salient characteristics of the creole is precisely to not present processes of derivation, and even to logically not be able to present such processes" (our translation). Hall (1953: 34) remarks that "the three processes of derivation (prefixation, suffixation, and compounding) are for the most part rare and are found but scatteringly in creole, and to a large extent only in learned words borrowed from standard French." While it seems to be the case that pidgin and creole languages generally manifest little inflectional morphology (e.g. Mufwene 1986, 1990, 1991), it is not the case that these languages lack morphology all together. On the one hand, compounding appears to be quite productive in these languages (for Sranan, e.g. Adamson and Smith 1995; Braun and Plag this volume; for Saramaccan, e.g. Bakker, Smith and Veenstra 1995; for Papiamentu, e.g. Dijkhoff 1993; for HC, e.g. Brousseau 1989; Valdman 1978; for Berbice Dutch, e.g. Kouwenberg 1994; for Fa d'Ambu, e.g. Post 1995; for French-based creoles of the Indian Ocean, Papen 1978; etc.). On the other hand, creoles do exhibit derivational morphology to varying degrees. For example, as was shown in this paper, there are at least eleven affixes that can be argued to be productive in HC.

Even in more recent literature, it has been claimed that creoles languages are morphologically poor. For example, Seuren and Wekker (1986: 62) have proposed the Semantic Transparency Hypothesis which "stipulates a strict one-to-one correlation between semantic elements and structural surface units (morphemes)"; in their view, semantic transparency "limits learning and computing efforts to a minimum" (p.68). According to the authors, this Hypothesis predicts that, among other things, creole languages will lack morphology, where lack of morphology is considered as a means of "maximizing semantic

transparency" (p.62). The HC data constitute a direct counterexample to this claim in manifesting a significant number of productive derivational affixes. Indeed, the size of the HC inventory is impressive in view of the fact that some languages, not known to be creoles e.g. Vietnamese, do not even have one derivational affix.

The HC data constitute a counterexample to the Semantic Transparency Hypothesis from yet another point of view. In the HC inventory, there is not necessarily a "one-to-one correlation between semantic elements and structural surface units." For example, the agentive and the attributive suffixes are homophonous. The form *de-* is either inversive or privative. Furthermore, Haitian has two suffixes used to form nouns that refer to a place of origin, and the principles governing the choice between the two affixes *-wa* and *-yen* —either semantic or phonological—, if any, are not known. The Semantic Transparency Hypothesis would predict that there should be only one (if at all) affix deriving nouns that refer to a place of origin in HC. Semantic Transparency Hypothesis also predicts a lack of semantic extensions and idiosyncrasies in the lexicon of creoles. As we saw in section 3, and as will be further discussed below, semantic extensions and idiosyncrasies abond in HC.

In contrast to Seuren and Wekker, McWhorter (1998) allows for the presence of derivational affixes in creole languages. He claims, however, that "in languages known as creoles, derivation is generally semantically transparent" (1998:!797). In the theoretical approach adopted in this paper, productive morphology is, by definition, semantically transparent since affixes have categorial features, meaning, selectional properties, etc. In this view, the productive morphology of a creole language cannot be claimed to be more transparent than the productive morphology of a non-creole language.

In line with the Bickertonian view that creole languages would reflect Universal Grammar in its unmarked form (e.g. Bickerton 1984), it has been proposed that the size of a creole's morphological inventory is determined by universal principles (e.g. Mühlhäusler 1980: 36). The relexification account of creole genesis presented in section 4 rather shows that the morphological inventory of a given creole is, to a large extent, determined by that of its substratum languages, provided that suitable forms can be found in its superstratum language. Furthermore, the comparison of the morphological inventory of HC with those of its contributing languages shows that if HC has less productive affixes than French, its lexifier language, it has more productive affixes than Fongbe, one of its substratum languages (see Table 3). The claim by Thomason (2001: 168), according to which pidgins and creoles "have very limited morphological resources compared with those of the lexifier and other input languages", is thus not borne out by the HC data.

McWhorter (1998) holds that semantic drift creates endless lexicalisations over time. According to him, since languages that are known to be creoles are relatively young langua-

ges, there has not been time for idiosyncratic lexicalisations to be formed in these languages. McWhorter's view thus predicts a lack of semantic extensions and idiosyncrasies in the lexicon of creole languages. This prediction is far from being borne out by HC data. Indeed the Haitian lexicon is full of idiosyncrasies of all kinds, as was already shown in section 3. The following paragraphs add further examples.

In section 2.4, we saw that *de-* productively derives new verbs that have either an inversive/privative meaning with respect to the base it attaches to. There are several Haitian words beginning with the form *de-*, which at first glance, may look like the prefix *de-*. Closer examination of these words, however, shows that in these cases, *de-* cannot be associated with the productive affix *de-* be it inversive or privative. For example, consider the word *debaba* 'to mow (a lawn), to weed' (from Valdman *et al.* 1981). Not only is there no verb **baba*, but there is no noun **baba* with a related meaning. The lexical entry *baba* in Valdman *et al.* (1981) is glossed as 'idiot'. It thus appears that *baba* and *debaba* are not morphologically related. (See also DeGraff 2001 for discussion of this pair.) *Debaba* must thus be listed in the lexicon. The Haitian verb *demele* constitutes another idiosyncrasy. According to Valdman *et al.* (1981), the verb *demele* means 'to untangle', 'to get along (manage)' and 'to shuffle (cards)'. The action of shuffling cards has the effect of mixing the cards rather than that of untangling them. This meaning is thus closer to that of *mele* 'to mix, to blend'. This is a rare type of idiosyncrasy. Another set of data concerning *de-* is presented in (50). In this case, *de-* occurs with a verbal base, derived from a noun. For example, the noun *plim* 'feather, body hair, fur' is converted into a verb by means of the verbalising suffix *-e* yielding *plimen* 'to pluck'. This verb may occur with *de-*, yielding *de-plimen* which also means 'to pluck'. Thus, with or without *de-*, the verb has the same privative interpretation. In Valdman *et al.* (1981), the pairs of verbs in (50) are given the same definition.

(50) *degrennen*   *grennen*   < *grenn*
         'to shell'   'to shell'   'seed'

       dekalekale   < *kal*
         'to chip off, to peel off'   'to shell, to peel'   'covering(bark, skin, shell)'

       deplimen   *plimen*   < *plim*
         'to pluck'   'to pluck'   'feather, body hair, fur'

       derefize   *refize*   < *refi*(*z*)
         'to refuse'   'to refuse'   'refusal'

       devire vire   < *vire*
         'to turn'   'to turn'   'turn'

The data in (51) present a similar pattern of pairs of verbs. In this case, however, there are no nouns involved in the derivation of the verbs.

(51)   *dechire, chire*   'to tear, to rip'

           dechifonnen, chifonnen   'to wrinkle, to rumple'

           degengole, gengole   'to rush down'   (from Valdman *et al.* 1981)

Some pairs of adjectives also follow this pattern, as is examplified in (52).

(52)   *demefyan, mefyan*   'mistrustful'   (from Valdman *et al.* 1981)

In (50), (51) and (52), the form *de-* is simply semantically vacuous.[21] The existence of pairs of synonyms, such as those in (50), (51) and (52), is certainly not compatible with the view that there are no idiosyncrasies in a creole's lexicon. Furthermore, from the learner's point of view, the above data cannot be considered as being semantically transparent.

    Another type of idiosyncrasies involving the form *de-* consists in the semantic extensions found with verbs containing the productive prefix *de-*. Examples are given in (53).

(53) *degwosi*   'to loose weight, to smooth out, to rough-hew'

      dechouke   'to get someone fired, to remove from office, to uproot, to plow'

      dechaje   'to unload, to ejaculate'

      degagannen   'to cut the throat of, to overcharge'

      degonfle   'to deflate, to scatter, to make room for'

      degrade   'to demote, to damage, to take away the supernatural power of a dead person'

      degrennen   'to shell, to break a bill, to knock out, to thin out (forest)'

      dekoupe   'to eat copiously, to cut up, to interrupt'

      dekreta   'to cut of the comb of a rooster, to mistreat'

      demanbre   'to batter (a person), to ravage, to weaken, voodoo dwelling left by the ancestors'

      detripe   'to gut, to defame'   (from Valdman *et al.* 1981)

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[21] DeGraff (2001) considers as emphatic the verb *derefize* as opposed *refize* in (50). He also considers as emphatic *demegri*, as opposed to *megri*, both meaning 'to lose weight'. To my knowledge, no other author provides these emphatic interpretations for words containing the prefix *de-*. Furthermore, an emphatic interpretation of the other verbs in (50) (e.g. *dekale* 'to chip off, to peel off', *deplime* 'to pluck', etc.), is hard to imagine. Albert Valdman remarks, however, that "the emphatic connotation is suggested by the artful manner in which, in his novel *Dezafi*, the writer Franketienne piles up derivatives with *de-*". This remark suggests that the emphatic connotation associated with *de-* could come from the succession of words beginning with *de-*. The question at stake here is whether the emphatic interpretation claimed to be associated with *de-* is part of the meaning of *de-*, or a stylistic effect.

The semantic extensions of the kind found in (53) are idiosyncratic and they must be listed in the lexicon (see also DeGraff 2001).[22]

In section 2.5, we saw that the prefix *ti-* productively derives denominal nouns having the meaning 'a young NOUN' or 'a small NOUN'. There are semantic extensions of words containing the form *ti-*. These words have to be listed as such in the lexicon because, in contrast to words that have internal structure, in these cases, the whole is not predictable from its parts. These semantic extensions are manifested in euphemisms such as those in (54), or in expressions such as those in (55).

(54)　　*ti-bezwen*　(*bezwen* 'need')　'genitals (of a small boy)'

　　　　ti-devan　(*devan* 'front')　'genitals'

　　　　ti-wòz　　(*wòz* 'rose')　'menstrual period'

　　　　ti-gigit　　(*gigit* 'penis')　'penis'

　　　　ti-pijon　　(*pijon* 'pigeon')　'penis'

　　　　　　　　　　　　　　　　(from Valdman 1996; Valdman *et al.* 1981)

(55)　　*ti-bourik*　　(*bourik* 'donkey')　　'rude person'

　　　　ti-fi　　　　(*fi* 'woman')　　　'virgin'

　　　　ti-gran moun (*gran moun* 'adult, old person')　'precocious child'

　　　　ti-grann　　(*grann* 'grandmother')　'precocious little girl'

　　　　ti-malis　　(*malis* 'folk character known for his cleverness')　'canny person'

　　　　ti-nouris　　(*nouris* 'wet nurse, nursing mother')　'new mother'

　　　　ti-tèt　　　(*tèt* 'head')　　'birdbrain'

　　　　　　　　　　　　　　　　(from Valdman 1996; Valdman *et al.* 1981)

Morphological conversion in section 2.7 was shown to derive nouns from verbs in a very productive way. Similar cases, whose properties are not predictable, were considered to be relisted in the mental lexicon. Likewise, the data discussed in section 3 constitute idiosyncrasies that need to be listed in the mental lexicon.

In addition to the data in section 3, the above data demonstrate in an unequivocal way the existence of various types of idiosyncrasies in the HC lexicon. They show that idiosyncrasies are no 'exceptions' in this lexicon. McWhorter's (1998) prediction that there has not been time for idiosyncratic lexicalisations to be formed in creole languages is most certainly not borne out by the HC data. This conclusion is even more striking considering the

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[22] The discussion of the source of these idiosyncrasies is far beyond the scope of this paper. This topic, however, is a goldmine for future debates on creole genesis.

fact that HC has only 200 years of independent existence.[23] This conclusion is congruent with that in Braun and Plag (this volume) who found good evidence for idiosyncracies at a stage where Sranan was only one hundred years old.

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[23] Singler (1996) establishes the creation of HC between 1680 and 1740. According to Hilaire (1993), African languages were spoken in Haiti up until the beginning of the nineteenth century. At the time of the Revolution, in 1791, the by-then well established creole took over. Assuming this to be correct, HC would be 200 years old. (For further discussion, see Singler 1996 and Lefebvre 1998:!52–8).

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