How Transparent is Creole Morphology?
A study of Early Sranan Word-Formation

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1. INTRODUCTION[1]

The morphology of creole languages has long been a neglected area of study. One reason for this state of affairs may well have been the wide-spread belief among linguists that creole languages are characterized (among other things) by little or no morphology. Evidence for this belief can be found in many publications, two of which may suffice to illustrate the point. For example, Seuren and Wekker (1986:66) claim that "morphology [is] essentially alien to creole languages", and in a recently published textbook on contact languages, we read that "[m]ost pidgins and creoles either lack morphology entirely or have very limited morphological resources compared with those of the lexifier and other input languages." (Thomason 2001:168).

In a similar line of argument, it has been claimed that the derivational morphemes of the input languages are lost in creolization and are not reconstituted later (Mühlhäusler 1997, Bickerton 1988, Jones 1995, McWhorter 1998).

It is also a wide-spread belief that, if a creole has morphology at all, it will be characterized by regular and semantically transparent morphology. This hypothesis is explicitly argued for by Seuren and Wekker (1986) and, in considerable detail, more recently by McWhorter (1998, 2000). In Thomason's words (2001:168), "[m]orphology also tends to be extremely regular when it does exist in pidgins and creoles, without the widespread irregularities that are so very common (to the distress of students of foreign languages) in other languages' morphological systems." In what follows, we will call this 'the semantic transparency hypothesis'.

There is, however, a growing literature on the morphology of creole languages in which it is argued that the above claims are wrong or need further qualification. For example, several authors have shown that affixation, compounding, reduplication and transposition are major word-formation processes in creoles (DeGraff 2001, Wekker

1996, Dijkhoff 1993, Sebba 1981), and have argued that semantic opacity is not generally absent from creoles (DeGraff 2001, Plag 2001).

In this paper, we will investigate these issues in more detail to shed new light on the nature of creole morphology and the role of morphology in creolization, using data from Early Sranan, an English-based creole language spoken in Suriname in the 18th and 19th centuries.

We will show that a large proportion of the lexical stock of Early Sranan consists of complex words, and that affixation, compounding and reduplication are major word-formation processes in Early Sranan. It will become clear that the derivational morphemes of the input languages (English, Gbe, Kikongo and Twi) are completely lost in the creolization of Sranan, which stands in remarkable contrast to other creole languages like French-based Haitian Creole or Spanish / Portuguese-based Papiamentu, which have preserved (or reconstituted) bound morphemes of their input languages.

Furthermore, we will show that the semantic transparency hypothesis is untenable, both on theoretical and on empirical grounds. Semantic opacity in creoles is inevitable and comes about through the borrowing of complex words from the input languages. Creoles and non-creoles are therefore synchronically indistinguishable with regard to their derivational morphology.

The article is structured as follows. In the next section, we explain our data sources and methodology. Section 3 is devoted to the analysis of the complex words we find in Early Sranan, before we investigate in section 4 the problem of semantic transparency. Our results are summarized in section 5, the conclusion.

2. DATA AND PROCEDURE

The roots of Sranan go back to the second half of the 17th century when a group of English planters and their slaves settled in the colony of Suriname on the Caribbean coast of South America. The influence of the English in Suriname lasted for only approximately 30 years, because in 1667 the colony came under the Dutch rule, and by c. 1680 the English had practically all left the colony. Thus, Sranan stands apart from many other creole languages because of a relatively short period of contact with its superstratum English, and a relatively long contact with another European language – Dutch, whose influence is traceable in a considerable layer of today's Sranan vocabulary. Moreover, the massive import of African slaves until the 1850s led to the fact that the native West African languages of the Surinamese slaves, Gbe and Kikongo (Arends 1995:248), played a considerable role in the development of Sranan.

The present paper deals with Sranan as it was documented in roughly the first one hundred years of its existence. We have chosen *Early* Sranan as an object of investigation for two reasons. First, as shown in the growing body of diachronic research, the study of early stages of a creole language can give us new and valuable insights into the nature of creolization. Second, the data from early stages of a creole can serve as a good test of the semantic transparency hypothesis: if we prove that Sranan displayed instances of opaque derivation already in or shortly after its formative years, this would constitute a strong counterargument to McWhorter's (1998:798) assertion that semantic opacity of non-creole languages (if existent at all) is the result of a long-term semantic drift.

The main source of data used for the present paper is Christian Ludwig Schumann's *Neger-Englisches Wörterbuch* of 1783, which contains 2391 types and 17731 tokens.[2] Schumann's dictionary was chosen mainly because it is the largest and the most reliable source of Early Sranan (Kramp 1983:3, Arends 1989:19, Bruyn 1995:154-155). Schumann worked with informants who were native speakers of Sranan and it is most likely that he was a proficient speaker of the creole himself. His dictionary provides accurate and abundant information, both linguistic and cultural (cf. e.g. Bruyn 1995:154-155, Arends 1989:19).

Additionally, six other sources of Early Sranan were consulted in the course of the analysis: Van den Berg's (2000) study of Early Sranan in court records of 1667-1767, Van Dyk's (c1765) language manual, Herlein's (1718) Sranan fragment in his *Description of the Colony of Suriname*, Nepveu's *Annotations to Herlein's (1718) Description of Suriname* (1770), Focke's *Neger-Engelsch Woordenboek* (1855) and Wullschlägel's *Deutsch-Negerenglisches Wörterbuch* (1856). These sources were used for verification and falsification of specific analyses, as well as for translations or etymology of certain words, for which Schumann's dictionary provided only insufficient information.

We computerized all 18th century sources and extracted word lists from the resulting files. From Schumann's word-list we then extracted manually all words that were putatively complex. In a further step, the entire dictionary was scrutinized manually for putatively complex words that had not made it into the word-list for orthographical reasons, spotting complex words that were neither spelled with a hyphon, nor as a single orthographic word, but as two orthographic words. As shown by the examples in section 3, all three types of orthographic representation of complex words occur in the sources.

Our idea was to apply a rather generous policy of what might count as 'putatively complex' in these initial steps of data gathering in order not to miss any potentially pertinent items. Hence we arrived at a long list of words that was then subject to a thorough morphological analysis, the first step of which was to exclude all non-complex words. As is well-known among morphologists, the determination of what may count as a complex word is not a trivial matter (cf. e.g. Bauer 1988:109ff, Katamba 1993:19ff), and often the topic of theoretical debates, as for example the discussion of compounds being either morphological objects, i.e. complex words, or syntactic objects, i.e. phrases. We have regarded as complex those items that consist of two and more elements where at least one element was attested elsewhere. Of these items, only those were considered complex *words* which, firstly, appear to be items with a syntactic category specification of the X°-level (i.e. N, V, A, [3] etc.) and, secondly, are syntactically inseparable. Thus, e.g. the Early Sranan word *tinnatu* - 'twelve' was regarded as complex because it possesses a syntactic category specification of the X°-level (it is a numeral) and cannot be syntactically separated without a fundamental change in meaning. As is quite common in such classification exercises, there are often

borderline cases, where firm evidence for or against a certain decision is lacking. In the majority of cases, however, matters were rather clear and none of the crucial arguments presented in section 4 hinges on the potentially controversial status of an item as a complex word.

In our overview of Early Sranan word-formation patterns given in section 3 below, we have classified the patterns as either affixation, compounding or reduplication. This is a somewhat simplified picture, since a strict boundary between affixation and compounding is notoriously hard to draw. Some theories (e.g. Höhle 1982 for German) even deny such a distinction. In a detailed analysis of the Early Sranan patterns, Braun (2001) breaks up the distinction between affixation and compounding into four properties:[4] boundness (affixes are bound, compound elements are not bound), selectivity (affixes are highly selective, compound elements are not), specificity (affixes have a less specific, i.e. more abstract meaning), and serialness (affixes form larger series of words). In this approach the properties cluster in different ways with different morphemes, with prototypical affixes at one end of a scale, and prototypical bases at the other end. For the purposes of the present paper, such a fine-grained analysis is not necessary and we therefore confine ourselves to the more traditional classification into affixation and compounding.

3. WORD-FORMATION INVENTORY OF EARLY SRANAN

The most remarkable quantitative finding about Early Sranan word-formation is perhaps the sheer number of complex words available in Schumann's dictionary. Of the 1644 words, 676 (i.e. 41 %) are complex. These words instantiate 32 different word-formation patterns, of which 11 are productive. These findings demonstrate that earlier claims about the absence or marginality of creole morphology are incorrect.

In the following sub-sections, we illustrate some patterns of affixation, compounding and reduplication as found in Schumann (1783) in order to show the richness of word-formation in Early Sranan (see also Koefoed and Tarenskeen 1996 for some discussion of the Early and Modern Sranan lexicon). For full documentation and discussion of individual patterns the reader is referred to Braun (2001).

3.1. Affixation

Affixation is a common word-formation device in Early Sranan: 177 out of 676 complex words in Schumann's dictionary are formed by means of affixation. The data from Schumann's dictionary demonstrate that Early Sranan developed a number of affixes already during the initial stages of its existence.

Early Sranan makes use of two deictic markers *-weh* (< E. *away/?way*) and *-dom(m)/-dum(m)/don* (< E. *down*). The affix *-weh* can be attached to verbal or adjectival bases, as is shown in (1a, b and c). When attached to verbal bases, it serves to indicate the direction of the action away from the point of reference. With adjectives, it may either mark spatial deixis, as in (1b), or temporal deixis (temporal distance away from the point of reference), as in (1c).

(1) **[VERB/ADJECTIVE + weh]$_{VERB/ ADJECTIVE}$**

	derivative	**meaning**	**base**	**meaning of base**
a.	*giwèh*[5]	'give away'	*gi* (V)	'give'
	gowèh	'go away'	*go* (V)	'go'
	hitiwèh	'throw away'	*hiti* (V)	'throw'
b.	*langaweh*	'far / far away'	*langa* (A)	'long (spat. & temp.)'
c.	*grandeweh*	'long ago'	*grande* (A)	'big, great'

The affix *–dom(m)/-dum(m)/don* can occur with verbs, as in (2a) or with bound roots, as in (2b) and, similarly to the affix *–weh,* denotes spatial deixis (it indicates the direction down from the point of reference):

(2) **[VERB/BOUND ROOT + dom]$_{VERB}$**

a.	*bukkudumm*	'to bend (down)'	*bukku* (V)	'bend (down)'
b.	*fadom*	'to fall (down)'	*fa*-(bound root)	'?fall'
	liddom	'to lie / to lay (down)'	*li*- (bound root)	'?lie'
	siddom	'to sit (down)'	*si*- (bound root)	'?sit'

The patterns – in (1) and in (2) seem to be unproductive in Early Sranan.

Another affix is *-tentîn* (< E. *time* + D. *tien* ‘ten’) that is attached to cardinal numerals from two to nine to form tens from twenty to ninety, as it is shown in (3):

(3) **[NUMERAL + tentîn]**$_{\text{NUMERAL}}$

tutentîn	‘twenty’	*tu* (Num)	‘two’
dritentîn	‘thirty’	*dri* (Num)	‘three’
fotentîn	‘forty’	*fo* (Num)	‘four’
feifitentîn	‘fifty’	*feifi* (Num)	‘five’
siksitentîn	‘sixty’	*siksi* (Num)	‘six’
sebententîn	‘seventy’	*seben* (Num)	‘seven’
aititentîn	‘eighty’	*aiti* (Num)	‘eight’
nenitentîn	‘ninety’	*neni* (Num)	‘nine’

Early Sranan also makes use of the person-forming affix *-man* (< E. *man*) which can be attached to nominal bases, as in (4a), to adjectival bases, as in (4b), and to verbal bases, as in (4c). The meaning of the output nouns is always ‘person having to do with X’, where X may be N, A or V.

(4) **[NOUN/ADJECTIVE/VERB + man]**$_{\text{NOUN}}$

a.	*asêhman*	‘magician / witch’	*asêh* (N)	‘magic / witchcraft’
	djariman	‘gardener’	*djari* (N)	‘garden’
	sussuman	‘shoemaker / cobbler’	*sussu* (N)	‘shoes’
b.	*doofuman*	‘a deaf person’	*doofu* (A)	‘deaf’
	grangman	‘governor / ruler’	*grang* (A)	‘old / great’
	lesiman	‘lazybone’	*lesi* (A)	‘lazy’
c.	*helpiman*	‘helper / midwife’	*helpi* (V)	‘to help’
	naiman	‘tailor / seamstress’	*nai* (V)	‘to sew’
	tofreman	‘magician / witch’	*tofre* (V)	‘to do magic’

The pattern introduced in (4) is the most productive affixation pattern attested in Schumann’s dictionary – 67 words out of the total 177 words produced by affixation

belong to the pattern in (4). Out of the three subpatterns, V+*man* is the most productive.

Another two affixes attested are the gender markers *man(n)-* (< E. *man*) and *uman-* (< E. *woman*) which can be preposed to nouns denoting animals, human beings or a person's occupation with the purpose of indicating natural gender:

(5) **[man(n)/uman + NOUN]$_{NOUN}$**

a.	*man-doksi*	'drake'	*doksi* (N)	'duck'
	mann-futuboi	'male servant'	*futuboi* (N)	'servant'
	mannpikin	'boy / son'	*pikin* (N)	'child'
b.	*uman-doksi*	'duck'	*doksi* (N)	'duck'
	uman-futuboi	'maid'	*futuboi* (N)	'servant'
	umanpikin	'daughter'	*pikin* (N)	'child'

There are two abstract-noun forming affixes in Early Sranan, *-sanni* (< E. *something*) and *-fasi* (< E. *fashion*), which attach to adjectives and verbs:

(6) a. **[VERB + sanni]$_{NOUN}$**

krukuttusanni	'injustice'	*krukuttu* (V)[6]	'be wrong'
lausanni	'folly / stupidity'	*lau* (V)	'be mad / foolish'
prefurusanni	'prank / tomfoolery'	*prefuru* (V)	'to play fool'

b. **[ADJECTIVE/VERB + fasi]$_{NOUN}$**

kondrefasi	'worldliness'	*kondre* (A)	'worldly'
laufasi	'folly / stupidity'	*lau* (V)	'to be stupid'
porifasi	'depravity'	*pori* (V)	'spoil / ruin / do harm'

There was no evidence in the early sources (nor in later ones) that any of the superstratum affixes has survived in Early Sranan. The creole has developed its own inventory of affixes in the course of creolization, and all English affixation is lost.

3.2. Compounding

Compounding is the most common word-formation process in Early Sranan: the majority of complex words from Schumann's dictionary (378 out of a total of 676) are compounds. This fact confirms claims (as e.g. by Holm 2000:130) that creole languages favor new combinations of free morphemes rather than new combinations of bound morphemes. Early Sranan makes use of quite a number of different compounding patterns, which we will illustrate in the following paragraphs.

The most productive pattern is the combination of two nouns. Different structural subpatterns can be singled out within this group, depending on whether the constituents are simplex, complex, or reduplications. As can be inferred from (7), N+N compounds in Early Sranan can consist of two simplex nouns, as in (7a), or of a complex noun and a simplex noun, as in (7b) and (7c), or of a simplex noun and a reduplicated noun, as in (7d and e), or of two complex nouns, one of which is reduplicated, as in (7f).

(7) **[NOUN + NOUN]$_{NOUN}$**

a.	*honi-kakka*	'wax'	*honi* (N)	'honey'	*kakka* (N)	'droppings'
	muffe neti	'dusk'	*muffe* (N)	'mouth'	*neti* (N)	'night'
	sorro watra	'pus'	*sorro* (N)	'sore'	*watra* (N)	'water'
b.	*potimanjakketi*	'salt fish of special kind'	*potiman* (N)	'poor man'	*jakketi* (N)	'coat'
c.	*muffe sabbatem*	'dusk'	*muffe* (N)	'mouth'	*sabbatem* (N)	'evening'
d.	*smeri-wirriwirri*	'basil'	*smeri* (N)	'smell'	*wirriwirri* (N)	'grass'
e.	*jamjam-sakka*	'stomach'	*jamjam* (N)	'food'	*sakka* (N)	'sack / bag'
	sakkasakka-snekki	'rattle-snake'	*sakkasakka* (N)	'rattle'	*snekki* (N)	'snake'
f.	*Bakkrakondre-jamjam*	'European fruits and plants'	*Bakkra-kondre* (N)	'Europe'	*jamjam* (N)	'food'

Early Sranan N+N compounds can be both endocentric (e.g. (7e)) and exocentric (e.g. (7b)). However, endocentric compounds with heads in the rightmost position prevail.

Another productive pattern in Early Sranan is [ADJECTIVE + NOUN]$_{NOUN}$, which also consists of several subpatterns: simplex A+simplex N, as in (8a), or simplex A+complex N, as in (8b), or simplex A+reduplicated N, as in (8c), or a reduplicated A+reduplicated N, as in (8d). Of these patterns, the simplex A+simplex N pattern seems to prevail: 70 words out of 75 words formed according to the A+N pattern are combinations of a simplex adjective and a simplex noun.

(8) **[ADJECTIVE + NOUN]$_{NOUN}$**

a.	*dungruhosso*	‘prison’	*dungru* (A)	‘dark’	*hosso* (N)	‘house’
	ougri meti	‘tiger’	*ougri* (A)	‘evil’	*meti* (N)	‘animal’
b.	*tarraissredeh*	‘day before yesterday’	*tarra* (A)	‘another’	*issredeh* (N)	‘yesterday’
c.	*drewirriwirri*	‘hay’	*dre* (A)	‘dry’	*wirriwirri* (N)	‘grass’
d.	*soso-takkitakki*	‘prattle’	*soso* (A)	‘useless’	*takkitakki* (N)	‘talk, gossip’

Early Sranan A+N compounds often have a non-compositional meaning (e.g. *tranga heddi*, literally ‘strong head’, means ‘stubborness’, and *drewirriwirri* does not simply mean ‘dry grass’, but ‘hay’), and are characterized by syntactic atomicity, e.g. the elements of the A+N compound *dungruhosso* – ‘prison’ cannot be separated by any other element: if we inserted the adjective *biggi* – ‘big’ in between the components of the compound *dungruhosso* it would no longer bear the meaning ‘prison’.

A+N compounds can be both endocentric (as in 8a), which are predominantly right-headed, and exocentric (as, for example, *krukuttu tereh* ‘scorpion’, literally ‘crooked tail’).

Verb-noun compounds are also attested in Schumann’s dictionary. Within this pattern two subpatterns can be singled out: simplex V+simplex N, as in (9a), and reduplicated V+simplex N, as in (9b).

(9) **[VERB + NOUN]$_{NOUN}$**

a.	*tingi oli*	‘rape oil’	*tingi* (V)	‘to stink’	*oli* (N)	‘oil’
	wippi-snekki	‘very thin	*wippi* (V)	‘to whip’	*snekki* (N)	‘snake’

		snake’				
b.	*wakkawakka-<u>müra</u>*	‘ants of special kind’	*wakkawakka* (V)	‘to walk to and fro’	*müra* (N)	‘ants’

With respect to headedness, two groups of V+N compounds can be distinguished in Early Sranan: exocentric compounds where the noun can be the direct object of the verb, e.g. *kakkawatra* ‘diarrhea‘ (lit. ‘to excrete water’), and endocentric compounds where the noun is not the direct object of the verb, as it is the case in all examples in (9).

The pattern with the least number of examples (only 8) and no subpatterns is the one in which apparently verbs occur as the right element:

(10) **[NOUN + VERB]$_{NOUN}$**

belle-<u>hati</u>	‘stomach-ache’	*belle* (N)	‘belly’	*hati* (V)	‘to hurt’
vool-kweki	‘chicken-breeding’	*vool* (N)	‘chicken’	*kweki* (V)	‘to breed’
grunn <u>sheki</u>	‘earthquake’	*grunn* (N)	‘earth’	*sheki* (V)	‘to shake’
hatti<u>bronn</u>	‘anger / wrath’	*hatti* (N)	‘heart’	*bronn* (V)	‘to burn’
tappo<u>bari</u>	‘thunder’	*tappo* (N)	‘heaven’	*bari* (V)	‘to cry’

However, such an analysis creates problems with regard to the headedness of these compounds. If the final elements of the compounds are verbs and Sranan compounds are standardly right-headed,[7] it is unclear how the compounds in (10) can be nouns. This problem is avoided if we take into account the multifunctionality of members of different word-classes in Early Sranan (Voorhoeve 1981). Thus, one can easily argue that the second constituents of the compounds in (10) are not verbs, but deverbal nouns, and that these compounds are regular endocentric, right-headed compounds. Thus, e.g. the words *belle-hati* could be paraphrased as ‘belly-hurting’, *boon-jam* as ‘bones-eating’, *tappobari* as ‘heaven-crying’, etc. Under this interpretation two groups of N+V / N compounds can be singled out in Early Sranan. The first group would include the words of the type *belle-hati,* where the first element can be the subject, but not the object of the verb. These words resemble English root compounds of the type *nosebleed* and *sunshine,* where the first element also can be the subject, but not the object of the verb (see Bauer 1983:205 for discussion). The second group then would include

words of the type *vool-kweki* ‘chicken-breeding’, where the first element can be the object of the second element, and the semantic interpretation of the whole complex word can be derived from the argument structure of the head. In the latter cases one can draw a parallel to English synthetic compounds of the type *snow removal, truck-driving, fox-hunting* etc.

Besides the patterns discussed above, which appear to be rather common word-formation devices, there are a number of other compounding patterns which are more marginal in Early Sranan word-formation, but are nonetheless worth mentioning here because they demonstrate the wide variety of compounding patterns available in Sranan already at the initial stages of its development.

(11)

a. **[N+NUM]$_{N}$**

pisifo	‘piece (of money)-four’	‘one guilder / four shillings’

b. **[N+NUM+NUM/DET]$_{N}$**

Gado dri-wan	‘God-three-one’	‘Trinity’

c. **[ADV+N]$_{N}$**

ondro-futu	‘under-foot’	‘sole of the foot’

d. **[DET+DET]$_{DET}$**

allawan	‘all / every-one’	‘same / indifferent’
morro menni	‘more-many’	‘several / various’

e. **[ADJ+ADV]$_{ADV}$**

pikin morro	‘small-more’	‘almost / nearly’

f. **[PREP+V]$_{ADV}$**

tehgo	‘till-go’	‘continually / incessantly / eternally’

g. **[PREP+ADV]$_{ADV}$**

teh dorro	‘till-through’	‘completely / utterly / through and through’

h. **[V+ADV]$_{V}$**

kommoppo	‘come-up’	‘to go out / to stand up’

i. **[NUM+N+N]$_{N}$**

	tu deh worko	‘two-day-work’	‘Tuesday’
j.	**[NUM+CONJ+NUM]$_{NUM}$**		
	tînnatu	‘ten-and-two’	‘twelve’

To summarize, we have shown in this subsection that Early Sranan makes extensive use of compounding as a word-formation device. We will now turn to reduplication.

3.3 Reduplication

Reduplication is said to be a much more common type of word-formation among the languages of the world than different types of affixation (Bauer 1988:25; see also Moravcsik 1978 for an overview of reduplication types in the languages of the world). Moreover, reduplication is considered to be a mechanism largely favored by creole languages (Holm 2000: 121; Huttar and Huttar 1997: 395, see also Sebba 1981 for brief discussion). Early Sranan also makes use of reduplication as a word-formation device. However, in comparison to affixation and compounding, it is less common: only 88 words out of the total of 676 complex words from Schumann’s dictionary are produced by reduplication. Moreover, many of the reduplicated words are combinations of bound morphemes, and thus unproductive.

The most productive type of reduplication attested in Schumann’s dictionary is reduplication of verbal bases with nominalizing effect, as is shown in (12). The meanings of nominalizing reduplication in Early Sranan may be of different kinds: ‘instrument for Ving’, as in (12a); ‘act of Ving’, as in (12b), ‘result of Ving’, as in (12c), and ‘someone who Vs / something that Vs’, as in (12d).

(12) **[RED-VERB]$_{NOUN}$**

a.	*kamkamm*	‘comb’	*kamm* (V)	‘to comb’
	krabbokrabbo	‘rake’	*krabbo* (V)	‘to scratch’
	nainai	‘needle’	*nai* (V)	‘to sew’
	sibisibi	‘broom’	*sibi* (V)	‘to sweep’
b.	*fumfum*	‘beating’	*fumm* (V)	‘to beat’
c.	*takkitakki*	‘prattle’	*takki* (V)	‘to talk’

d. *djompo djompo* ‘grasshopper’ *djompo* (V) ‘to jump’

Nominalizing reduplication is also common in other creole languages, e.g. in Saramaccan (Bakker 1987) and Berbice Dutch (Kouwenberg 1994:248f).

Intensifying reduplication is another reduplication process found in Schumann’s dictionary. Here, two major types can be distinguished: reduplication of adjectives with the resultant meaning ‘very A’, as in (13a), and reduplication of members of other word-classes, such as adverbs, nouns or determiners, also with intensifying effect, as in (13b).

(13) a. **[RED-ADJECTIVE]ADJECTIVE**

bun-bun	‘very good’	*bun* (A)	‘good’
krinkrin	‘very clear, very clean’	*krin* (A)	‘clear, clean’
moimoi	‘very beautiful’	*moi* (A)	‘beautiful’

b. non-adjectival types

horro-horro	‘to make many holes’	*horro* (N)	‘hole’
kwetikweti	‘completely’	*kweti* (Adv)	‘quite’
wanwàn	‘alone’	*wan* (Det)	‘one’
nono	‘not at all’	*no* (Adv)	‘no, not’

Intensifying reduplication is also wide-spread in other creole languages (e.g. Bakker 1987, Steffensen 1979).

One more interesting type of reduplication attested in Schumann’s dictionary is the so-called resultative reduplication where verbal bases are reduplicated with the purpose of creating adjectives with the meaning ‘result of Ving’, as shown in (14):

(14) **[RED-VERB]ADJECTIVE**

brokko-broko	‘broken’	*brokko* (V)	‘to break’

This type, though productive in some other creole languages and Gbe (e.g. see Lefebvre 1998:319-320 for Haitian, Lefebvre and Brousseau 2002:202ff for Gbe), seems

to be marginal in Early Sranan; there is only one example of this type attested in Schumann's dictionary.

3.4 Conclusion

The discussion of complex words in Early Sranan presented above has shown that, contrary to earlier claims, creole morphology is neither marginal nor non-existent. During the first one hundred years of its existence Early Sranan has developed a large word-formation inventory which consists of a variety of derivational patterns and allows lexical expansion out of its own resources. Another significant finding emerging from the analysis of the early Sranan sources is that there is no trace left of English bound morphemes, apart from unanalyzed borrowings such as *paiman* < E. *payment*. Superstrate morphology is completely lost.

We may now turn to a more detailed discussion of some of the Early Sranan data to shed new light on the problem of semantic transparency.

4. SEMANTIC TRANSPARENCY IN CREOLE MORPHOLOGY

4.1 The semantic transparency hypothesis

As already mentioned in the introduction, there is the wide-spread opinion that creoles are characterized by semantically transparent and regular derivational morphology (e.g. Seuren / Wekker 1986:65, McWhorter 1998, 2000). The main rationale for this hypothesis is that creoles are fairly young languages, so that one chief factor responsible for morphological opacity in older languages is inactive, i.e. long-term semantic drift. McWhorter (1998:798) writes that the "semantic irregularity of derivation arises from the inevitable process of semantic drift and metaphorical inference".

However, apart from long-term semantic drift, opacity can also arise through various other mechanisms, borrowing chiefly among them. Opacity is therefore to be expected in a language arising through language contact, such as a creole.

Before we will look at the Early Sranan data to see whether this prediction is borne out by the facts, some basic theoretical points concerning semantic transparency need to be clarified, in order to make an informed discussion possible. For example, what exactly is meant by the term 'semantic transparency'?

In order to clarify what we mean by 'semantic transparency' (or its opposite, opacity) we should perhaps first state what we do *not* mean by that term. This is important because psycholinguistic studies have shown that semantically totally opaque derivatives are not treated as complex words in the mental lexicon (e.g. McQueen and Cutler 1998). In other words, total non-transparency is non-morphology and neither in creoles nor in non-creoles do we find totally opaque morphology. The semantic transparency hypothesis can thus only be sensibly interpreted as referring to non-total opacity. This entails that semantic transparency is basically a gradient concept, with total transparency and total opacity being the endpoint on a scale of transparency. That such a scale is psychologically real has been shown by psycholinguists such as Gonnermann and Andersen (2001), Hay (2000, 2001). It is therefore not entirely clear on the basis of which data the semantic transparency hypothesis can be considered falsified. We will return to this question shortly.

How can semantic transparency in morphology be defined? In his morphology textbook, Bauer introduces the term as follows:

> "Transparency is the extent to which there is a clear match of meaning and form. To the extent that the relationship between the two is obscured, the construction is said to be opaque." (Bauer 1988:189)

In a more detailed recent study of morphological transparency, Ronneberger-Sibold gives the following definition:

> "transparency of complex words ... means the possibility of inferring a meaning from the parts of such a word ... and the way they are combined. The term therefore comprises not only morphological segmentability, but also the possibility of a semantic interpretation of the morphs combined." (Ronneberger-Sibold 2001:98)

According to both definitions, the relation of form and meaning is the central issue. Phonological and semantic similarity to other forms must coincide to make a complex word transparent. Segmentability and interpretability are functions of this similarity, and thus central ingredients of transparency.

There are several ways, in which segmentability and interpretability can be disturbed and opacity be created. As mentioned above, one very common way of marring transparency is metaphorical extension. If the meaning of complex words is metaphorically extended, the individual morphemes may still be segmentable, but the correct interpretation of the complex word will not be possible due to the change of meaning. As an example of such an extension consider the word *curiosity*, whose segmentability is not disturbed, but whose interpretation as 'curios thing' is to some extent obscure. DeGraff (2001) and Plag (2001) cite a number of examples that show that opacity resulting from metaphorical extension is undeniably present in creoles, and some of the compounds discussed in section 3 above further support this point. In his later paper, even McWhorter (2000:91) allows metaphorical extensions to be present in creoles, but disallows "cases in which the metaphorical connection between the synchronic interpretation and the original compositional one has become either completely unrecoverable, or only gleanable to the etymologist or historical semanticist".

However, and crucially, partial or complete unrecoverability can be observed not only with words that are extreme cases of metaphorical extensions. Ronneberger-Sibold (2001:99) observes that "[i]t is common lore of historical linguistics that, **by different kinds of diachronic change and borrowing**, transparency of complex words can be lost." (emphasis added). Apart from borrowing, "loss of transparency typically results from an interaction of sound change, semantic change (idiomatization), lexical change (the dying out of lexemes) and cultural change in various proportions" (2001:103). Some of these mechanisms are illustrated by the following examples from English and German:

(15) a. loss of morphemes: obsolete *hap* in *hapless*

b. phonological change: English *heal - health*,

German *hintbeere* lit. 'hind-berry'> *Himbeere* 'raspberry'

c. accidental phonological similarity:
latent - lately - late, hearse - rehearse, accord - accordion

(15a) presents an example of the dying out of a morpheme. While *hapless* and *happy* are still in use, the original stem *hap* is obsolete, turning *hapless* and *happy* into opaque formations. A different source of opacity, phonological change, was at work with the examples in (15b). In the case of *heal - health* the segmentability and relatedness is disturbed by the non-identity of the (in Old English times still identical) vowels. The German word for *raspberry* is another classical case in point. Here the phonological form of the first part of the former compound *hintbeere*, literally 'hind-berry', has made *Him-* a morph that does not occur outside this combination. Such morphs are often called *cranberry* morphs, and they necessarily bring opacity to the word they are part of, because they negatively impinge on the word's interpretability.

(15c) presents a different outcome of phonological change. While in (15b) phonological change led to a decrease in transparency, in (15c) phonological change has created an accidental relatedness which was not there before, but which could now be analyzed as non-transparent morphology. Thus *lately*, but not *latent*, is derived from *late*. A similar case is the pair *hearse - rehearse*. Finally, the case of *accordion* and *accord* illustrates the creation of accidental phonological relatedness through the borrowing of a word (Italian *accordion*).

As we will see in the next sub-section, examples of partial or complete opacity arising from mechanisms other than metaphorical extension are abundant in Early Sranan. From this it follows that synchronically, the outcomes of all these mechanisms are indistinguishable, i.e. synchronically, creole opacity is indistinguishable from non-creole opacity.

4.2 Morphological opacity in Early Sranan

Let us first look at cases where we have phonological relatedness without clear semantic relatedness:

(16)	a.	*nem-sheki*	‘namesake’	
		nem	‘name’	
		sheki	‘shake, move’	
	b.	*watramune*	‘watermelon’	(< E. *water*, D. *meloen*)
		watra	‘water’	
		mune	‘moon, month’	
	c.	*klossibai*	‘near to’	
		klossi	‘clothes’	

In all these cases we can segment the complex word easily into two constituents, but the interpretability is problematic. None of the complex words can be (fully) interpreted on the basis of the two constituents. The second elements of *nem-sheki*[8], and *watramune* show accidental phonological similarities with other Sranan words, as do *klossibai* and *klossi*, which have independently been borrowed from English (*close by* and *clothes*). Note that *watramune* could also be interpreted as a potential case of folk etymology, where the unknown second element *meloen* was replaced by a similar-sounding familiar word, which made the compound more transparent (given the shape of the referent of *mune*). But even if viewed as a case of folk etymology, *watramune* is still not completely transparent.

Another case of opacity whose exact origin is hard to pin down is *fu(r)furman*

(17)	*fu(r)furman*	1. ‘thief’, 2. ‘trigger (of a gun)’	
	fu(r)fur	‘steal’	
	-man	‘-er’	

While the interpretation ‘thief’ is totally transparent, the interpretation ‘trigger (of a gun)’ remains opaque. Under the assumption that the meaning ‘trigger’ is a metaphorical extension of the original meaning ‘thief’ (perhaps because of the crooked shape of the trigger of a gun), this example shows that even in a relatively short period of time we find diachronic processes at work leading to opacity.

A third class of non-transparent formations are reduplications without existing base words. These are abundant in Schumann's dictionary (see Braun (2001) for details), and we only list a small subset for illustration:

(18)	*bus(i)bus(i)*	'cat'
	kummakumma	'fish species'
	gobbogobbo	'a small type of peanut'
	biribiri	'rush (the plant)'

The putative base words *bus(i), kumma, gobbo,* and *biri* are not independently attested in any of the Early Sranan sources. This state of affairs is similar to the one in the major substrate language Gbe, which also has numerous reduplications without existing base words in its lexicon (Lefebvre and Brousseau 2002:197).

A fourth group of opaque complex words are reduplications with existing bases, but without a clear semantic relationship between the base and the reduplication. Consider the data in (19):

(19)	a.	*wasiwasi*	'wasp'
		wasi	'wash'
	b.	*kwasikwasi*	'a bush fox'
		kwasimamma	'a kind of big fish'
		mamma	'something very big', also: 'mother'
	c.	*wirriwirri*	'hair, grass, leaves'
		kappewirri	'thicket'
		kappe	'cut'
	d.	*woijowoijo*	'market'
		woijodia	'a kind of deer (species)'
		dia	'deer'

Finally, there is a very large group of complex forms with cranberry morphs as constituents. The examples in (20) and (21) illustrate this phenomenon. Question marks indicate that the form is uninterpretable, due to lack of independent attestations.

(20)	*gumarra*	‘good morning’	(< E. *good morrow*)
	guneti	‘good night’	(< E. *good night*)
	gu/gu-	?, not otherwise attested	
	gudu	‘goods, riches’	(< E. *good*)
	-marra	?, only attested in *tamarra*	(‘tomorrow’, < E. *tomorrow*),
	ta-	?, only attested in *tamarra*	

On the basis of *gumarra* and *guneti*, one could argue for the existence of a morpheme *gu/gu-* ‘good’. However, there is no evidence from outside these two words that could justify this morphemic analysis, apart from the existence of *gudu*, which is etymologically related, but has a different meaning. Even if one accepted *gu/gu-* ‘good’ as a possible analysis, a new question emerges, namely that of the status of *-marra.* This string is only attested outside *gumarra* in *tamarra* ‘tomorrow’, so that we end up here with basically the same problem as before, namely that we have segmented a string that constitutes a cranberry morph. Note that a similar problem occurs in English, if one would want to analyze the status of *to-* in *to-morrow*, *to-day*, *to-night*, which stresses the point that opacity in creoles and non-creoles may may take on very similar forms.

Analogous cases are *-mal* in *allamal*, the first elements in *faddom*, *siddom*, *liddom*, *jara-* in *jarabakka*, *bol* and *tri* in *boltri* and *kattantri*, *mussu-* in *mussudeh* and *mussudina* and a couple of other examples listed in (21):

(21)	a.	*allapeh*	‘everywhere’	
		allasanni	‘everything’	
		allatem	‘always’	
		allamal	‘all’	(< D. *allemaal* ‘all’)
		-mal	?, not otherwise attested	
	b.	*bukudumm*	‘bend (down)’	(< D. *bukken*, E. down),
		buku	‘bend (down)’	
		dom/don	‘down’ (Van Dyk 1765:127, Nepveu 1770:90)	
		faddom	‘fall (down)’,	(< E. *fall down*)
		siddom	‘sit (down)’	(< *sit down*)

	liddom	‘lie (down), lay’	(< *lie down*)
	fad-	?, not otherwise attested	
	sid-	?, not otherwise attested	
	lid-	?, not otherwise attested	
c.	*jarabakka*	‘yellowback (fish species)’	
	bakka	‘back’	
	jara	?, not otherwise attested	(< E. *yellow*)
	redi/geeri	‘yellow’ (Schumann 1783:233 / Focke 1855:37)	
		(< E. *red* / D. *geel*)	
d.	*kattantri*	‘cottontree’	
	boltri	‘a kind of heavy and hard wood’ (< E. *bully tree*)	
	bol	?, not otherwise attested	
	tri	?, not otherwise attested	
	boom	‘tree’	(< D. *boom*)
e.	*fleimussu*	‘bat’	(< E. *fly*, *mouse*)
	mussudeh	‘dawn’	(< ?-*day*)
	mussudina	‘short before midday’	(< ?-*lunch*)
	mussu	?, not otherwise attested	
f.	*sursakka*	‘anona muricata’	(< Tamil *siru-sakkei*, den Besten 1992)
	surdegi	‘leaven’	(< D. *zuurdeeg*)
	sakka	‘bag’	(< E. *sack*, D. *zak*)
	sur	?, not otherwise attested	
	degi	?, not otherwise attested	
g.	*Saramakka*[9]	‘tribe name’	
	sara	?, not otherwise attested	
	makka	‘thorn’	
h.	*wissiwassi*	‘silly’	(< E. *wishy-washy*)
	wissi	?, not otherwise attested	
	wassi	‘wash’	
i.	*sirrisirra*	‘crayfish’	
	sirri	‘seed’	
	sirra	?, not otherwise attested	

j.	*banna-gumba*	‘the part of the banana blossom under the fruit’
	gumba	?, not otherwise attested
k.	*kumsakka*	‘itching on the feet’
	kum	?, not otherwise attested
	sakka	1. ‘bag’, 2. ‘lower, make fall’

(21k) not only presents the problem of the cranberry morph *kum*, but also the problem that the possible meanings of the second element ‘bag’ or ‘lower, make fall’ seem to stand in no obvious relation to the meaning of the complex word: ‘itching on the feet’.

To summarize, the data show that semantic opacity effects are quite frequent in Early Sranan. In view of the massive empirical evidence the semantic transparency hypothesis cannot be upheld. The interesting question is of course what is responsible for the observed opacity effects. Given that we are dealing with data from a language which has not been in existence for more than one hundred years at the time of recording, long-term semantic drift can be excluded as a source of opacity. What the data show, however, is that the language has borrowed many unanalyzed complex forms, which, as other related forms are borrowed, are only partially reanalyzed and interpretable.

The presence of opacity effects in Early Sranan thus shows that non-transparency can occur already in the early stages of the emerging creole language. This is to be expected in a contact situation, where contact, and not semantic drift, is responsible for non-transparency. Synchronically, the outcomes of the different mechanisms are indistinguishable, so that, synchronically, creole opacity is indistinguishable from non-creole opacity.

5. Discussion and Conclusion

In this paper we have shown that a large proportion of the lexical stock of Early Sranan consists of complex words. Morphology can therefore not be considered marginal or even non-existent in this language (or in creoles in general). Among the word-formation processes, we find affixation, compounding and reduplication. The

comprehensive analysis of the available sources has also shown that derivational morphemes of the input languages are completely lost in the creolization of Sranan. None of the dozens of English affixes has survived creolization. This stands in remarkable contrast to other creole languages that have preserved (or reconstituted) bound morphemes of their input languages. Haitian has, among many others, *-syon* (< *-tion*), *-man* (< *-ment*), *-aj* (< *-age*) from French (e.g. Lefebvre 1998, DeGraff 2001), Papiamentu employs, among many others, Spanish-derived *-mentu* (< *miento*), *-dó* (< *dor*), *-shon* (< *-cion*) (Dijkhoff 1993). The reason for this discrepancy between languages like Sranan on the one hand, and languages like Haitian and Papiamentu on the other remains to be detected. Two factors are in principle possible, structural or socio-historical. For example, it is remarkable that both Spanish and French have a tendency of placing stress on their suffixes, which would make these elements more salient and more easily borrowable. However, this does not explain why English auto-stressed suffixes like *-ation* did not make it into the creole and why prefixes, which mostly have secondary stress in English, French and Spanish, did only survive in the said Romance-based creoles. Such considerations point into the non-structural direction. The crucial difference between the languages may not have been the morphological or phonological structure of their superstrates but the nature and length of contact between the superstrate and the creole. Furthermore, it is not clear whether languages like Haitian and Papiamentu have really preserved superstrate morphology in the creolization process, or whether they have reconstituted, i.e. borrowed, superstrate morphology long after creolization. A detailed investigation of these questions is clearly called for.

The analysis of complex words in Early Sranan has shown that the semantic transparency hypothesis is untenable. Semantic opacity in creoles primarily comes about not by long-term semantic drift, but through the borrowing of complex words, which are later not, or only partially, reanalyzed. This leads to an abundance of non-transparent complex words whose segmentability and interpretability are severely restricted. On the basis of their derivational morphology, creoles and non-creoles are therefore synchronically indistinguishable.

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Note

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[2] These figures result from an automatic count of types and tokens with the help of text retrieval software. The results of such counts are not entirely reliable because they do not take into account orthographic inconsistencies or errors. For example, if a word is spelled in two different ways, this results in two different types counted. The manually corrected number of different types is 1644.

[3] We have used the following abbreviations for linguistic categories: A - Adjective, Adv – Adverb, Conj – Conjunction, Det – Determiner, N – Noun, Num – Numeral, Pr – Pronoun, Prep – Preposition, V – Verb.

[4] See Packard 2000, Lüdeling et.al. 2002, for a similar approach.

[5] For reasons of space, we only provide one orthographic variant of each word in the examples.

[6] It should be noted here that the word *krukuttu* is, as many words in Sranan, multifunctional: it can be, according to Schumann (1783:165), an adjective 'crooked', a noun 'crookedness / injustice' and a verb 'to be crooked'. Since multifunctionality is a wide-spread phenomenon in Sranan (Voorhoeve 1981), the decision about the word-class affiliation of a given item is often problematic. Taking this into consideration in the present paper we defined word-class membership of a given word by correlating the information on the word-class affiliation of this word provided in Schumann's dictionary with the

word-class of the bases that participate in the same word-formation pattern. Thus, in the case of *krukuttu*, Schumann's dictionary provides three possible word-classes, but all the other bases to which the suffix *–sanni* can be attached are verbal bases. Since *krukuttu* can also be a verb, its word-class affiliation is taken to be the one that fits the word-formation pattern. This approach has been used consistently throughout the present paper. In doing so, we follow the practice of characterizing word-formation processes in terms of the part of speech of their input as e.g. deverbal, denominal etc. Note, however, that we do so out of convenience, not necessarily out of theoretical conviction. The present paper remains agnostic as to the issue of multifunctionality or the role of syntactic category information in word-formation (see, e.g., Plag 1997 for discussion of the latter point).

[7] There is only one case of variation in head-modifier order attested in Schumann's dictionary (*horrowatra* ~ *watra-horro* 'spring, well'), and one compound that could potentially be analyzed as left-headed (*pisifo*, see (11a)). Given the clear patterning of all other attested compounds we can assume that Early Sranan compounds are standardly right-headed.

[8] Jacques Arends suggested that <sh> in *nem-sheki* might be a transcription error (<sh> instead of <s>) This is, however, unlikely in view of the fact that the word occurs in two different spellings (*nem-sheki* and *nem sheki*) and in both cases <sh> is used. The occurrence of <sh> could either phonetically motivated (assimilation to the following vowel), or (more likely) it is in fact a case of folk etymology: *seki* (< E. *sake*) is not attested in Schumann, the use of the frequent verb *sheki* can at least partially motivate the second element in the compound, even though the compound as a whole is still not completely transparent.

[9] Jacques Arends pointed out to us that the ethnonym *Saramakka* (and its source, the toponym designating the Saramakka River) is ultimately of Amerindian origin (cf. Carib or Arawak *-ka* suffix). On the basis of this fact one could perhaps argue that it is not a morphologically complex word at all and should therefore not be discussed here. However, Nübling (2001) convincingly shows that names, toponyms in particular, are often partially motivated and transparent, because they are made of independently attested lexical items (cf., for example *Newcastle, Cambridge, Blackpool etc.*). Linking *Saramakka* and *makka* may thus be a case of folk etymology, which, however and crucially, leads to a semi-transparent form, where the meaning of at least one part can be inferred.